

Do Associations Between Pleasure Ratings for Penile-Vaginal Sex and Condom Use Vary by Relationship Type: A Study of Canadian University Students

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Acknowledgements: The survey reported on in this article was commissioned by the Trojan Sexual Health Division of Church & Dwight Canada in collaboration with the Sex Information and Education Council of Canada (SIECCAN).

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Keywords: condom use, pleasure, relationship commitment, gender, university students

Abstract

Research suggests that the relationship between pleasure and condom use during penile vaginal intercourse (PVI) is associated with relationship status. This online study examined pleasure ratings and condom use at last PVI, stratifying by partner type, among a national sample of Canadian university students. Participants were 715 undergraduates (60.7% women, 39.3% men) who reported on their most recent sexual experience. Condom use decreased with level of relationship commitment, whereas ratings of pleasure increased. Overall, participants were more likely to rate their most recent PVI as “very pleasurable” when condoms were not used compared to when condoms were used. However, when stratified by partner type, these differences largely disappeared. For women, with one exception, there were no differences in pleasure between PVI with and without condoms across most partner type categories. Women in committed dating relationships were more likely to report their last PVI as very pleasurable if condoms were not used than women in these same relationships who had used condoms. Across relationship categories, men who did and did not use condoms did not differ in terms of their pleasure ratings. The results of this study suggest relationship context should be taken into account when assessing condom use experiences.

INTRODUCTION

Research examining the impact of condom use on sexual pleasure has yielded conflicting results. Many individuals perceive that using condoms will decrease sexual pleasure (Adams, Husbands, Murray, & Maxwell, 2005; Flood, 2003; Khan, Hudson-Rodd, Saggars, Bhuiyan, & Bhuiya, 2004). A study by the Joint United Nations Programme on HIV/AIDS (2000) identified the perception that condoms reduce sexual pleasure as the most common reason that men, across 14 countries, reported for not using condoms. Crosby, Milhausen, Yarber, Sanders, and Graham (2008) explored the prevalence of 15 possible condom turn offs among people who reported that condoms had turned them off the last time that they had used them and found that decreased sensation was the most common turn-off. Approximately one-third of men and women reported that condoms interfered with their own or their partners' orgasm and/or made it difficult for them or their partners to "respond physically." In a small study of U.S. college students, both men and women indicated a belief that penile-vaginal intercourse (PVI) without a condom is more pleasurable than with a condom (Randolph, Pinkerton, Bogart, Cecil, & Abramson, 2007).

Attitudes about condoms and pleasure are important because they can impact condom use behaviour. In the above study by Randolph et al. (2007), the perceived pleasure experienced during unprotected and condom protected PVI predicted condom use behaviors over the past three months (though to a greater degree for men than women). In a recent nationally representative U.S. sample of 2,328 15-24 year olds, strong relationships were found between condom-related pleasure attitudes and lack of condom use over the past month (Higgins & Wang, 2015).

Relationship factors also significantly impact condom use. Positive relationship attributes such as perceptions of trust and safety (Bolton, McKay, & Schneider, 2010; Ryan et

al., 2009), and familiarity and love (Ostergren, Rosser, & Horvath, 2011), are associated with non-condom use. These findings have been demonstrated across age categories, gender, and sexual orientation (Adams et al., 2005; Bauman, Karasz, & Hamilton, 2007; Ostergren et al., 2011; Ryan et al., 2009; Sayegh et al., 2006). There is consistent evidence that condom use decreases with relationship duration (Fortenberry et al., 2002) and when relationships become more committed couples often switch to hormonal contraception (Bolton, McKay, & Schneider, 2010; Sayegh et al., 2006).

Research has also found a relationship between levels of partner commitment and enjoyment of sexual activity. Galinsky and Sonenstein (2013), examining data from a U.S. sample of 2,970 18 to 26 year-olds, found that although formal relationship status (i.e., married, cohabitating, dating) was not associated with sexual enjoyment, subjective relationship commitment (i.e., feeling committed, feeling close to the partner) was related to a higher frequency of orgasm and greater degree of liking oral sex.

Relationship context has been found to influence condom use, with condom use more common in casual relationships and less common in more committed ones (Adams et al., 2005; Bauman, Karasz, & Hamilton, 2007; Fortenberry et al., 2002; Ostergren et al., 2011; Sanders et al., 2010; Sayegh et al., 2006). Relationship type has also been shown to covary with pleasure experienced during sex, with more pleasure reported in more intimate relationships (Galinsky & Sonenstein, 2013; Waite and Joyner, 2001). As such, partner type may act as a confounding variable in studies assessing pleasure at last condom-protected PVI. The plausibility of such a confound is consistent with Sanders et al.'s. (2010) finding that after controlling for relationship type, ratings, orgasm and arousal were evaluated similarly whether participants used a condom or not. Yet, few studies have assessed the role of perceptions about the effects of condom use on

pleasure in predicting condom use, stratified by relationship type. One exception is de Visser and Smith (2001) who found, in a sample of 103 Australian heterosexual men and women, that among people with regular partners, but not those with casual partners, the belief that condoms reduce sexual pleasure was associated with condom non-use.

Previous research on condoms and pleasure has assessed *attitudes* about how pleasure is affected by condom use or elicited respondent *perceptions* of how condom use affects pleasure – few studies have examined actual *experiences* of pleasure during PVI with and without condoms and compared pleasure ratings for individuals with different partner types. Sanders et al. (2010) did use this latter methodology; in a U.S. national survey of men and women ages 18 to 94 years they reported no significant differences in pleasure, arousal, and orgasm related to condom use or non-use for the most recent event of PVI, when controlling for partner/relationship type, age, and ethnicity. However, Sanders et al. did not examine the relationship between condom use and pleasure within each relationship type separately. Given the relationship between partner type and pleasure (Galinsky & Sonenstein, 2013; Waite and Joyner, 2001), with reports of pleasure increasing with relational intimacy, partner type may serve as a confound in investigations of condom use and pleasure. Thus, research on reports of condom use and sexual pleasure, stratified by partner type and conducted separately by gender, would make an important contribution to the literature.

