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SPECIAL SECTION: THE PUZZLE OF SEXUAL ORIENTATION

# Recognition and Construction of Top, Bottom, and Versatile Orientations in Gay/Bisexual Men

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**Abstract** Research on gay and bisexual men's sexual position self-label (i.e., being a top, bottom, or versatile during anal sex) has revealed only independent snapshots of its development by focusing primarily on the influence of penis size. Moreover, the basic chronology of development of the sexual position self-label has barely been addressed. In response, we implemented a survey of 282 gay and bisexual men that measured demographics (including height and penis size), age of sexual recognitions, sexual position self-label, and attitudinal constructs suggested by previous literature as important (e.g., pleasure, control, anxieties, and gender typicality). Results suggested that men's sexual position self-label was learned over a 15-year timespan. Ages of first same-sex genital manipulation and first anal sex experiences were related to age at first self-labeling. With respect to predictors of labels, a multivariate path model was created. The model did not support the direct importance of penis size, but identified indirect paths that linked penis size to top/bottom identification (e.g., smaller penis sizes leading to topping-anxieties and thus, a bottom label). Finding bottoming to be pleasurable and the importance of sexual control dynamics were the only two direct predictors. The path model substantiated the reliance both bottoms and tops show towards seeking (or not seeking among tops) gender typical, sexually dominant partners. It also supported previous evidence regarding race; specifically, while race may activate differences in sexual behavioral dynamics, it is not a great predictor of the sexual position self-label. This study shows that sexual position self-labeling has enormous complexity and cannot be reduced down to penis size.

**Keywords** Anal penetrative role · Penis size · Gender typicality · Sexual power · Sexual orientation

## Introduction

There has been a dramatic increase in the scientific understanding of receptive and insertive anal sex behaviors of gay and bisexual men. While initially framed as a key behavioral variable impacting the likelihood of HIV infection (Hart, Wolitski, Purcell, Gómez, & Halkitis, 2003; Weinrich et al., 1992), secondary research has revealed that men readily identify as their anal penetrative orientation (i.e., if exclusively insertive, a "top"; if exclusively receptive, a "bottom"; or if willing to be both insertive and receptive, a "versatile") (Carballo-Diéguez et al., 2004; Gil, 2007; Kippax & Smith, 2001; Moskowitz, Rieger, & Roloff, 2008; Underwood, 2003; Wegesin & Meyer-Bahlburg, 2000). Gay men's labeling as a top, bottom, or versatile has been referred to in the literature as their sexual self-identity and/or sexual self-label (Hart et al., 2003). For clarity, we will refer to such labeling as men's sexual position self-label or self-identity. Pockets of research have identified contributing factors to whether men identify in a specific way. However, because these findings resulted from a secondary analysis of other primary research (e.g., on HIV/STD prevention, sexual risk-taking, racial stigma and stereotyping, negative affective states), these variables reveal only independent snapshots of how sexual position self-label develops. Moreover, there still exists a gap in the literature regarding the chronology of the sexual position self-label vis-à-vis men's identification as gay or bisexual. That is, when is the sexual position self-label recognized? This current research aims to answer this question and, in addition, create a multivariate path model that accounts for the host of potentially important

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independent variables identified by extant research regarding labeling as a top, bottom, or versatile.

## Recognition of the Sexual Position Self-Label

As stated, the basic question of when a sexual position self-label develops and is recognized has never fully been investigated. The first studies acknowledging same-sex anal penetrative role (e.g., Carrier, 1976, 1977) identified that men take different roles and that some men can be somewhat exclusive in the roles they take. Later studies (e.g., Wegesin & Meyer-Bahlburg, 2000; Weinrich et al., 1992) investigated the correlates of taking and adhering to these penetrative roles. Studies throughout the late 1990s and through the first decade in the twenty-first century continued identifying correlates of sexual position self-labels (e.g., Carballo-Diéguez et al., 2004; Gil, 2007; Grov, Parsons, & Bimbi, 2010; Kippax & Smith, 2001; Maskowitz & Hart, 2011). However, the maturation of anal penetrative role adherence as a process and, as a corollary, the recognition and point-of-adoption of a sexual position self-label (e.g., as a top or bottom) was overlooked until a recent mixed methods study (Pachankis, Buttenweiser, Bernstein, & Bayles, 2013). Pachankis et al. were the first to document that gay and bisexual men treat their sexual position self-labels as somewhat fluid and mutable (with 51.6 % of their sample changing their self-labels over time). They cited variables such as increasing experience, physical comfort, and reduced ambiguities through experience as impactful over the changes. It was unfortunate that neither their participants reported at what age these labels were discovered/established nor did Pachankis et al. report additional data that would indicate this. For this reason, we are furthering this line of questioning by assessing at what age men could recognize and act on their sexual position self-labels. We account for how many men differentiate between their ideal sexual position self-label (i.e., what they unilaterally prefer) and their "in-reality" sexual position self-label (i.e., what men actually enact with partners) (see Moskowitz & Hart, 2011; Pachankis et al., 2013; Wei & Raymond, 2011).

## Correlates of the Sexual Position Self-Label

The paucity of literature on the precise acknowledgement of the self-label notwithstanding, studies have proliferated on the potential reasons for the establishment of a top, bottom, or versatile identity. Initially, gender typicality was cited as a controversial construct regarding penetrative role. Weinrich et al. (1992) found no significant association between insertive role and masculine identities but found receptive roles to be somewhat associated with feminine identities. However, Bailey, Kim, Hills, and Linsenmeier (1997) found men make associations between the label "bottom" and feminine descriptors, and the label "top" and masculine descriptors. Another study found that, in Latino cultures, tops are perceived as "masculine," and bottoms, as "feminine" (Carballo- Diéguez et al., 2004). More recently, Moskowitz and Hart (2011) found comparative masculinity (i.e., how gender typical a gay/bisexual man was relative to other men) to follow a descending pattern, with tops expressing the most typicality, bottoms expressing the least typicality, and versatiles, between the two extremes. Echoing the quantitative results, qualitative research with young gay and bisexual men reinforced masculinity and sensitivity to stereotypes (i.e., belief in perceptions that tops are more masculine and bottoms are more feminine) as contributing to role identification adoption (Johns, Pingel, Eisenberg, Santana, & Bauermeister, 2012).

