

Condom Use for Penile–Vaginal Intercourse is Associated with Immature Psychological Defense Mechanisms

Rui Miguel Costa, MA,* and Stuart Brody, PhD†

*CEDEMA—Associação de Pais e Amigos dos Deficientes Mentais Adultos, Lisbon, Portugal; †Division of Psychology, School of Social Sciences, University of the West of Scotland, Paisley, UK

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ABSTRACT

Introduction. Freud opined that condom use during penile–vaginal intercourse (PVI), like sexual activities other than PVI, led to a detrimental effect on orgasm that fueled the neuroses. Although this hypothesis had not been empirically tested, Freud's hypothesis that inability to have a (PVI) vaginal orgasm is a sign of psychological immaturity has recently received empirical support.

Aims. The objective is to examine the hypotheses that use of immature psychological defense mechanisms correlates directly with frequency of condom use during PVI, but inversely with frequency of PVI without condoms. An additional aim is to examine the independent contributions of frequency of PVI with and without condoms, and different triggers of orgasm, in predicting the use of immature defense mechanisms.

Methods. Two hundred ten Portuguese participants (99 women) reported their frequency of PVI with and without condoms, and frequency of orgasms from different sexual activities during the preceding month, and also completed the Defense Style Questionnaire (DSQ-40).

Main Outcome Measure. The association of DSQ-40 immature defenses (correlated with indices of psychopathology) with past month frequency of PVI with and without condoms, and orgasms from different sexual behaviors.

Results. Frequency of PVI with condoms correlated directly with use of immature defenses. Frequency of PVI without condoms correlated inversely with use of immature and neurotic defenses. Results were not confounded by relationship status, age, cohabitation, or social desirability responding. Regression analyses revealed that immature defenses were independently predicted by condom use for PVI and by masturbation orgasms (for both sexes). For women additional predictors were lack of vaginal orgasm, and orgasm from clitoral masturbation during PVI.

Conclusions. The results are consistent with condom use during PVI being associated with psychological immaturity and predisposition to poorer mental health. **Costa RM, and Brody S. Condom use for penile–vaginal intercourse is associated with immature psychological defense mechanisms. J Sex Med 2008;5:2522–2532.**

Key Words. Condoms; Orgasm; Sexual Intercourse; Emotional Maturity; Psychoanalytic Theory

Introduction

The past two decades have seen a dramatic increase in the promotion of condom use for penile–vaginal intercourse (PVI), and a sizable literature on social predictors of condom use has accumulated. Research and interventions have been based on the assumptions that condoms have great prophylactic value against HIV transmission during PVI, and few, if any, adverse effects or cor-

relates. The former assumption has been undermined by research suggesting that (in contrast to the vectors of anal intercourse and punctures) for a reasonably healthy adult, HIV transmission is extremely unlikely during PVI [1–9]. The assumption regarding limited adverse effects of condoms has rarely been tested, the occasional exceptions being the toxic, allergenic, predisposition to urinary tract infection, and otherwise uncomfortable aspects of condoms [10–14].

Freud's clinical observations led him to infer that orgasms obtained either by PVI with a condom or by means other than PVI were a predisposing factor for neuroses in both sexes, as such climaxes could only provide partial release of sexual tensions, and consequently the accumulated sexual tension would be converted into psychological symptoms. Psychosexual immaturity was opined to be both cause and effect of choosing sexual behaviors other than (condomless) PVI [15–16]. Interestingly, Freud suggested that *coitus reservatus*, i.e., PVI with condom, was not “injurious to the woman provided she is very quickly excitable, and the husband very potent” [15]. Although these views were untested for decades, recent research summarized below suggests that PVI is a protective health behavior, but condom use might detract from some of its benefits.

Frequency of PVI (but not of other sexual behaviors either alone or with a partner) has been associated consistently with indices of better health and relatedness: greater heart rate variability (an index of cardiovascular autonomic regulation associated with better emotional health and longevity) [17], less alexithymia (the inability to perceive and express specific emotions; a psychological trait related to psychopathology) [18], better (lesser) blood pressure response to stress [19], less overweight [20], nutritional enhancement effects [21], and better relationship quality with sexual partners [22]. However, other than its role in reducing the risk of traditional sexually transmitted diseases (STDs), especially in the core groups at highest risk [23], condom use during PVI (like abstaining from PVI) appears to be associated with poorer psychological and physiological functioning, notably more depressive symptoms [24–26], and poorer immune function [27]. Gallup and colleagues [24] found that among sexually active women, depressive symptoms were associated with greater consistency of condom use for PVI, and depressive symptoms were similar for women who abstained from PVI and women who used condoms. A longitudinal study [25] revealed that compared with women who did not use condoms at all, women who used condoms consistently were both more depressed at baseline and also experienced a worsening of their mood during the 3-month observation period. Depressive symptoms can be seen as due at least in part to use of poor defense mechanisms [28].