Aims of the Current Study

The purpose of the current study was to investigate levels of pleasure at last PVI by condom use and non-use, stratified by partner type. Of particular note is that, unlike other studies, the current study did not ask participants to give their opinion on the degree to which condom use affects sexual pleasure or measure how the perceived impact of condom use on

pleasure affects the likelihood that they would use condoms. Rather, similar to Sanders et al. (2010), the current study asked respondents to identify how pleasurable their most recent experience of PVI was and, in a separate item, asked if a condom was used. Thus, in comparison to many previous studies, the current study provides a more direct, and likely more accurate, assessment of if, and the degree to which, condom use affects pleasure experienced during PVI.

To address condom use behavior and differences in reported pleasure we asked the following research questions:

1. What is the percentage of participants who report using a condom at last PVI?
2. Is there a significant difference in reported pleasure between participants who used a condom at last PVI compared to those who did not use a condom?
3. Is the reported pleasure at last PVI different depending upon the relationship context?
4. For each relationship type (e.g., booty call, casual, committed dating partner, married etc.), is reported pleasure at last PVI different depending on whether or not a condom was used?
5. Are these patterns similar for women and men?

METHOD

Participants

The study was designed by the second author in partnership with [blinded for review] to better understand the sexual health needs of young adult Canadians. Participants were recruited by [blinded for review] and [blinded for review]. The aim was to recruit 1,500 participants (approximately half male and half female) between the ages of 18 and 24 who were currently enrolled in a Canadian university with representation from all provinces and territories. Data were collected over a two week period between December 2012 and January 2013. A total of

53,631 email invitations to participate in a “general interest survey” were sent to panelists between the ages of 18 and 24. Of these, 3611 respondents clicked on the survey link that led to the study portal. Approximately one-third ($N = 1244$) were disqualified, 1194 because they were not currently enrolled university students, 46 because they did not fit the age range, and 4 indicated they would not respond to the survey truthfully. A further 648 were disqualified because quotas for gender, province of study, and age had been met. In addition, 219 did not complete the survey in full and their data were not retained by [blinded for review]; data on these participants is not available. The overall sample comprised 1,500 Canadian university students between the ages of 18 and 24 who met all eligibility criteria and provided complete data.

To be included in the analytic sample participants had to meet the following criteria: 1) indicated that they had a sexual encounter within the last year that included PVI, 2) answered the questions related to condom use at last PVI, relationship type, and degree of pleasure at last PVI as these were the central variables of interest for the current analysis and 3) identify as female or male as analyses were conducted by gender and though the survey included a trans identity response it did not specify female-to-male or male-to-female. Three hundred and seventy-two participants indicated they had never had a sexual encounter. A further 58 reported their last sexual encounter happened more than one year ago and 115 participants chose not to answer the question about when their last sexual encounter occurred. Another 184 indicated their last sexual encounter did not include PVI, and 23 did not answer this question; these participants were excluded. This left 748 who indicated that their last sexual encounter included PVI. Thirty-two people who did not respond to the items about condom use during last PVI, degree of pleasure at last PVI, or partner type were also excluded. One participant who identified as transgender was also removed. In total, 170 participants were excluded because they did not answer one of the

key variables needed for the study analyses and 615 were excluded because they did not meet the eligibility criteria. The final analytic sample for this study was 715 (281 men and 434 women) individuals with a mean age 21.10 ($SD = .76$).

Although all provinces and the Northwest Territories were represented in the analytic sample, most participants were living in Ontario (41.0%, $n = 293$), Quebec (25.3%, $n = 181$), British Columbia (10.5%, $n = 75$), and Alberta (8.4%, $n = 60$). The majority (83.1%, $n = 594$) were completing their Bachelor's degrees, and most were in the first (27.1%, $n = 194$), second (28.7%, $n = 205$), or third (22.5%, $n = 161$) year of their program. Almost one-half of participants indicated that they were in committed dating relationships (45.0%, $n = 322$), approximately one-quarter reported that they were not dating anyone (23.5%, $n = 168$), and 15.9% ($n = 114$) that they were casually dating. A minority of participants were living together (10.9%, $n = 78$) or engaged or married (4.3%, $n = 31$); two individuals were separated or chose not to answer the question. The majority of participants reported they were heterosexual (97.9% of men, $n = 275$; 94.7% of women, $n = 411$). One man indicated he was gay (.4%), four that they were bisexual (1.4%), and one selected the "other" option (.4%). Twenty-one women reported that they were bisexual (4.8%) and two selected an "other" (.5%) orientation.

Measures

The [blinded for review] *Study* comprised 69 items related to the sexual health of university students. A subset of the survey items were utilized in the current study.

Demographic and sexual history questions. The questionnaire began with a number of items assessing demographic variables, including gender, age, relationship status, university status (degree program and year), province/territory of residence and country of origin.

Data cleaning items. Items about the recency of most recent sexual encounter and occurrence of PVI at most recent sexual encounter were used to reduce the sample to only individuals who reported that their most recent sexual encounter included PVI and that this encounter occurred within the past year. Specifically, the items were: 1) “When was your most recent sexual encounter?” Response choices were: less than 24 hours ago, less than a week ago, less than a month ago, less than three months ago, less than six months ago, less than a year ago, a year ago or longer, not applicable – I have never had a sexual encounter, I don't know/prefer not to answer. 2) “In your most recent sexual encounter, did you and this partner engage in penis-vagina intercourse?” Response choices were: yes, no, and I prefer not to answer. Answering ‘yes’ to this question triggered a series of questions about condom use and pleasure experienced during PVI.

Three items formed the basis of the primary analysis:

Condom Use. Participants who indicated that their last encounter included PVI were asked, “Did you use a condom for penis-vagina intercourse?” Response choices were: yes, no, and prefer not to answer.