In addition to gender typicality, the men in the Johns et al. (2012) study identified strength, power, and control as important correlates of topping or bottoming with sex partners. These constructs were described in terms of physical dominance (e.g., height, body size) and psychosexual dominance (e.g., self-assertiveness, self/sexual confidence). Previous studies had also found strength, power, and control in the sexual context to be important for a top, bottom, or versatile orientation (Damon, 2000; Gil, 2007; Kippax & Smith, 2001; Moskowitz et al., 2008). Tops were perceived as powerful and dominant, and bottoms, as controllable and submissive. These initial studies on strength and control led to further investigations that explored the role of race on top, bottom, and versatile anal penetrative behaviors. Stereotypes exist among gay and bisexual men that link specific race/ethnicity groups as being perceived more likely to top (e.g., Black men) or bottom (e.g., Asian men) (Lick & Johnson, 2015). Underlying these presumptions are stereotypical expectations about gender typicality, submissiveness, dominance, and penis size (Johnson, Freeman, & Pauker, 2012). Wei and Raymond (2011) were the first to explore this association between race and sexual position self-label among Asian-American men, confirming its existence. Tan, Pratto, Operario, and Dworkin (2013) qualified this previous work by adding lower social dominance as an important moderator that activates bottoming behaviors in Asian men. Most recently, research has focused on Latino and Black men, to investigate the degree to which anecdotal reports of race being predictive of sexual position self-label could be substantiated. Grov, Saleh, Lassiter, and Parsons (2015) initially found race to be unassociated with sexual position; however, in a follow-up study (Grov, Rendina, Ventuneac, & Parsons, 2016), the researchers found Black men more likely to top (i.e., engage in insertive anal intercourse) and particularly if they were with a racially different partner. These results were not found for Latino populations. Overall, the research seems to point to strength, power, and control as important over the sexual position self-label, and race, a more indirect and cloudy indicator of penetrative orientation.

The race research only touches on stereotypes about penis size (particular for Asian men and Black men) and top or bottom sexual position self-labeling. Yet, more direct research indicates penis size itself to be important, in addition to gender typicality and strength/control. Qualitative research has quoted gay men as devaluing small penises because of their "boring" nature and inabil-

ity to be "felt" during anal intercourse (Drummond & Filiault, 2007). Unsurprisingly, Grov et al. (2010) identified a descending trend in penis size with tops reporting above average penises, bottoms reporting below average penises, and versatiles reporting average penises. Moskowitz and Hart (2011) replicated these descending penis size findings. They also showed that penis size was largely responsible for men's deviation from their ideal sexual position self-label (e.g., men identifying as bottoms were more likely to top if they had larger penises). Self and partner-penis sizes, specifically the concerns about penis size during intercourse, have been expressed as influential over how one self-labels (Underwood, 2003); and these concerns may impact the anxiety and pleasure exacted during anal intercourse. As a corollary, sexual performance anxiety and sexual pleasure during anal sex too have been identified as independently predictive.

The prostate gland has been shown as a pleasure center for men, and the rectum is one of the tightest bodily orifices, which can produce intense friction during anal sex (Mah & Binik, 2001). Men can vary in their interest in the utilization of each or both. Early studies identified that gay men can have anxiety when bottoming (Rosser, Short, Thurmes, & Coleman, 1998), particularly as it applies to fears surrounding pain from penetration. This anxiety is usually a good predictor of anodyspareunia (i.e., frequent and severe pain during receptive anal sex), and as a corollary, less likelihood to engage in bottoming behavior (Damon & Rosser, 2005; Vansintejan, Vandevoorde, & Devroey, 2013). Anxiety also can occur for gay and bisexual men when taking on the top role (Bancroft et al., 2003; Sandfort & de Keizer, 2001); however, this anxiety usually stems from fears surrounding penetrative performance, including maintaining an erection from start to finish, and partners' perceptions of penis size (Jacobson, 2014). This research suggests that men more susceptible to performance anxiety when having insertive anal sex would be more likely to bottom; men more susceptible to performance anxiety when having receptive sex would be more likely to top. In some instances, men with performance anxieties may choose to abstain from anal sex altogether. While much of the literature focuses on anal sex anxiety, some research focuses on the pleasure specifically derived from topping or bottoming (Hoppe, 2011). Men suggested that the sexual position self-label was often a byproduct, depending on how important maximizing insertive or receptive pleasure during the sexual experience was to an individual. Men who value the physical and psychological pleasure of taking a specific behavioral role tend to adopt the role as their sexual position self-label.

Gender typicality, strength/control, penis size, and anxiety/pleasure have separately been shown to correlate with the sexual position self-label. Yet, there exists a tremendous amount of overlap between the variables. For example, while it may be tempting to argue that men who are more masculine than their partners are more likely to top (see Moskowitz & Hart, 2011), a more accurate explanation might be that men's perceptions of self versus partner masculinity impact their sensitivity to strength and control during sex, which impacts their preference to top (as suggested qualitatively by Hoppe, 2011; Johns et al., 2012). As another example, men who have anxiety about performing as a top ostensibly might be more likely to bottom. But perhaps, because this anxiety exists, such men may systematically prevent ever being in a situation when they need to top through partner selection. That is, sexual anxiety when topping might lead men to select stronger, more controlling partners they know, or strongly perceive, to be tops as an a priori criterion. Our hypothesized path model attempts to account for such direct and indirect associations when predicting a sexual position self-label.

## Hypotheses

### Recognition of the Sexual Position Self-Label

Much of the research previously described suggests that position self-label may be learned, as a result of actual sexual interactions with same-sex partners, vicarious learning through watching sexual stimuli, or socialization with other gay and bisexual men. We therefore posited:

**H1** On average, men will report having had receptive and/or anal intercourse prior to recognizing their sexual position self-identity.

**H1a** Men reporting having recognized their sexual position self-identity *prior* to having anal sex will be younger.

**H1b** Additionally, men who recognize their sexual self-identities prior to having had anal sex will report longer time spans from initial same-sex behavior debut (i.e., hand-genital stimulation by a partner) to eventual anal intercourse debut.

### Correlates of Sexual Position Self-Label

**H2** Strength/control of partner, and penis size, will positively and directly contribute towards preferences for being a top. Bottoming as pleasurable, will negatively and directly contribute towards preference for being a top. Race/ethnicity of partner as impactful will not directly be related.

**H2a** Antecedent variables will impact these direct variables in the following ways: strength/control of partner will be positively influenced by gender typicality of partner and penis size as a factor, but negatively by sexual anxiety when topping. Bottoming as pleasurable will be negatively influenced by self-reported penis size and sexual anxiety with bottoming, but positively influenced by sexual anxiety when topping. Race/ethnicity of partner as impactful will be positively influenced by gender typicality of partner and penis size as a factor.

**H2b** Tertiary variables will impact these antecedent variables in the following ways: penis size as a factor will be positively influenced by gender typicality of partner and self-reported penis size. Gender typicality of partner will be positively influenced by height

and negatively influenced by sexual anxiety when bottoming. Sexual anxiety when topping will be negatively influenced by self-reported penis size.