Although there are studies seemingly suggesting that condom nonusers are lower-functioning, these studies have focused on special populations,

e.g., adolescents, often with highly selected demographic characteristics [29], prostitutes [30], homosexuals [31], and HIV-infected individuals [32], for whom the relationships between condom use and emotional distress might be confounded by factors less relevant for the general adult population. For example, in the homosexual studies, the questions regarding condom use focus on sexual behaviors other than PVI, and there is insufficient differentiation of sexual behaviors (especially between PVI and anal intercourse) in other studies.

It has been suggested that condoms might interfere with the natural antidepressant effects of vaginal absorption of seminal components [24]. Also, condoms commonly decrease sexual sensation and satisfaction, which can lead to vaginal irritation [10] and erectile dysfunction [33]. The resultant lack of satisfactory orgasm could detract from pair-bonding and neurohormonal homeostatic processes with untoward implications for health [34,35].

Psychological defense mechanisms were originally a psychoanalytic concept that can nonetheless be considered at a purely behavioral level. Defenses are processes, generally operating outside awareness, that reduce acute distress caused by emotional conflict. Immature (maladaptive) defense mechanisms are associated with a variety of indices of poorer mental health and relatedness, including psychological immaturity and lesser ability to relate intimately with the opposite sex [28,36–39].

According to early psychoanalytic theories, psychological immaturity (with its concomitant greater use of immature defenses) could lead to inhibition of frequency and appreciation of PVI in favor of other or no sexual behaviors, with noxious consequences for mental health and intimate relationships [16]. This controversial Freudian view recently received important empirical support [40]. Anatomical research has demonstrated that nerve density is fairly uniform throughout vagina and cervix, allowing the triggering of orgasm with the appropriate stimulation and lack of psychological resistance [41]. Immature defense mechanisms are inversely correlated with the consistency of women's orgasms triggered purely by PVI (vaginal orgasmic consistency), but not by other sexual behaviors, including orgasm triggered by extrinsic (masturbatory) clitoral stimulation during PVI [40]. Moreover, immature defenses are associated with orgasms from masturbation or from extrinsic clitoral stimulation during PVI. In

regression analyses, immature defenses were independently predicted by vaginal orgasmic consistency (inversely) and by masturbation (directly). These results are congruent with other research linking indices of psychological, psychophysiological, interpersonal, and sexual impairments with both lack of orgasm during PVI [22,42–46] and with greater masturbation frequency [19,20,22,47–50]. Having masturbated in the preceding month was also associated with more condom use [49].

Persons with more psychological immaturity might prefer condoms for PVI as a means of reducing intimacy and/or such reduction might hinder psychological growth. Condom users have been found to have poorer relationship quality with their partners [25], and more negative feelings about sex, including heterosocial anxiety [51] and STD-related shame [52]. For female prostitutes, the motivation to use condoms is not always simply to reduce perceived health risks, but sometimes to limit the “risk” of intimate and sensitive feelings, as emotional closeness with clients might be more likely with unobstructed genital contact [53].

The present study examines the hypotheses that (i) frequency of PVI without condoms is associated with less use of immature psychological defense mechanisms; and (ii) frequency of PVI with condoms is associated with more use of immature psychological defense mechanisms (in both cases controlling for the potential confounds of relationship status, cohabitation, age, and social desirability responding). An additional aim is to explore (in regression analyses) to what extent immature defense mechanisms are independently predicted by PVI without condoms, PVI with condoms, solitary masturbation, and specifically for females, orgasms from PVI (vaginal orgasm), and from clitoral masturbation during PVI.