Pleasure ratings for PVI. Immediately following the question about whether or not PVI occurred in the last sexual encounter, participants were asked “How pleasurable was it for you?” Only participants who indicated that they had PVI during their last encounter received this question. Response choices were: not at all pleasurable, not very pleasurable, somewhat pleasurable, very pleasurable, I don’t know/prefer not to answer. Responses were recoded to contrast “Very pleasurable” with all other response choices.

Partner type at last sexual encounter. Participants described the relationship with the person at their last sexual encounter in response to the following question: “Which of the

following best describes the relationship you had with this person?” Response options were: 1) one time sexual encounter (i.e., hookup/one night stand), 2) sexual partner with whom you are friends with but not committed (i.e., friends with benefits), 3) sexual partner with whom you occasionally meet for sex but for no other purpose (i.e., booty call), 4) dating but not committed, 5) committed dating, 6) living together in a monogamous relationship, 7) engaged, 8) married, 9) other, and 10) I don’t know/prefer not to answer. For the purposes of analyses this variable was recoded into four categories, taking into account level of emotional intimacy: “one time sexual encounter + booty call” (comprised of options 1 and 3), “friends with benefits (FWB)+ dating not committed” (comprised of options 2 and 4), “committed dating partners” (option 5), and “cohabitating/engaged/married partners” (comprised of options 6 through 8). Individuals who indicated “other” or didn’t answer the question were not included in the analyses.

Procedure

Panelists were invited to participate via email containing a link to the survey from [blinded for review] and a single email reminder was sent to those who did not respond to the initial message. Survey responses were transmitted over a secure, encrypted SSL connection and stored on a secure server. Participants received \$1 for completing the questionnaire, and the opportunity to enter into a monthly draw for \$1,000, \$100, and an iPod touch. Approval for secondary data analysis was received from the Research Ethics Board at [blinded for reviews].

Analysis

Descriptive statistics were computed for demographic variables such as age, province/territory of residence and university status, as well as items related to condom use and pleasure at last PVI. Item-level comparisons of dichotomized variables were conducted using Chi-square analyses, separately for men and women. Because pleasure ratings were not normally

distributed, the Mann-Whitney test was used to compare ratings of pleasure at last PVI as a continuous measure when condoms were used and not used; this analysis was also stratified by partner type and conducted separately by gender. Finally, logistic regression models were constructed as a means of calculating the odds ratios, their 95% confidence intervals, and respective *P*-values for the associations between pleasurable sex and condom use within each category of relationship type. Pleasure at last vaginal sex was dichotomized to contrast those indicating the PVI was “very pleasurable” against all other responses. Because almost all participants indicated that their last experience of PVI was at least “somewhat pleasurable” a higher cutoff was needed to make meaningful predictions. This process is justified under the circumstances of pronounced skewness, and fully warranted when the research question is one that compares groups rather than one that is centered on the discovery of individual differences (Iacobucci, Posavac, Kardes, Schneider, & Popovich, 2015). All data were analyzed using SPSS v. 22 (IBM Corp, 2013).

RESULTS

Most participants (88%) reported on a sexual encounter that occurred within the past 3 months (18 reported that their most recent encounter was between 6 months and 1 year prior and 33 reported that their most recent partner was between 3 and 6 months prior). More men (58.4%) than women (45.9%) reported using a condom at last PVI ($\chi^2 (1) = 10.681, p < .001$). However, condom use was more common in less intimate/committed relationships, and less common in more intimate/committed relationships (Figure 1).

More men (69.0%) than women (49.8%) reported that their last PVI was very pleasurable ($\chi^2 (1) = 25.892, p < .001$). For both men and women pleasure at last PVI increased in a linear

fashion by relationship type ranging from least intimate/committed to most intimate/committed (Figure 2). The lowest proportion of participants who indicated their last PVI was very pleasurable were those who reported their partner was a one-time encounter or a booty call. Specifically, 34.8% of participants (24.5% of women, 43.5% of men) whose last partner was a one-time encounter or booty call rated their last PVI as very pleasurable, compared to 60.5% of those who reported other types of partners ($\chi^2 (1) = 21.059, p < .001$). The highest proportion of participants who indicated that their last vaginal sex was very pleasurable were those who were cohabitating, engaged, or married (67.8% (61.9% of women, 81.1% of men) compared to 55.2% of those who reported other types of relationships ($\chi^2 (1) = 6.472, p = .011$).

When not distinguishing by partner type, the patterns of associations for condom use and pleasure were somewhat different for men and women. Women whose last PVI was condom protected were significantly less likely to rate it as very pleasurable, compared to women who did not use a condom (41.2% vs. 57.0% ($\chi^2 (1) = 10.781, p = .001$). Among men there was only a trend toward significance; 64.6% who reported using a condom at last PVI reported that the encounter was very pleasurable, compared with 75.2% of men who reported not using a condom ($\chi^2 (1) = 3.576, p = .059$).

Given that condom use and pleasure covaried with partner type (see Figures 1 and 2), analyses were conducted stratified by partner type and separately by gender using the Mann-Whitney U test. For women, with one exception, there were no differences in pleasure between PVI with and without condoms across most partner type categories (One time sexual encounter/booty call: Mann-Whitney $U = 94, p = .201$; Friends with benefits/Dating not

committed: $U = 742, p = .221$; Living together, engaged, or married: $U = 760, p = .791$).

However, women in committed dating relationships were more likely to say that their last PVI was very pleasurable when condoms were not used than when condoms were used ($U = 4943, p = .020$). The committed dating relationship was also the largest category of partner type, suggesting that this significant difference was driving the overall difference found for women. There was no significant difference in men's pleasure ratings for sexual encounters with and without condoms across partner type categories (one time sexual encounter/booty call: $U = 199, p = .889$; friends with benefits/dating not committed: $U = 412, p = .243$; committed dating: $U = 2104, p = .805$; living together, engaged, or married: $U = 137, p = .326$).