## Method

### Participants and Procedure

Over the Summer of 2015, advertisements with an embedded survey link were placed on gay-oriented online discussion forums (e.g., en.gay-lounge.net, gayspeak.com, gayforum.org), asking men to take a 20-minute online survey on their sexual position self-labels, position behaviors, enacted sexual activities with partners, and attitudes about how they understood their labels. Emails with the link were also sent to gay-oriented listservs largely subscribed to by gay and bisexual men (e.g., the LGBT caucus of public health workers). We also used respondent driven sampling by encouraging participants to email the survey link to gay and bisexual men in their social networks. Although the survey was conducted in English, the sample was international (with men from the U.S., UK, Canada, Switzerland, Germany, and Italy partaking, as identified by their zip codes). The exact response rate was impossible to calculate given the passive nature of the advertisement postings and degree to which emails sent to the listserv were ignored or filtered. The first page of the online survey acted as a consent form. Participants could not advance to the actual survey without clicking a box to consent. Only men who identified as either gay or bisexual were allowed to complete the survey. This was implemented by using a redirect function in the survey, which dismissed participants not describing themselves as such. Participants interested in compensation could email the survey administrator after completion to be entered into a raffle for one of ten 15 USD paypal transfer cash gifts. Of the 387 men who answered the first question, 282 (72.9 %) completed the survey in its entirety.

### Measures

Demographic information was first collected, including age, race, education, gender, and relationship status (see Table 2 for the variable attributes). The men indicated their sexual orientations in two ways: by label (i.e., heterosexual, bisexual, homosexual, or no sociosexual contacts or relations/asexual) and by 7-point Kinsey Scale (i.e., Kinsey 0 denoting exclusively heterosexual; Kinsey 6 denoting exclusively homosexual). Additionally, we asked for the men to report their body height, and erect penis length and circumference. Specifically we asked that they "indicate or estimate, with as little size inflation as possible, the size and circumference of your [the participant's] erect penis. Remember, the average penis is about 4.7″–6.3″ (12 cm–16 cm) in erect length and 3.5″–4.7″ (9 cm–12 cm) in circumference."

#### *Sexual Attraction and Orientation Recognition*

Considering our research questions centered on initial sexual self-discovered, we wanted to first assess the men's same-sex sexual attraction and sexual orientation recognitions. Two text boxes were provided where participants could indicate the "age that you [the participants] recognized your same-sex attractions," and "age that you understood yourself to be gay, bisexual, or heterosexual."

#### *Sexual Position Self-Label, Label Recognition, and Age of First Penetration*

We assessed sexual position self-label by ideal role and most commonly enacted, or "in-reality," penetrative role. First, we defined each sort of penetrative role: top (being the insertive partner during anal intercourse), bottom (being the receptive partner during anal intercourse), and versatile (being either or both the insertive and receptive partner during anal intercourse). We followed these definitions with informative text. "Gay and bisexual men can take on the top, bottom, or versatile label as a sexual position self-identity. They label as such as they socialize, advertise, and look for sexual partners. Think about what you consider your ideal sexual [position] self-identity you would take every time during sex if you could and also; how with real partners, your sexual [position] self-label changes or stays the same." The men were asked to select their "ideal self-identity" from a dropdown menu: "1. ideally, exclu sive bottom," "2. versatile (but prefer to ideally bottom more than top)," "3. versatile (ideally bottom and top in almost equal proportions)," "4. versatile (but prefer to ideally top more than bottom)," "5. ideally, exclusively top," and "6. I don't want to have anal sex." Following, participants were asked to select one of the above six labels for their "reality self-labels." Men not wanting to have anal sex were not included in the study ($n = 8$). The ideal and reality self-labels were treated nominally for descriptive purposes and continuously (as preference for topping, with higher scores meaning more of a preference for labeling as a top) for analytic purposes.

Finally for this section of the survey, we asked the men to fill in a textbox with the age that they "realized my [the participants] ideal sexual position self-label," and "realized my actual/in-reality sexual position self-label." We also asked for the age they first had receptive and (as a separate question) insertive anal intercourse with another man. For control purposes, we asked the age when they first received same-sex genital stimulation.

#### *Contributing Measures Impacting Ideal Sexual Position Self-Label*

In additional to the more objective measures (specifically, height and self-reported penis size), seven constructs were identified through previous literature as potentially impactful over the sexual position self-label. We created these scales, described within Table 1, from quotes documented by qualitative research (e.g.,

**Table 1** Summary of scaled constructs

| Constructs | Operational Definition | Items | α | Example of item | Suggested by |
|---|---|---|---|---|---|
| Bottoming as pleasurable | Enjoying/anticipating the physical feelings associated with receptive anal sex | 4 | 0.71 | I enjoy having my prostate excited by internal stimulation (usually from a penis) | Hoppe (2011), Kippax and Smith (2001), Pachankis et al. (2013) |
| Sexual anxiety when bottoming | Explicitly or implicitly fearing the physical pain or psychological feelings/expectations during receptive anal sex | 3 | 0.72 | When my partner asks me to bottom, I start thinking about how well I'm going to perform sexually | Damon and Rosser (2005), Rosser et al. (1998), Vansintejan, et al. (2013) |
| Sexual anxiety when topping | Explicitly or implicitly fearing the physical or psychological feelings/expectations during insertive anal sex | 6 | 0.88 | I feel there is too much pressure to perform when topping | Jacobson (2014), Sandfort and de Keizer (2001), Underwood (2003) |
| Strength/control of partner | Sensitivity to, or care about, the physical strength or behavioral dominance of a partner | 8 | 0.67 | Tops have most of the control during sex and bottoms get to relax and enjoy the ride | Gil, 2007; Johns et al. (2012), Kippax and Smith (2001), Moskowitz et al. (2008) |
| Gender typicality of partner | Sensitivity to, or care about, masculine gender roles or male stereotypical indicators exhibited by a partner | 5 | 0.75 | I tend to bottom if my partner seems to be more masculine than me | Johns et al. (2012), Moskowitz and Hart (2011) |
| Penis size as a factor | Sensitivity to, or care about, the size of a partner's penis | 4 | 0.67 | I will top if my partner's penis is smaller than mine | Drummond and Filiault (2007), Grov et al. (2010), Jacobson (2014), Moskowitz and Hart (2011), Pachankis et al. (2013) |
| Race/ethnicity of partner as impactful | Sensitivity to, or care about, racial differences between one and one's partner | 3 | 0.71 | I am more likely to deviate from my normal sexual position self-identity with partners of a different race | Grov et al. (2016), Lick and Johnson (2015), Tan et al. (2013), Wei and Raymond (2011) |

strength/control as a contributory factor for role orientation) and from trends described by quantitative research (e.g., partners' penis sizes as a factor for role orientation). Items were measured on a five-point scale from (1) "strongly disagree" to (5) "strongly agree." These were as follows: "bottoming as pleasurable," "sexual anxiety when topping," "sexual anxiety when bottoming," "gender typicality of partner," "race/ethnicity of partner as impactful," "penis size as a factor," and "strength/control of partner." To be clear, the four latter variables were measures of how much these areas (gender typicality, race/ethnicity, penis size, and strength/control) impacted the men's decisions to top, bottom, or be versatile. Table 1 describes the measurement of these constructs and their operational definitions, examples of their underlying items, reliability, and from which existing studies the constructs were suggested. Reliabilities were generally good, ranging from 0.67 to 0.88.