Materials and Methods

The opportunity sample consisted of 210 Portuguese participants (99 women) contacted directly by one of the authors (R.M. Costa) or research assistants in a variety of institutional settings in Lisbon to complete a questionnaire on sexual behavior and personality (94 of the women were participants in the recent study linking lack of vaginal orgasm with immature psychological defenses [40]). Anonymity, confidentiality, and ability to discontinue participation at any time were assured. After informed consent, question-

naires were completed and participants debriefed. The study was conducted in accordance with the principles of the Helsinki Declaration, and as is the case in Portugal for noninvasive voluntary anonymous surveys of adults, no formal committee process was required.

Frequency of sexual behaviors was assessed by a written questionnaire asking participants how many days in the past month they had PVI, PVI without condoms, orgasm by masturbating alone, and for females, vaginal orgasm (from PVI without simultaneous extrinsic clitoral stimulation), and orgasm through extrinsic clitoral stimulation (masturbation by self or partner) during PVI. Various versions of this questionnaire were used in several studies in Dutch [54,55], German [17–21], and Portuguese [22,40]. The German questionnaire measures correlated (PVI frequency correlated 0.64) with diary measures of the same sexual behaviors during a subsequent time period, providing a very conservative estimate of reliability [17].

Psychological defenses were assessed with the validated Portuguese version of the Defense Style Questionnaire (DSQ-40) [56]. The DSQ-40 [57] is a self-report instrument intended to measure the conscious derivatives of 20 defense mechanisms. Participants indicate agreement to 40 self-descriptive statements on a scale ranging from 1 (I totally disagree) to 9 (I totally agree). The factor analysis conducted by Andrews et al. [57] demonstrated a three-factor structure consisting of mature, neurotic, and immature defenses.

Validity studies using the DSQ-40 demonstrated that immature defenses scores are directly associated with several indices of poorer mental health and poorer adaptiveness, including depression [28], anxiety disorders [28,57], personality disorders [58], alexithymia [36], poorer coping styles [37], and poorer marital adjustment [37]. Lesser mature defenses scores and more neurotic defenses scores tend to be associated with poorer functioning, but these relationships are less consistent than those obtained for immature defenses [28,36,40].

The possibility of social desirability responding was assessed with a short form of the Marlowe–Crowne Social Desirability Scale [59].

Separate partial correlations for both sexes are used to examine the associations between defense styles and sexual behavior (PVI with and without condoms) frequencies, controlling for age, social desirability responding, relationship status, and cohabitation.

To explore the extent to which various sexual behaviors in the past month make independent contributions to predicting the use of immature defenses, separate stepwise multiple regressions for both sexes are performed including—as candidate predictor variables: frequency of PVI (with and without condoms), masturbation orgasm (dichotomous variable: any orgasm or not), and for women also vaginal orgasmic consistency and clitoral orgasmic consistency during PVI (days of orgasm from the activity divided by the total frequency). An additional stepwise multiple regression is performed for the female subsample substituting vaginal and clitoral orgasmic consistency during PVI with the dichotomous criterion for the respective types of orgasm.

Results

Of the 210 participants, 112 (48 women) were university students, and most of the remainder were health care workers (including physicians, nurses, pharmacists, and staff in a facility for the mentally retarded), with some from other professions. Six had not completed secondary school, nine had completed only secondary school, and the remainder had varying levels of university education.

Descriptive statistics for demographics and sexual behaviors, as well as inferential statistics for sex differences, are displayed in Table 1.

Table 2 displays partial correlations of women's psychological defenses with frequency of PVI with and without condoms controlling for age, social desirability responding, relationship status, and cohabitation. For the subgroup with PVI during the past month, frequency of PVI without condoms correlates inversely with both immature and neurotic defenses, but frequency of PVI with condoms correlates directly with immature defenses.

As depicted in Table 2, when women who did not report PVI in the past month were included in the partial correlation analyses, the previous associations remained, although PVI without condoms correlated less strongly inversely with the neurotic and immature defenses.

Table 3 depicts the results of the same statistical analyses applied to men. The male results are similar to those of females regarding the correlations of immature and neurotic defense dimensions with PVI with or without condoms, although the male correlations were generally weaker.