Simple logistic regression models were constructed in order to calculate odds ratios, their 95% confidence intervals, and respective p -values for the associations between pleasurable sex and condom use within each category of relationship type. When analysis was conducted with only those participants who reported that the sexual encounter occurred within the past 3 months, the pattern of findings remained the same; thus the larger sample was retained for all analyses. Findings from these analyses were consistent with findings using the Mann-Whitney U. The proportion of men reporting their last PVI was very pleasurable based on whether condoms were used or not used did not differ by relationship type (Table 1). As shown in the last three columns of Table 1, the obtained odds ratios were relatively small in magnitude, with the exception of the value of .27 obtained for 44 men who were living with their partner, engaged, or married. Though this OR was not significant, low power as a result of small cell sizes (only seven of these men reported that their last PVI was less than very pleasurable, regardless of condom use) created a bias towards the null hypothesis.

Similar to findings based on the Mann-Whitney U test, the proportion of women reporting that their last PVI was very pleasurable based on whether condoms were used or not used did not differ by relationship type, with the exception of one relationship category (Table 2). The odds ratio for women in committed dating relationships was significant, ($OR = .56, p = .04$) indicating that women in committed dating relationships who used a condom at last sex were proportionally less likely to indicate this PVI was very pleasurable compared to women in committed dating relationships who did not use a condom. As shown in the last three columns of Table 2, the obtained odds ratios were relatively small in magnitude with the exception of the OR for one time sexual encounter/booty call ($OR = .38$). Findings related to this category are also likely biased toward the null because of the small number of women who reported that their last partner was a one time sexual encounter or a booty call ($N = 43$); only 11 of these women indicating that their last PVI was very pleasurable.

DISCUSSION

The current study investigated whether pleasure at last PVI differed by condom use or non-use, stratifying by partner type, among a sample of Canadian university students. When the data for the total sample were examined in aggregate, participants were more likely to rate their most recent PVI as very pleasurable if condoms were not used. However, when stratified by partner relationship category, differences in pleasure ratings among participants who did and did not use condoms were no longer significant for most groups. Among men, after stratifying by partner type, there were no significant differences in the percentage of men who rated their last PVI as very pleasurable for those who used condoms versus those who did not, for any partner type category. Among women, after stratifying for partner type, differences in pleasure ratings for women also disappeared with one exception: women in the committed dating category were

more likely to rate their most recent PVI as very pleasurable if they did not use a condom. There was also a striking relationship between level of relationship commitment and pleasure such that the highest pleasure ratings were reported in the most committed relationships and the lowest pleasure in the most casual relationships. Given that condom use also co-varies with relationship type, these findings underscore the importance of considering relationship context in attempting to understand factors that may influence condom use and non-use. Without conducting this partner type analysis, it can appear that the use of condoms is generally associated with reduced pleasure when in fact this may only be true within particular relationship contexts. In their national study of U.S. adults, Sanders et al. (2010) found that relationship type was associated with condom use at last PVI, and controlled for this in their analyses related to sexual pleasure. Upon doing so, condom use/non-use was not associated with pleasure, arousal, or orgasm for the participant, or their partner, among either men or women.

Women in committed dating relationships in the current analysis were more likely to rate their last PVI as very pleasurable if they did *not* use condoms, in comparison to women in this relationship category who did use condoms. Women in these types of relationships may have internalized beliefs that condoms are associated with risky partners, whereas non-condom use signifies love and trust (Marston & King, 2006). Lower rates of condom use with serious partners are associated with higher levels of perceived love, trust, and intimacy (Brady, Tschann, Ellen, & Flores, 2009; Corbett, Dickson-Gomez, Hilario, & Weeks, 2009; Marston & King, 2006). Women in this ‘middle’ stage of relationship commitment (not casual, but not formally committed via cohabitation or marriage) may perceive condom use as a sign that their relationships are not as intimate as they would like. Indeed, conceptualizations of committed relationships as intimate, trusting, and generally monogamous create difficulties around

communicating about condoms and safer sex without bringing to mind infidelity and mistrust (Emmers-Sommer & Allen, 2005). Previous research indicates that increased comfort discussing condom use is related to greater reported condom use (Widman, Noar, Choukas-Bradley, & Francis, 2014). It may be particularly difficult to discuss condom use, and the implications and meanings of condom use, in the “committed dating” category – an ‘in-between’ category between casual relationships where condom use might be part of the sexual script, and secure, committed relationships (i.e., engaged/married) where communication patterns are more established.

Consistent with previous research, among both men and women, condoms were used more often with casual partners as compared to more committed ones (Bauman & Berman, 2005; Fortenberry et al., 2002; Hock-Long et al., 2013; Lescano, et al., 2006; Sanders et al., 2010). This may be due, in large part, to the beliefs that committed partners are less inherently risky than casual ones (de Visser & Smith, 2001; Hock-Long et al., 2013; Lescano et al., 2006). This belief is a fallacy because committed partners may carry a sexually transmitted infection (STI) from a past relationship, or engage in extra-dyadic sex (Sanders et al., 2010). It is also possible that young adults in the current sample used condoms more often with casual partners compared to more committed ones because casual partners were seen as less familiar than a committed partner (i.e., the individual may not know if their casual sex partner has been tested for STIs). Past research indicates that being unfamiliar with partners is associated with a higher incidence of STIs (Laumann, Gagnon, Michael & Michaels, 1994).