## Statistical Analysis

The initial analyses were done with SPSS versions 22.0. The sample size varied from 282 to 254 depending on missing values from participants. To address the first research goal, the data were analyzed using a series of matched-pair *t* tests to assess differences between same-sex sexual progression milestones. Insertive and receptive anal sex behavioral categories were both treated separately in the analyses. To look at the role of age and age of sexual milestone recognition on time between recognitions, we used several multiple linear regressions. When additional terms were entered in a model, we report the $\Delta R^2$ contribution to the model and its statistical significance.

To address the second research objective, we created a path model to better understand the interrelationship between identified variables and ideal sexual self-label. In-reality sexual position self-label was *not used* in these analyses. The model was tested using participants who had completed all the composite and single measures, leaving no missing data ($n = 254$). To assess how well the proposed path model fit the data, a path analysis with fixed error variances and fixed error terms of indicators was conducted with Mplus 7.11. This test used three standards of fit: a nonsignificant Chi square, a comparative fit index (CFI) greater than .95 (Bentler, 1990), and a root-mean-square error of approximation (RMSEA) less than .05 (Hu & Bentler, 1999). Thirteen indirect paths implied by the direct links in our model were also tested. Because the distribution of indirect coefficients was not normally distributed, a bootstrap method was used to calculate the significance of indirect paths. Biased corrected 95 % confidence intervals were created from 5,000 samples. If the intervals did not contain 0, the indirect effect was significant.

**Table 2** Description of the sample

| | *n* | % of *N* | *M* | *SD* |
|---|---|---|---|---|
| Age[a] | | | 38.84 | 12.43 |
| Kinsey score[b*] | | | 5.27 | 1.17 |
| Age of same-sex attraction[c] | | | 11.96 | 4.68 |
| Age of sexual orientation recognition[d] | | | 17.35 | 6.83 |
| Age of first insertive anal intercourse[e] | | | 21.93 | 6.99 |
| Age of first receptive anal intercourse[f] | | | 22.05 | 7.38 |
| Age of ideal sexual position self-label recognition[g] | | | 24.60 | 8.90 |
| Age of in-reality sexual position self-label recognition[g] | | | 26.86 | 9.63 |
| Relationship status | | | | |
| Single | 117 | 41.5 | | |
| Noncohabiting with a man | 31 | 11.0 | | |
| Noncohabiting with a woman | 1 | 0.4 | | |
| Cohabitating relationship with a man | 62 | 22.0 | | |
| Cohabitating relationship with a woman | 5 | 1.8 | | |
| Legally married to a man | 48 | 17.0 | | |
| Legally married to a woman | 15 | 5.3 | | |
| In a polyamorous relationships | 3 | 1.1 | | |
| Race/ethnicity | | | | |
| White | 234 | 83.6 | | |
| Black | 7 | 2.5 | | |
| Latino | 16 | 5.7 | | |
| Asian/Pacific Islander | 7 | 2.5 | | |
| Other/mixed race | 16 | 5.7 | | |
| Education | | | | |
| Some high school/finished high school | 20 | 7.1 | | |
| Some undergraduate | 41 | 14.5 | | |
| Finished undergraduate | 67 | 23.8 | | |
| Some graduate | 34 | 12.1 | | |
| Finished graduate | 120 | 42.6 | | |
| Sexual orientation | | | | |
| Heterosexual | 1 | 0.4 | | |
| Bisexual | 46 | 16.3 | | |
| Homosexual | 234 | 83.0 | | |
| No sociosexual contacts or relations/Asexual | 1 | 0.4 | | |

$N = 282$. Ranges: [a] 18–76; [b] 0–6; [c] 3–35; [d] 3–53; [e] 9–64; [f] 5–52; [g] 11–64

* The one man scoring a Kinsey-0, also reported being "heterosexual" and was excluded from analyses. The one man reporting to be "asexual" reported being a Kinsey-5, assigned himself ideal and in-reality position self-labels and, therefore, was included in the analyses. Two participants did not indicate their race

## Results

### Sample

As shown in Table 2, the sample was largely White and well educated with 54.7 % having started or completing graduate school. Most men were between 30 and 50 years old. The men tended to report being homosexual, but a notable portion reported being bisexual and the average Kinsey score was closer to five than six. Fifty percent of the participants expressed being in some sort of same-sex relationship. While we treated the "ideal sexual position self-label" as continuous for the path analysis and call it "preference for topping," the nominal spread of labels was 33 (12.8 %) exclusive bottom, 63 (24.5 %) versatile-bottom, 65 (25.3 %) exclusively versatile, 61 (23.7 %) versatile-top, and 35 (13.6 %) exclusive top. The nominal spread of "in-reality" labels was 38 (14.8 %) exclusive bottom, 74 (28.8 %) versatile-bottom, 31 (12.1 %) exclusively versatile, 69 (26.8 %) versatile-top, and 45

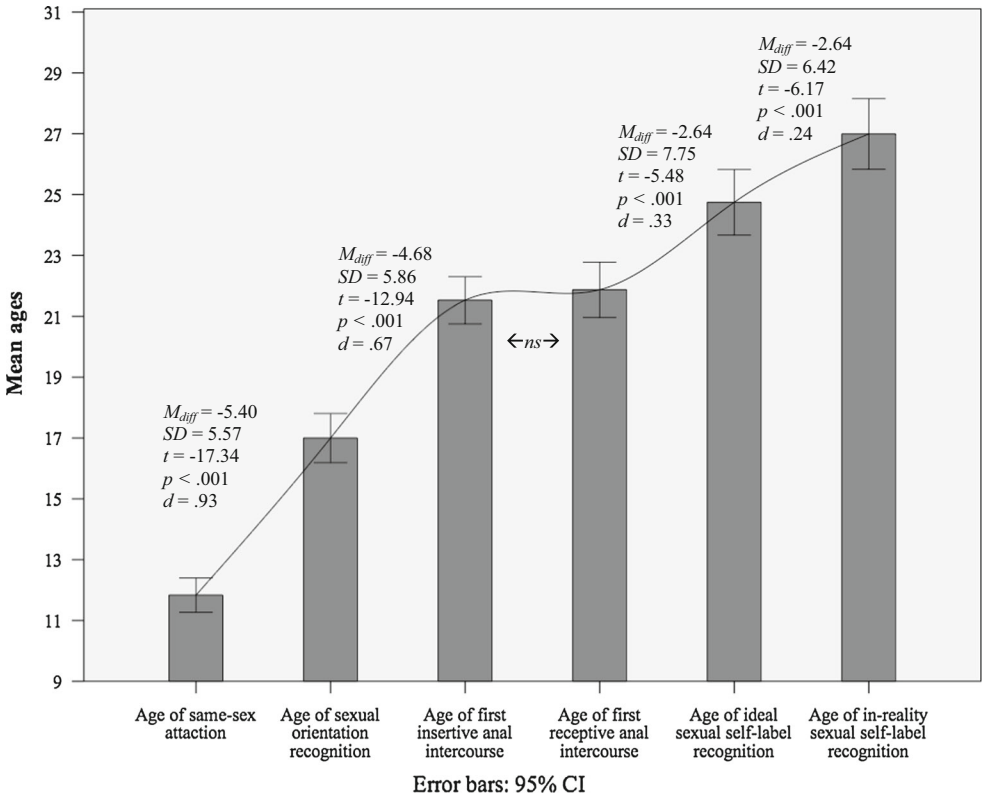


**Fig. 1** Men's average growth of sexual milestone recognition and behavioral enactment. All *bars* are statistically different from one another except for the two mean ages for insertive and receptive intercourse

(17.5 %) exclusive top. For the path analysis, only the ideal sexual position self-label (i.e., preference for topping) was used in the analyses.