Table 4 displays the summary of the stepwise multiple regression performed with the female

subsample reporting PVI in the previous month, with immature defenses as the dependent variable, and including as candidate predictor variables (all candidate predictor variables were significant correlates of immature defenses in the analyses depicted in Tables 2 or 3, or in an earlier study [40]): frequency of PVI (with and without condoms), vaginal orgasmic consistency, orgasmic consistency from clitoral masturbation during PVI, and any solitary masturbation orgasm. The use of immature defenses was independently predicted by vaginal orgasmic consistency (inversely), frequency of PVI with condoms (directly), and any masturbation orgasm (directly). When the dichotomous criterion is applied to vaginal orgasm and clitoral orgasm during PVI (for those women who had PVI in the past month), not having any vaginal orgasm during the last month and frequency of PVI with condoms were significant predictors of immature defenses, but masturbation orgasm was not (see Table 5). The latter stepwise multiple regression applied to the entire sample reveals that immature defenses is independently predicted by frequency of PVI with condoms, any masturbation orgasm, any clitoral orgasm during PVI (all directly), and any vaginal orgasm (inversely; see Table 6).

The same statistical procedures were applied to the males' data. Because for males social desirability correlated negatively with immature defenses ($r = -0.27$, $P = 0.005$), social desirability was included as a candidate predictor variable. For the male subsample reporting PVI in the past month, frequency of PVI without condoms was the only independent predictor of immature defenses (inversely), ($r = -0.23$, $P = 0.04$). For the entire male subsample, the use of immature defenses was independently predicted by frequency of PVI with condoms (directly), any masturbation orgasm (directly), and social desirability (negatively; see Table 7).

The largest variance inflation factor value in the stepwise regressions (a measure of the risk of multicollinearity) was 1.18 for men and 1.66 for women, which indicates that multicollinearity is not a significant concern in this case.

Discussion

The hypotheses that (i) less use of immature psychological defenses is associated with greater frequency of PVI without condoms; and (ii) more use of immature psychological defenses is associated with greater frequency of PVI with condoms, were

Table 1 Demographics and sexual behaviors in past month for the total sample and the subgroup with penile–vaginal intercourse (PVI)

| Total sample | Men N = 111 | Women N = 99 | <i>t</i> or χ^2 |
|---|-----------------------|-------------------------|----------------------|
| Age [†] | 28.17 (8.34) | 27.78 (7.73) | 0.35 |
| Marital status | | | |
| Single | 95 | 79 | 2.80 |
| Married | 13 | 13 | |
| Divorced | 2 | 6 | |
| Widowed | 1 | 1 | |
| With ongoing relationship (%) | 63.1 | 70.7 | 1.38 |
| Cohabitants (%) | 25.2 | 27.3 | 0.15 |
| Bisexuals | 2 | 2 | |
| Homosexuals | 0 | 1 | |
| PVI without condoms (days) [†] | 4.32 (6.74) | 5.85 (6.95) | 1.61 |
| PVI with condoms (days) [†] | 2.19 (4.00) | 1.60 (4.19) | 1.05 |
| Vaginal orgasm (days) [†] | | 4.76 (5.81) | |
| Clitoral orgasm during PVI (days) [†] | | 4.37 (5.95) | |
| Masturbation orgasm (days) [†] | 5.04 (6.87) | 0.99 (2.32) | 5.77** |
| Vaginal orgasm (any, past month) [‡] | | 57.7 | |
| Clitoral orgasm during PVI (any, past month) [‡] | | 52.6 | |
| Masturbation orgasm (any in past month) [‡] | 62.0 | 26.0 | 26.60** |
| Subgroup with PVI in past month | Men N = 86 | Women N = 73 | |
| Age [†] | 28.95 (8.61) | 28.67 (8.23) | 0.21 |
| Marital status | | | |
| Single | 70 | 55 | 2.08 |
| Married | 13 | 12 | |
| Divorced | 2 | 5 | |
| Widowed | 1 | 1 | |
| With ongoing relationship (%) | 72.1 | 91.8 | 10.00** |
| Cohabitants (%) | 32.6 | 35.6 | 0.22 |
| Bisexuals | 1 | 2 | |
| PVI without condoms (days) [†] | 5.58 (7.19) | 7.93 (7.01) | 2.08* |
| PVI with condoms (days) [†] | 2.83 (4.34) | 2.16 (4.76) | 0.92 |
| Vaginal orgasm (days) [†] | | 6.51 (5.90) | |
| Clitoral orgasm during PVI (days) [†] | | 5.97 (6.23) | |
| Masturbation orgasm (days) [†] | 4.92 (7.12) | 1.03 (2.49) | 4.35** |
| Vaginal orgasm (any, past month) [‡] | | 78.9 | |
| Clitoral orgasm during PVI (any, past month) [‡] | | 71.8 | |
| Masturbation (any, past month) [‡] | 61.4 | 25.7 | 19.58** |
| Vaginal orgasmic consistency (%) [‡] | | 59.21 (38.77) | |
| Clitoral orgasm consistency during PVI (%) [‡] | | 56.77 (42.01) | |
| Consistency of condom use for PVI | | | |
| Never (%) | 53.5 | 72.6 | 8.35* |
| Inconsistently (%) | 11.6 | 12.3 | |
| Always (%) | 34.9 | 15.1 | |