Also of note were gender differences in experience of pleasure overall. Men were more likely than women to rate their last PVI as very pleasurable. Other research has documented gender differences in experiences of sexual pleasure and satisfaction (Galinsky & Sonenstein,

2011; Haavio-Mannila & Kontula, 1997). For example, men aged 18 to 26 from wave III of the National Longitudinal Study of Adolescent Health (Add Health) were more likely than women to report experiencing orgasm most or all of the time (87% compared to 47%). Young women may have difficulties communicating about their sexual desires and preferences, and therefore may engage in unsatisfying sexual activities (Galinsky & Sonenstein, 2011; Impett & Peplau, 2003; Tolman, 2002). Galinsky and Sonenstein (2011) found that autonomy and self-esteem were associated with three measures of sexual enjoyment in women (compared with one in men). Thus, providing opportunities for young women, in particular, to develop sexual confidence and communication, may facilitate experiences of sexual pleasure for women (Haavio-Mannila & Kontula, 1997).

Compounding gender differences in experiences of pleasure is the influence of partner type. Women in casual relationships were the least likely to report their last PVI was very pleasurable. Pleasure for women increased incrementally with relationship commitment, though still falling below men's in each relationship group; however, men's pleasure also increased with relationship commitment. Mah and Binik (2001) posited that individuals who perceive their relationships to be committed may be less inhibited and anxious, and more likely to communicate successfully, facilitating greater sexual pleasure. Waite and Joyner (2001) described "relationship-specific capital" (p. 249) in which couples with greater relationship commitment have more incentive to develop learned skills, including sexual ones, which benefit a primary relationship. They also predicted that an "extended time horizon" (expecting a relationship to last a long time, an indicator of commitment) would impact women's sexual satisfaction more than men's (p. 250). Indeed, women who expected their relationships to end soon had about one-tenth the odds that married women did of reporting emotional satisfaction

with their sexual life. Married women and single women who expected their relationships to last a lifetime were more likely than women in any other relationship type to report emotional satisfaction with sexual life; the same relationship was not true for men. Only single men who expected their relationships to end in less than a year were less satisfied than married men.

Surprisingly, the current findings related to pleasure and relationship context contrast with many of Galinsky and Sonenstein's (2013) findings, despite a similar sample demographic (18 to 26 year olds). These authors found that dating and cohabitating participants were *not* significantly different from married ones in terms of sexual enjoyment, with the exception of one contrast comparing liking of vaginal sex among married and dating men. However, the authors noted that their results diverged from past research in this area, attributing this to their measures of sexual enjoyment and sample characteristics. Galinsky and Sonenstein used Add Health survey data in which sexual enjoyment was operationalized as orgasm frequency, liking receiving sexual stimulation from one's partner, liking providing sexual stimulation to one's partner, and liking vaginal and oral sex with current partner. Using orgasm frequency as an index of sexual enjoyment may be problematic, as research indicates that many women report sexual enjoyment in the absence of orgasm (Nicholson & Burr, 2003). Additionally, the items in Galinsky and Sonenstein's study referred to overall enjoyment among individuals in relationships lasting at least three months. This is in contrast to the event level measures used in the current study. Further, individuals in the first two partner type categories in our study ("one time sexual encounter + booty call" and "friends with benefits (FWB)+ dating not committed") would have likely been excluded from Galinsky and Sonenstein's sample based on the three month relationship eligibility requirement. Interestingly, *subjective relationship commitment* (in contrast to the null findings related to relationship *type*) was associated with four indicators of

sexual enjoyment among the 18 to 26 Add Health participants (Galinsky & Sonenstein, 2013). Emerging adults in Galinsky and Sonenstein (2013) who *perceived themselves* to be in more committed relationships enjoyed their sexual activities more, on average, than those who perceived themselves to be in less committed relationships.

This is the first study to investigate ratings of pleasure when condoms were used and not used at last PVI, stratified by partner type, in a national sample of Canadian university students. Stratifying by partner type makes a critical contribution, as doing so, suggests that condom use within most relationship contexts is not associated with less pleasurable PVI. These findings also support past research indicating that pleasure at PVI increases with level of relationship commitment (Waite & Joyner, 2001), while condom use concomitantly decreases (Fortenberry et al., 2002). This is also one of the few studies, along with Sanders et al. (2010), to examine sexual pleasure and condom use at the event level. This type of analysis allows for more precise evaluation of associations between condom use and situational and experiential variables specific to that event. Further, condom use at last PVI has been shown to be a valid proxy for condom use over longer periods of time (Younge et al., 2008). The methodology used in our study, however, differed from that of Sanders et al. (2010) who included relationship type as a covariate in the analyses on condom use and pleasure. In contrast, our study explicitly examined relationships between condom use and pleasure for each relationship type separately.

Several limitations are noteworthy. Notably, the small numbers of men ($n = 44$) who were in committed relationships created a bias toward the null as a consequence of inadequate statistical power. This same observation applies to the small number of women ($n = 43$) in the category of “one night stand.” Findings are limited to the degree that recalling sexual behaviours over the past year may be inaccurate. However, analyses were conducted with a reduced sample

of only participants who reported on encounters over the past three months and the pattern of results was the same. The results cannot be generalized beyond a Canadian university student sample, and because of the relatively brief nature of the survey, validated scales were not utilized. Further, 6.7% of individuals who received the recruitment email clicked on the link to access the survey, and approximately one-third of these were disqualified because they had not met the eligibility criteria or because quotas had been met. Though this click-through rate is common for large scale marketing research (Leger Marketing, personal communication), these issues may raise some concerns about sampling bias and generalizability of findings. A further limitation involves the necessary decision to dichotomize the continuous distributions pertaining to pleasure at last vaginal sex. The primary sacrifice made when using this method involves a greater risk of Type II error, thus it is possible that the lack of significance for the sub-group analyses may be partly attributable to the use of dichotomized variables. Nonetheless, results from this study can be used to buttress interventions seeking to increase condom use, providing further support for the idea that condom use does not negate pleasure (Sanders et al., 2010).