## Debut of Sexual Position Self-Label and Associated Milestones

Table 2 also shows the average age-recognitions of sexual attraction and orientation, age-enactments of anal intercourse behaviors, and age-recognitions of the men's ideal and in-reality sexual position self-labels. To explore the development of the sexual position self-label within the context of sexual self-awareness and experiential learning, we plotted the six milestones and tested for differences between the means. A statistically significant and discreet chronological order was found such that the men, on average, reported same-sex attraction, then sexual orientation recognition, then engagement in insertive/receptive intercourse, then recognition of an ideal sexual position self-label, and finally, the recognition of their in-reality sexual position self-label (see Fig. 1).

Considering the evidence for label tending to follow experience (i.e., being experientially learned), we posited factors that might have led men to recognize the sexual position self-label even *before ever having anal intercourse* (i.e., factors that led men to defy the experience-first trend). We created two contrast scores by subtracting age of receptive anal intercourse from age of ideal sexual position self-label recognition ($M = 2.64$, $SD = 7.75$) and also, age of insertive anal intercourse from age of ideal sexual position self-label recognition ($M = 3.02$, $SD = 7.97$). Positive scores indicated that anal intercourse happened first; negative scores indicated that the sexual position self-label was recognized first. We were most curious about age being important for the time of sexual position self-label recognition. A linear model was created that explored the age of the men, after controlling for their age of sexual attraction and sexual orientation recognitions, on the ideal label-receptive sex contrast score. The model was significant, $F(3, 254) = 8.32$, $p < .001$, $R^2 = .09$, such that younger men ($p < .001$; $\beta = 0.27$) and men who recognized their sexual orientations later in life ($p < .001$; $\beta = -0.24$) were more likely to recognize their self-label prior to having intercourse. For insertive intercourse, the model was again significant, $F(3, 254) = 7.17$, $p < .001$, $R^2 = .08$, with younger men relative to older men ($p < .001$; $\beta = 0.29$) being more likely to recognize their self-label prior to having intercourse. Age of sexual orientation recognition was not a significant predictor within this model (Fig. 2).

In addition to age, we anticipated a preceding step that might impact recognition of the sexual position self-label prior to having sexual intercourse. We selected the most introductory, dyadic form of same-sex behavior, having one's penis stimulated by another man (i.e., age of "getting a handjob"; $M = 17.75$, $SD = 5.92$), as a potential precursor that might impact the relationship between

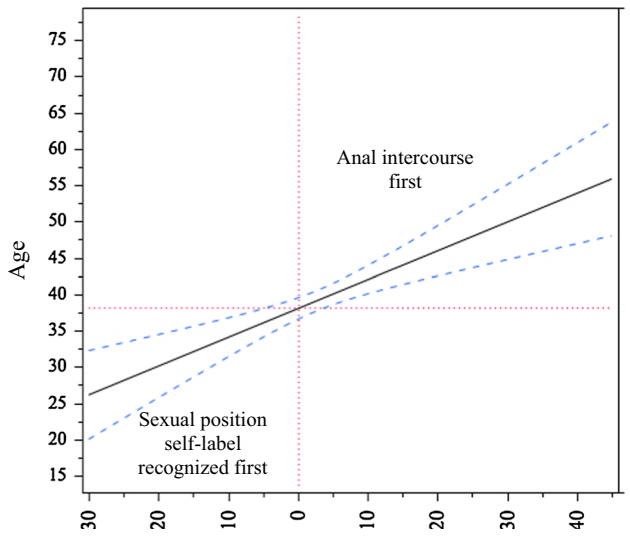


**Fig. 2** Men's relationship between age and ideal sexual position self-label-receptive anal contrast scores

recognition of the sexual position self-label and anal intercourse. Again, we created contrast scores by subtracting age of receptive anal intercourse enactment from age of first same-sex genital manipulation ($M = -3.18$, $SD = 9.21$) and also, age of insertive anal intercourse from first same-sex genital manipulation ($M = -3.15$, $SD = 8.41$). Positive scores indicated that anal intercourse occurred first; negative scores indicated that the same-sex genital manipulation had occurred first. We inputted these contrast scores into the two models described above. Both models were found to remain significant. For the receptive contrast score model, the $\Delta R^2$ was .04, ($p < .0001$). The genital manipulation-anal intercourse score was related to self-label recognition before sex ($\beta = 0.24$, $p < .0001$) such that men who reported more time between first genital manipulation and first receptive anal intercourse *also* reported more negative anal intercourse-sexual position self-label recognition scores (i.e., were more likely to report recognizing their self-label before having receptive anal sex). Similarly, for the insertive contrast score model, the $\Delta R^2$ (.02) was statistically significant, ($p < .05$). Specifically, the genital manipulation-anal intercourse score was a significant predictor ($\beta = 0.15$; $p = .03$) such that men who reported more time between first genital manipulation and first insertive anal intercourse *also* reported more negative anal intercourse-sexual position self-label recognition scores (i.e., were more likely to report recognizing their self-label before having insertive anal sex).

## Contributing Factors to the Adoption of an Ideal Sexual Position Self-Label

We next investigated the relationship between the independent variables previously identified by the literature, their interplay, and the sexual position self-label. These variables and their correlations are presented in Table 3. We created and tested a path model based on the relationships contained in H2, H2a, and H2b. The underlying regression model was statistically significant, $F(9, 244) = 32.82$, $p < .001$, $R^2 = .54$ (see Fig. 3). All three fit indicators were acceptable. The chi square was not significant, $\chi^2(26) = 36.05$, $p = .09$. The comparative fit index fell within the predefined standard parameters (CFI = .985), as did the root-mean-square error of approximation (RMSEA estimate = 0.039, 90 % CI = 0.00–0.067).

We hypothesized three variables would be directly related to sexual position self-label (i.e., bottoming as pleasurable, penis size, and strength/control of partner) and in turn, these three predictors would be related to second-order variables, which themselves would be related to tertiary variables. Figure 3 contains the direct standardized coefficients with SEs and Table 4, the standardized indirect coefficients. The model supported almost all of the hypotheses. Consistent with H2, bottoming as pleasurable and an increased expectation or reliance on strength/control exhibited by partners were directly predictive of being a bottom. However, the direct relationship of penis size was not statistically significant. All eight direct relationships specified in H2a and four direct relationships in H2b were confirmed. Of the thirteen indirect paths we tested (see Table 4), nine were statistically significant. Tests of indirect paths uncovered complex relationships. To help with the interpretation of effects, recall that a high score on the sexual position self-label measure indicates preference for being a top and a low score indicates a preference for being a bottom.

Although self-reported penis volume was not a statistically significant direct predictor of sexual position self-label, it was related to it through three indirect paths. First, smaller penis volume (also known as penis size) was associated with reporting bottoming as more pleasurable and as a result, preferring to bottom. Second, smaller penis size was positively associated with sexual anxiety when topping, which led to reporting bottoming as more pleasurable and then a preference towards bottoming. Third, smaller penis size was associated with increased sexual anxiety when topping, which in turn led men towards an increased reliance on strength/control exhibited by a partner, finally culminating in a preference for labeling as a bottom. Thus, penis size was not, ipso facto, a statistically significant direct predictor of self-label. It indirectly exerts influence through other variables. In each case, the indirect coefficient between one's penis volume/size and topping-preference was positive which means that one's penis volume/size indirectly reflected greater preference for being a top than bottom.

Strength/control of partner, while directly and negatively predictive of preference for topping, also served as the predictor on the final step of several indirect paths. For example, expectations of gender typicality of a partner promoted a preference for bottoming, but only when men who valued gender typicality relied on the perceptions of strength and control exhibited by a partner. Perhaps the most interesting finding and opposite to what we had predicted in H2b, sexual anxiety when bottoming was actually *predictive* of bottoming, when it led to reliance on the gender typicality of a partner which in turn was positively related to reliance on strength/

**Table 3** Correlation matrix of the direct and indirect variables

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | M | SD |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. Bottoming as pleasurable[a] | – | −0.55** | 0.23** | 0.04 | −0.08 | 0.02 | 0.00 | −0.17** | 0.06 | −0.66** | 2.97 | 0.67 |
| 2. Sexual anxiety when bottoming[a] | | – | 0.07 | 0.17** | 0.19** | 0.11 | 0.08 | 0.00 | −0.01 | 0.34** | 2.09 | 0.71 |
| 3. Sexual anxiety when topping[a] | | | – | 0.42** | 0.19** | 0.06 | 0.14* | −0.21** | 0.08 | −0.30** | 2.19 | 0.73 |
| 4. Strength/control of partner[b] | | | | – | 0.57** | 0.40** | 0.41** | −0.04 | 0.03 | −0.26** | 2.08 | 0.46 |
| 5. Gender typicality of partner[c] | | | | | – | 0.54** | 0.47 | 0.07 | 0.15* | −0.06 | 1.99 | 0.59 |
| 6. Penis size as a factor[a] | | | | | | – | 0.40** | 0.16** | 0.10 | −0.13* | 2.00 | 0.64 |
| 7. Race/ethnicity of partner as impactful[d] | | | | | | | – | −0.03 | −0.04 | −0.14* | 1.56 | 0.57 |
| 8. Penis volume[e] | | | | | | | | – | 0.11 | 0.23** | 130.05 | 6.78 |
| 9. Height[f] | | | | | | | | | – | −0.05 | 69.6 | 4.09 |
| 10. Preference for Topping[g] | | | | | | | | | | – | 2.95 | 1.25 |

$N = 257$. Those not indicating their sexual position self-label were omitted before conducting the correlations. Penis volume was calculated using the formula for volume of a cylinder (i.e., penis volume $= \pi$(erect penis length)(erect penis circumference/$2*\pi)^2$. Erect penis length ($M = 6.61$in, $SD = .97$, 2.5-9.0in) and erect penis circumference ($M = 4.79$in, $SD = 1.14$, 1.5-8.5in) were self-reported.

* $p < .05$. ** $p < .01$. Ranges: [a]1–4; [b]1–3.25; [c]1–3.60; [d]1–3.67; [e]0.14–46.0 $in^3$; [f]55–81 in; [g]1–5

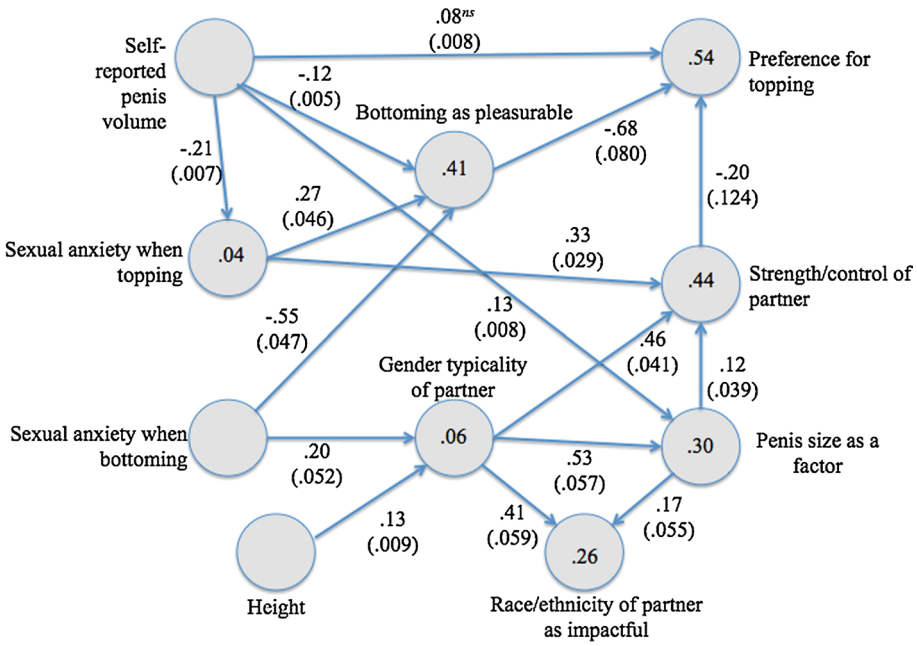


**Fig. 3** Path model predicting preference for topping among gay and bisexual men. The Model explains 54 % of the variance. Values within the variable circles represent the variance explained by the predictors. Values along the *arrows* represent the direct standardized coefficients. *Parenthesized* values represent the standard error of the coefficients. The standardized indirect coefficients may be found in Table 6. All paths are significant except for self-reported penis volume and preference for topping, which only approached significance ($p = .07$)

control of partners. This finding suggests that some men who are anxious about bottoming might still self-label as a bottom, and even bottom with partners.

Sexual anxiety as a top and bottom, respectively, were related to preference for topping or bottoming but only because the anxieties were differently related to anticipated anal intercourse pleasure. Those anxious about topping anticipated greater pleasure from bottoming ($\beta = 0.27$), which increased the likelihood they would self-label as a bottom. On the other hand, those anxious about bottoming anticipated less pleasure from bottoming ($\beta = -0.55$), leading to self-labeling as a top.