These findings underscore the importance of attending to the relationship factors that impact condom use motivations and behaviours (Hock-Long et al., 2013). Current and past research demonstrates that condom use, and condom use experience, is best explained in the context of the sexual interaction (Hock-Long et al., 2013; Lescano et al., 2006). Further, being in a committed relationship does not in and of itself protect against the spread of STIs (e.g., partners may be having extra-dyadic sex, or one or both partners had an STI when the relationship began), and so individuals who are in these types of relationships should not be neglected in public health endeavors. Indeed, individuals in relationships characterized by love and trust are the *least* likely to use condoms (Adams et al., 2005; Bauman, Karasz, & Hamilton,

2007; Ostergren et al., 2011; Ryan et al., 2009; Sayegh et al., 2006). Finally, pleasure as an outcome should be given more attention by researchers who study condom use (Graham, 2012). Despite widespread agreement in sexuality education and policy (Public Health Agency of Canada, 2008) that sexual health is more than the absence of disease, violence, or other problems, positive aspects of sexuality are understudied in the literature (Galinsky & Sonenstein, 2013). This study contributes to the body of knowledge connecting sexual health and pleasure, and underscores that health protective activities do not necessarily contravene pleasure.

For men, once participants were stratified by partner type, differences in reported pleasure during PVI (with and without a condom) largely disappeared. Given that men in particular are less likely to use condoms due to the perception that they decrease pleasure (Randolph et al., 2007), the results of the current research can be used to inform condom use interventions aimed at young men. The finding of the current study that young adult women in committed dating relationships are less likely than women in less committed relationships (e.g., dating but not committed) or women in more committed relationships (e.g., living together, engaged, married) to rate PVI with condoms as very pleasurable should also inform sexual health education programs. Research indicates that some individuals employ non-use of condoms as a way to maintain an intimate relationship, despite the knowledge that it increases their health risk (Corbett, Dickson-Gomez, Hilario, & Weeks, 2009). Often there is the assumption that known partners are “safer” or that not using a condom is a symbol of increased trust. However, if partners have not recently been tested and/or discussed their STI status, this is an inaccurate assumption. The correct use of condoms remains one of the most effective means for reducing STIs (Alfonsi & Shlay, 2005; Gallo et al., 2007). Sexual health education programs should seek to address the role that condoms may play in detracting from feelings of intimacy and

relationship enhancement among young women, particularly those in committed dating relationships, and examine ways that partners can build trust and communication skills that allow them to safely negotiate safer sex behaviours within their relationship.

REFERENCES

- Adams, B. D., Husbands, W., Murray, J., & Maxwell, J. (2005). AIDS optimism, condom fatigue, or self-esteem? Explaining unsafe sex among gay and bisexual men. *Journal of Sex Research, 42*, 238-248. doi:10.1080/00224490509552278
- Alfonsi, G. A., & Shlay, J. (2005). The effectiveness of condoms for the prevention of sexually transmitted diseases. *Current Women's Health Reviews, 1*, 151-159.
- Bauman, L. J., Karasz, A., & Hamilton, A. (2007). Understanding failure of condom use intention among adolescents: Completing an intensive prevention intervention. *Journal of Adolescent Research, 22*, 248–274. doi: 10.1177/0743558407299696
- Bauman, L. J., & Berman, R. (2005). Adolescent relationships and condom use: trust, love and commitment. *AIDS and Behavior, 9*, 211–222.
- Bolton, M., McKay, A. & Schneider, M. (2010). Relational influences on condom use discontinuation: A qualitative study of young adult women in dating relationships. *The Canadian Journal of Human Sexuality, 19*, 91-104.
- Brady, S. S., Tschann, J. M., Ellen, J. M., & Flores E. (2009). Infidelity, trust, and condom use among Latino youth in dating relationships. *Sexually Transmitted Diseases, 36*, 227–231. doi: 10.1097/OLQ.0b013e3181901cba
- Corbett, A. M., Dickson-Gomez, J., Hilario, H., & Weeks, M. R. (2009). A little thing called love: condom use in high-risk primary heterosexual relationships. *Perspectives on Sexual and Reproductive Health, 41*, 218–224.
- Crosby, R. A., Milhausen, R., Yarber, W. L., Sanders, S. A., & Graham, C. A. (2008). Condom 'turn offs' among adults: an exploratory study. *International Journal of STD & AIDS, 19*, 590-594. doi: 10.1258/ijsa.2008.008120.

- De Visser, R., & Smith, A. (2001). Relationship between sexual partners influences rates and correlates of condom use. *AIDS Education and Prevention, 13*, 413-427. doi: 10.1521/aeap.13.5.413.24146
- Emmers-Sommer, T. M. & Allen, M. (2005). *Safer sex in personal relationships: The role of sexual scripts in HIV infection and prevention*. Mahwah, NJ: Lawrence Erlbaum Associates, Publishers.
- Flood, M. (2003). Lust, trust and latex: Why young heterosexual men do not use condoms. *Culture Health & Sexuality, 5*(4), 353–369. doi: 10.1080/1369105011000028273
- Fortenberry, J. D., Tu, W., Harezlak, J., Katz, B. P., & Orr, D. P. (2002). Condom use as a function of time in new and established adolescent sexual relationships. *American Journal of Public Health, 92*, 211-213. doi: 10.2105/AJPH.92.2.211
- Galinsky, A. M. & Sonenstein, F. L. (2011). The association between developmental assets and sexual enjoyment among emerging adults. *Journal of Adolescent Health, 48*, 610-615. doi: 10.1016/j.jadohealth.2010.09.008
- Galinsky, A. M. & Sonenstein, F. L. (2013). Relationship commitment, perceived equity, and sexual enjoyment among young adults in the United States. *Archives of Sexual Behavior, 42*, 93-104. doi: 10.1007/s10508-012-0003-y.
- Gallo, M. F., Steiner, M. J., Warner, L., Hylton-Kong, T., Figueroa, J. P., Hobbs, M. M., & Behets, F. M. (2007). Self-reported condom use is associated with reduced risk of chlamydia, gonorrhea, and trichomoniasis. *Sexually Transmitted Diseases, 34*, 829-833. doi:10.1097/OLQ.0b013e318073bd71
- Graham, C. A. (2012). Condom use in the context of sex research. *Sexual Health, 9*, 103-108.
- Haavio-Mannila, E., & Kontula, O. (1997). Correlates of increased sexual satisfaction. *Archives*

of Sexual Behavior, 26, 399-419.