Finally, race/ethnicity of the partners was not predictive of self-labeling, but was significantly related to preference for gender typicality of partners and penis size as a factor. This last finding is consistent with previous studies on race and sexual position self-label/sexual position self-label perceptions. Men who report gender typicality of a partner and penis size as factors that determine whether they top or bottom were influenced more by the race of their partners than their sexual position self-label.

The overall findings from the path model suggest a complicated web of interrelated constructs that directly and indirectly explain half (54 %) of the tendency to label as a top, versatile, or bottom.

**Table 4** Indirect effects predicting preference for topping

| Indirect relationships | Standardized coefficient[a] | SE | Lower bound CI | Upper bound CI |
|---|---|---|---|---|
| Self-reported penis volume → Bottoming as pleasurable → | 0.080 | 0.033 | 0.014 | 0.145 |
| Self-reported penis volume → Sexual anxiety when topping → Bottoming as pleasurable → | 0.039 | 0.013 | 0.014 | 0.063 |
| Self-reported penis volume → Sexual anxiety when topping → Strength/control of partner → | 0.013 | 0.005 | 0.003 | 0.022 |
| Penis size as factor → Strength/control of partner → | −0.023 | 0.012 | −0.045 | −0.001 |
| Gender typicality of partner → Strength/control of partner → | −0.085 | 0.022 | −0.129 | −0.042 |
| Sexual anxiety when bottoming → Gender typicality of partner → Strength/control of partner → | −0.017 | 0.008 | −0.032 | −0.002 |
| Sexual anxiety when topping → Strength/control of partner → | −0.061 | 0.017 | −0.094 | −0.028 |
| Sexual anxiety when bottoming → Bottoming as pleasurable → | 0.374 | 0.035 | 0.305 | 0.443 |
| Sexual anxiety when topping → Bottoming as pleasurable → | −0.187 | 0.033 | −0.250 | −0.120 |

$N = 257$. 95 % biased corrected confidence intervals are reported based on 5000 samples. Preference for topping was coded so that a high score reflected topping and low score bottoming

[a] Indirect standardized coefficients are derived from the multiplication of the direct standardized coefficients within a path, from start to finish

## Discussion

We explored two issues with respect to the sexual position self-label of gay and bisexual men. First, we examined when men recognized they were bottoms, tops, or versatile. The sample showed a progression from awareness of same-sex attraction to the recognition of an "in-reality" sexual position self-label, which spanned an average of 15 years. The results also favored the concept that the sexual position self-label, specifically, was learned experientially or vicariously by contact with same-sex sexual stimuli. This finding may have some similarity or even overlap with sexual orientation understanding, identity trajectory establishment, and adherence (see D'Augelli, 1994; Floyd & Stein, 2002), especially since sociosexual milestones seemed to push men towards identity development and adoption. Younger men reported recognizing the self-label prior to ever having sex. This could be due to unlimited access to the ubiquity of sexual information from the Internet prior to having actual sex (e.g., pornography, sociosexual networking sites, blogs, etc.) combined with living in a subculture that has incorporated labels such as top and bottom into its social lexicon. Moreover, the finding of longer lapses between first same-sex genital contact and anal intercourse to be predictive of earlier recognition of the sexual position self-label suggests a sexual learning period. During this longer period, it is possible that gravitation towards a sexual position self-label may be recognized through masturbation (i.e., self-penetration), the enactment of dyadic sexual behaviors such as oral/manual anal stimulation, socialization with other gay and bisexual men, and community involvement. An analysis of maturing gay and bisexual adolescents might better clarify the learning process and development of the label.

We moved from self-recognition to identifying the factors that influence the adoption of a sexual position self-label. This second research objective was accomplished by understanding the interrelationship between nine variables found through previous quantitative and qualitative studies. Men's penis size initially was thought to directly impact position self-labels. However, the model suggested that smaller size positively influences other variables (e.g., finding more pleasure through receptive sex, increased anxiety when topping) that, in turn, distinguish between men who label as tops, bottoms, or versatiles. This finding is important because bottoms, particularly those with smaller penises, may learn to like receptive anal sex for reasons outside of the feelings associated with prostate stimulation. Partner dynamics may be impacted as well. Men may select partners they expect to be more dominant to minimize sexual anxiety when topping due to their penis size. Tendencies towards versatility may represent, for some men, increased comfort with their penis size and their abilities to perform.

The most important direct variable in the model was the degree to which the men register bottoming as pleasurable and as an important/expected part of sex. The antecedents predicting this variable are therefore important. In addition to penis size, performance anxiety predicted men's reporting of receptive anal sex as pleasurable. One notable problem with performance anxiety when bottoming is its reversible relationship with respect to anal pleasure. Specifically, do men who have anxiety when playing the receptive role simply never like the feeling of being penetrated or rather does their anxiety develop as a function of unpleasant experiences when being penetrated? This research cannot exactly answer this. Regardless, the data can speak towards versatile men. Such men fell, on average, in the middle of the line between extremes, regarding receptive anal sex pleasure. This suggests that they may be more likely to appreciate a sexual experience independent of penetration; that penetration may not need to be a

prerequisite of sexual congress; or that willingness to mutually engage in penetration (i.e., "flip-flopping") brings its own pleasure.

The final independent variable to directly predict sexual position self-label was expectancies about, or reliance on, strength and control dynamics during sex. For men labeling as bottoms, dominant and submissive role fulfillment during sex seemed to be more important than for the other groups. This speaks towards a difference in complexity expected during sex. While bottoms reported wanting to be penetrated because of the physical sensation, this may not be enough for some. Penetration may need to be augmented by perceived physical or psychological domination in order to produce an optimal sexual experience. The strong positive relationship between expectations of gender typicality of a partner and expectations of a partner's strength and control supports this notion. That is, men who enjoy bottoming more, and who may even label as such, seem to want their partners to mimic the stereotypical hegemonic male. Men who enjoy topping more, and who may even label as such, seem not to care as much about maleness or power-based expectancies in their sexual partners. This engenders a complementary sexual relationship that may work for many gay and bisexual men. However, there are gay and bisexual men who are masculine, dominant bottoms, and also, men who are feminine, submissive tops. This creates a problem that *may* lead to sexual exasperation and lower self-esteem. Such men may want to have penetrative sex but attract incompatible partners because of the wrong sexual position self-label assumptions they emit.