Higgins, J. A., & Higgins, J. S. (2007). The pleasure deficit: Revisiting the “sexuality connection” in reproductive health. *International Family Planning Perspectives*, 33, 133-139.

Higgins, J. A., & Wang, Y. (2015). The role of young adults' pleasure attitudes in shaping condom use. *American Journal of Public Health*, 105, 1329-1332. doi: 10.2105/AJPH.2015.302567.

Hock-Long, L., Henry-Moss, D., Carter, M., Hatfield-Timajchy, K., Erickson, P. I., Cassidy, A., Macaуда, M., Singer, M., & Chittams, J. (2013). Condom use with serious and casual heterosexual partners: Findings from a community venue-based survey of young adults. *AIDS and Behavior*, 17, 900-913. doi: 10.1007/s10461-012-0177-2
IBM Corp. Released 2013.

IBM SPSS Statistics for Windows, Version 22.0. Armonk, NY: IBM Corp.

Impett, E. A., & Peplau, L. A., (2003). Sexual compliance: Gender, motivational, and relationship perspectives. *Journal of Sex Research*, 40, 87–100.

Iacobucci, D., Posavac, S.S., Kardes, F.R., Schneider, M.J., & Popovich, D.L. (2015). Toward a more nuanced understanding of the statistical properties of a median split. *Journal of Consumer Psychology*, 25, 652-665.

Joint United Nations Programme on HIV/AIDS (2000). *Men and AIDS – a gendered approach*. Geneva, Switzerland: UNAIDS.

Khan, S. I., Hudson-Rodd, N., Saggars, S., Bhuiyan, M. I., & Bhuiya, A. (2004). Safer sex or pleasurable sex? Rethinking condom use in the AIDS era. *Sexual Health*, 1, 217–225. doi:10.1071/SH04009

- Laumann, E. O., Gagnon, J. H., Michael, R.T., & Michaels, S. (1994). *The social organization of sexuality: Sexual practices in the United States*. Chicago: University of Chicago Press.
- Lescano, C. M., Varquez, E. A., Brown, L. K., Litvin, E. B., Pugatch, D., & Project Shield Study Group. (2006). Condom use with “casual” and “main” partners: what’s in a name? *Journal of Adolescent Health*, 39, 443. e1-7.
- Mah, K., & Binik, Y. M. (2001). The nature of human orgasm: a critical review of major trends. *Clinical Psychology Review*, 21, 823-56.
- Marston, C., & King, E. (2006). Factors that shape young people’s sexual behaviour: A systematic review. *Lancet*, 368, 1581–1586. doi: [http://dx.doi.org/10.1016/S0140-6736\(06\)69662-1](http://dx.doi.org/10.1016/S0140-6736(06)69662-1)
- Nicholson, P., & Burr, J. (2003). What is “normal” about women’s (hetero) sexual desire and orgasm?: A report of an in-depth interview study. *Social Science and Medicine*, 57, 1735-1745.
- Ostergren, J. E., Rosser, B. R. S., & Horvath, K. J. (2011). Reasons for non-use of condoms among men who have sex with men: a comparison of receptive and insertive role in sex and online and offline meeting venue. *Culture, Health & Sexuality*, 13, 123-40. doi:10.1080/13691058.2010.520168
- Public Health Agency of Canada. (2008). *Canadian guidelines for sexual health education*. Ottawa, ON. Ministry of Health.
- Randolph, M. E., Pinkerton, S. D., Bogart, L. M., Cecil, H., & Abramson, P. R. (2007). Sexual pleasure and condom use. *Archives of Sexual Behavior*, 36, 844-848. doi: 10.1007/S10508-007-9213-0
- Ryan, G. W., Stern, S. A., Hilton, L., Tucker, J. S., Kennedy, D. P., Golinelli, D., & Wenzel, S.

- L. (2009). When, where, why and with whom homeless women engage in risky sexual behaviors: a framework for understanding complex and varied decision-making processes. *Sex Roles*, 61, 536-553. doi: 10.1007/s11199-009-9610-z
- Sanders, S. A., Reece, M., Herbenick, D., Schick, V., Dodge, B., & Fortenberry, J. D. (2010). Condom use during most recent vaginal intercourse event among a probability sample of adults in the United States. *Journal of Sexual Medicine*, 7 (suppl 5):362-373. doi:10.1111/j.1743-6109.2010.02011.x. PMID:21029391
- Sayegh, M. A., Fortenberry, J. D., Shew, M., & Orr, D. P. (2006). The developmental association of relationship quality, hormonal contraceptive choice and condom non-use among adolescent women. *Journal of Adolescent Health*, 39, 388–95. doi:10.1016/j.jadohealth.2005.12.027
- Tolman, D. (2002). *Dilemmas of desire: Teenage girls talk about sexuality*. Cambridge, MA: Harvard University Press.
- Waite, L. J., & Joyner, K. (2001). Emotional satisfaction and physical pleasure in sexual unions: Time horizon, sexual behavior, and sexual exclusivity. *Journal of Marriage and Family*, 63, 247-264. doi 10.1111/j.1741-3737.2001.00247.x
- Widman, L., Noar, S.M., Choukas-Bradley, S., & Francis, D.B. (2014). Adolescent sexual health communication and condom use: A meta-analysis. *Health Psychology*, 33, 1113-1124.
- Younge, S. N., Salazar, L. F., Crosby, R. F., DiClemente, R. J., Wingood, G. M., & Rose, E. (2008). Condom use at last sex as a proxy for other measures of condom use: Is it good enough? *Adolescence*, 43, 927-931.

Figure 1.

Percentage of Men and Women reporting Condom Use at Last Vaginal Sex, by Partner Type

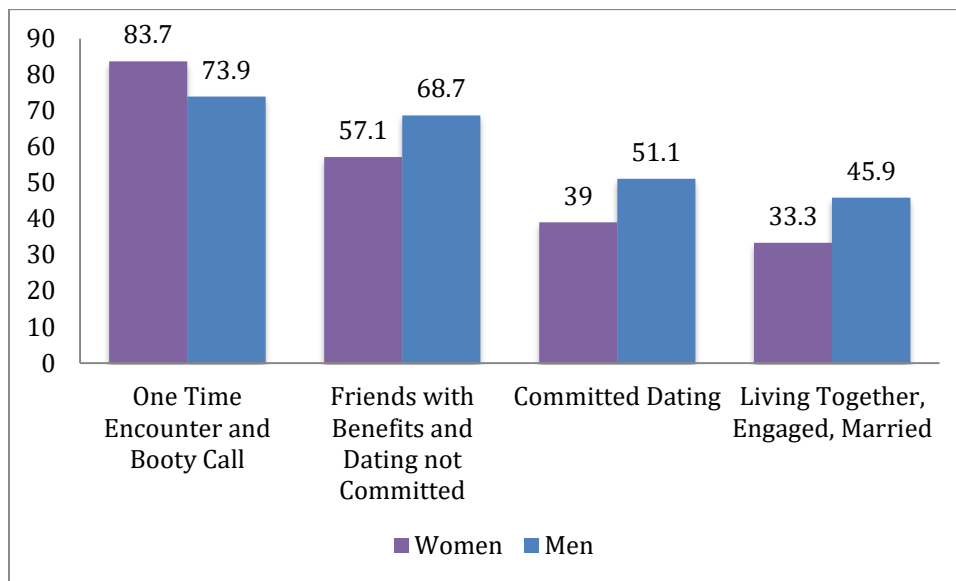


Figure 2.

Percentage of Men and Women indicating Last Vaginal Sex was Very Pleasurable, by Partner Type

Type

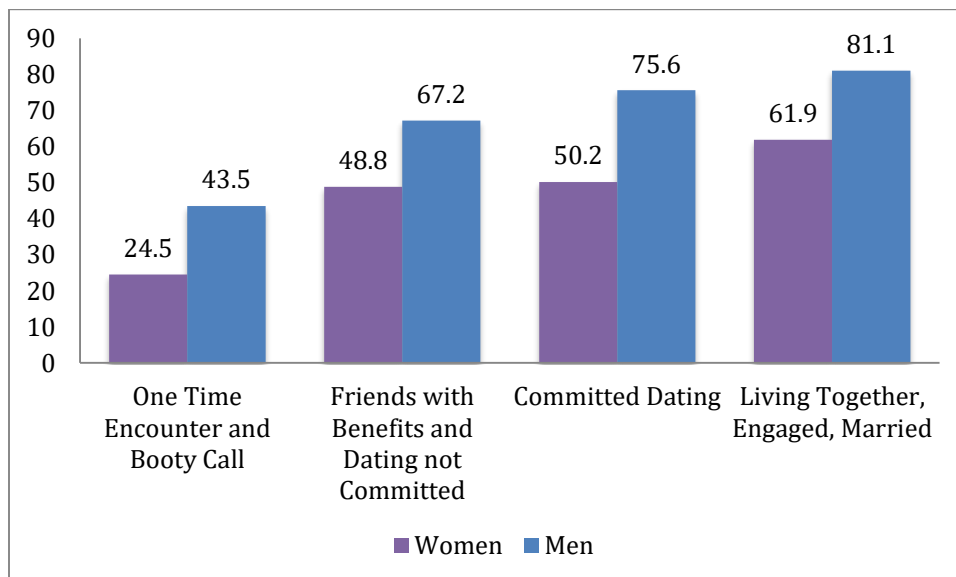


Table 1. *Percentage of men indicating last vaginal sex was very pleasurable, by condom use/nonuse at each level of relationship commitment*

Level of relationship commitment	N for comparison	Condom used	No condom used	Odds Ratio	95% CI	<i>P</i>
One Time Sexual Encounter and Booty Call	46	41.2% (14)	50.0% (6)	.70	.19- 2.62	.60
Friends With Benefits and Dating but not committed	67	63.0% (29)	76.2% (16)	.53	.17- 1.72	.29
Committed dating	131	76.1% (51)	75.0% (48)	1.06	.48- 2.36	.88
Living together, engaged or married**	37	70.6% (12)	90.0% (18)	.27	.04- 1.61	.15

Note: Cell sizes for Living together, engaged, or married were small, with 81.1% (30/37) of men reporting “very pleasurable” for their last vaginal sex regardless of condom use (and 18.9% (7/37) reporting less than “very pleasurable”).

Table 2. *Percentage of women indicating last vaginal sex was very pleasurable, by condom use/nonuse at each level of relationship commitment*

Level of relationship commitment	N for comparison	Condom used	No condom used	Odds Ratio	95% CI	<i>P</i>
One Time Sexual Encounter and Booty Call**	43	22.2% (8)	42.9% (3)	.38	.07- 2.07	.26
Friends With Benefits and Dating but not committed	84	43.8% (21)	55.6% (20)	.62	.26- 1.49	.28
Committed dating	223	41.4 (36)	55.9 (76)	.56	.32-96	.04
Living together,	84	60.7%	62.5%	.93	.37-	.87

engaged or married	(17)	(35)	2.35
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Note: Cell sizes for One Time Sexual Encounter and Booty Call were small, with 74.4% (32/43) of women reporting less than “very pleasurable” for their last encounter (and 25.6% (11/43) reporting “very pleasurable”). That the significant odds ratio for women in committed dating relationships was less than one indicates that that women in this relationship category who used a condom at last sex were proportionally less likely to indicate this PVI was very pleasurable compared to women in this relationship category who did not use a condom.