Two conflicting indirect paths were found to exist between sexual anxiety when bottoming and preference for topping. Anxiety when bottoming was positively related to self-labeling as a top because it was negatively related to bottoming as pleasurable and that, in turn, was negatively related to preference for topping. However, sexual anxiety when bottoming was also *negatively* related to self-labeling as a top because of its positive relationship with gender typicality, gender typicality's positive impact on expectancies about strength and control of a partner, and strength and control being negatively related to preference for topping. We think this second, more arcane relationship represents what is anecdotally known in the community as the "fussy bottom" or the "reluctant bottom." We found that men with bottoming anxieties still rely on the gender typicality of partners to govern the sexual experience. When partners are more feminine, they bottom; when they are more masculine, they top. This rule remains strongly related to want ing a more dominant partner as a top and a more submissive partner as a bottom, and as shown, men who rely on the strength/control of a partner to govern the experience are more likely to bottom. For the "fussy bottom," such men may have anxieties about bottoming, but ultimately label as such because partners may perceive them as more feminine and/or sexually passive. Considering the sociosexual pressure to self-label, such men may pick a bottom label because of how they stereotypically are perceived. But in actuality, they inconsistently or rarely partake in receptive anal intercourse, or complain through the process. This is most likely a rare group that future sex researchers might study.

The impact of a partner's race/ethnicity on penetrative role was entered into the model as a covariate. These findings were consistent with the stereotypical expectations associated with race, identified by the literature (Lick & Johnson, 2015). Men who use gender typicality as an indicator during sex and who may vary their behaviors depending on penis size were more likely to be influenced by race during sex. As an exploratory measure, we looked at a potential path between the sexual impact of race on the preference for topping (expecting, to some degree, that a negative relationship might emerge). The path was not significant, again, supporting previous literature that says that race does not lead to dramatic skews in top and bottom labels. Moreover, we found no evidence that racial preference played a role in any indirect relationship leading to sexual position self-identity. Much more research is warranted on the interaction of race and sexual behavior, which may help solve many of the sexual health disparities experienced by minorities.

## Limitations

This study was not without several notable limitations. Our research relied on path analysis to look at the direct and indirect relationships between variables and sexual position self-label. When describing the relationships and the findings, we used causal language. However, the use of a cross-sectional design limits the certainty regarding the causal direction of variables. For example as noted in the case of sexual anxiety when bottoming and the bottoming as pleasurable variables, a reversible hypothesis could be argued. Although it seems unlikely that experimental methods can be used to investigate the issues we studied, longitudinal designs can provide better insight into causality. In addition, path analysis usually requires a theory to be tested. No theory existed regarding sexual position self-label. Consequently, we used the variables offered by extant studies to fashion a hypothetical model with direct and indirect paths. A more complete theory (similar to the lifespan model of sexual orientation; D'Augelli, 1994) should be developed which identifies the underlying milestones and socialization processes that drive our sexual position self-label model. Moreover, we could not retroactively include measures that might assess and explain the relationships projected by our model (e.g., erectile dysfunction).

We had concerns about the measures as well—in particular, the validity of self-reported penis volume/size and the construction of one of the attitudinal constructs. The average penis length of the sample was 6.61 inches, as noted below Table 3. This is about an inch larger than most estimates of the average penis length, which might be an indicator of exaggerated responses. Additionally, we had originally planned the strength/control of partner variable to be two separate constructs. During data cleaning, an exploratory factor analysis suggested that the eight items measured fit better together rather than separately. Keeping the items together also raised the reliability to acceptable levels. While this may be concerning with respect to reliability, we believe the increased number

of items make it a more valid measure. Lastly, we were limited by our sampling technique. Any study that uses the Internet to solicit participants runs the risk of inviting systematic sampling biases into the data. To combat this likelihood, a large sample was collected. No repeat IP addresses were found as well.

### Future Directions

These limitations aside, our study expands on what is known regarding the recognition and development of the sexual position self-identity. This work hoped to establish at what point gay or bisexual men become bottoms, versatiles, or tops, and the direct and indirect variables that contribute to the decision. Admittedly, one of the limitations of our research was our being bound by existing variables. Future research should identify new variables that might contribute to the creation and maintenance of a sexual position self-label. These might include erectile function, desire for drugs that might increase or decrease erectile function, the importance of semen/fetishizing semen during sex, sexual compulsivity and adventurism, and fecal matter sensitivity and repulsion.

Contributions to the "in-reality" sexual position self-label were not addressed in our study. It may be constructed from different variables that better account for sociosexual interaction. For example, the role of the romantic relationships on the top, bottom, or versatile "in-reality" label is still greatly unknown. In our sample, we had over 50 % involved in same-sex relationships. The dependent variable was the preference for topping (measured as the ideal sexual position self-label). The question specifically asked participants to think about their label in a sexual vacuum, independent of partners, so we effectively controlled for relationship partners. Yet, the addition of a monogamous or nonmonogamous emotionally connected, romantic partner might impact how the sexual position self-label is enacted on a day-to-day basis. Do complementary sexual position self-labels (i.e., tops with bottoms, versatiles with other versatiles) produce more satisfying relationships? Do incompatible sexual position self-labels (i.e., two tops together, two bottoms together) lead to diminished sexual contact within the relationship and exaggerated sexual contact outside of it? Alternatively, are "incompatible" self-labels a misnomer because such couples may not have an elevated interest (or any interest) in anal sex? A follow-up study that explores the "in-reality" label in more detail is warranted.

A final area for future research concerns establishing a better understanding of how the sexual position self-label develops during adolescence and young adulthood. The results showed that younger men reported knowing their label prior to engaging in anal sex. We speculated why that may have occurred but did not have the data to claim certainty. Qualitative research might substantiate this phenomenon by asking young men how they knew about their sexual position self-label and how they felt when they finally engaged in anal intercourse. There may be marked generational differences in how men construct and recognize their self-labels. Social maturation, increased societal acceptance, and men's tendencies to come-out at earlier ages might directly or indirectly reduce the age of recognition. Alternatively, the increased degree of social connectivity and Internet-based, sociosexual networking sites might increase partner availability and quicken the ordinary progression towards same-sex encounters by young gay and bisexual men. These are all possibilities that might be investigated through future studies.

In the final analysis, we believe our current study provides several important contributions to the basic understanding of the sexual position self-label. First, only 8 men out of the initial sample (3 %) failed to assign themselves an ideal sexual position label. This emphasizes the extreme degree to which such labels are adopted. Evidence also was shown to suggest the recognition of one's label to generally come through sociosexual learning. Our data dispelled the direct impact of penis size on the development of the label. The path model substantiated the reliance bottoms and tops show towards expecting (or not expecting among tops) gender typical, sexually dominant partners. It also supported previous evidence regarding race and same-sex sexual encounters; specifically, while race may activate differences in sexual behavioral dynamics, it is not a great predictor of the sexual position self-label. Finally, our study expanded what is known about why gay and bisexual men might or might not derive pleasure from anal penetration. Even though we found all of these trends, there is still much more to be known. We are confident that future studies will build upon our foundation to discover important insights.

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**Compliance with Ethical Standards**

**Conflict of Interest** David A. Moskowitz and Michael E. Roloff declare that they have no conflict of interest.

**Ethical approval** All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

**Informed consent** A waiver of informed consent was granted by the institutional review board at the New York Medical College.

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