* $P < 0.05$; ** $P < 0.001$.[†]Mean (standard deviation).[‡]Percentage of those engaging in the behavior at least once.

both supported. There was statistical control for the potential confounds of age, social desirability responding, relationship status, and cohabitation.

Of note, the relationship between condom use and psychological immaturity is not due to indices of sexual partner accessibility, such as having an ongoing relationship or cohabitating.

The association between condom use and immature defense mechanisms suggests that condoms might detract from some of the health benefits associated with PVI [17–22]. However, immature defenses could be understood as person-

ality traits that inhibit the full appreciation of PVI. These hypotheses are not mutually exclusive, but the latter receives support from the finding that when women who did not have PVI in the preceding month are included in the correlational analyses, the inverse association of PVI without condoms and immature defenses loses some statistical power, but not the direct association of PVI with condoms and immature defenses. It is possible that if women without a current partner but with a less immature defense profile had an opportunity to have PVI, they might be less likely to use

Table 2 Partial correlations of Defense Style Questionnaire-40 with women’s penile–vaginal intercourse (PVI) frequency with and without condoms (controlling for age, relationship status, cohabitation, and social desirability responding)

| | Subgroup with PVI in past month (N = 73) | | Total sample (N = 99) | |
|--------------------|--|------------------|-----------------------|------------------|
| | PVI without condoms | PVI with condoms | PVI without condoms | PVI with condoms |
| Immature defenses | -0.31** | 0.27* | -0.21* | 0.26** |
| Rationalization | 0.11 | 0.05 | 0.11 | 0.04 |
| Projection | -0.03 | 0.15 | -0.007 | 0.14 |
| Passive aggression | -0.44*** | 0.41*** | -0.32** | 0.39*** |
| Acting out | -0.20 | 0.05 | -0.14 | 0.06 |
| Isolation | -0.27* | 0.22 | 0.22* | 0.20 |
| Devaluation | -0.08 | 0.27* | -0.04 | 0.24* |
| Autistic fantasy | -0.12 | -0.15 | -0.07 | -0.12 |
| Denial | -0.18 | 0.09 | -0.11 | 0.09 |
| Displacement | -0.31** | 0.34** | -0.25* | 0.29** |
| Dissociation | -0.04 | 0.03 | 0.03 | 0.05 |
| Splitting | -0.28* | 0.24* | -0.20 | 0.22* |
| Somatization | 0.04 | 0.09 | -0.03 | 0.09 |
| Neurotic defenses | -0.37** | 0.19 | -0.29** | 0.17 |
| Pseudoaltruism | -0.15 | -0.05 | -0.14 | -0.04 |
| Idealization | -0.25* | 0.25* | -0.19 | 0.22 |
| Reaction formation | -0.28* | 0.13 | -0.26* | 0.10 |
| Undoing | -0.30* | 0.14 | -0.17 | 0.14 |
| Mature defenses | -0.09 | -0.004 | -0.06 | -0.003 |
| Anticipation | -0.20 | 0.12 | -0.14 | 0.12 |
| Humor | 0.06 | -0.08 | 0.06 | -0.07 |
| Suppression | 0.04 | -0.01 | 0.04 | 0.001 |
| Sublimation | -0.10 | -0.04 | -0.09 | -0.05 |

P* < 0.05; *P* < 0.01; ****P* < 0.001.

condoms. Also, the associations between condom use and immature defenses were generally weaker for males than for females. Men’s condom use might be largely determined by female partners

demanding it [60]. Thus, it is possible that some men with a less immature profile are using condoms at the insistence of their partners. Taken together, the present results support the view

Table 3 Partial correlations of Defense Style Questionnaire-40 with men’s penile–vaginal intercourse (PVI) frequency with and without condoms (controlling for age, relationship status, cohabitation, and social desirability responding)

| | Subgroup with PVI in past month (N = 86) | | Total sample (N = 111) | |
|--------------------|--|------------------|------------------------|------------------|
| | PVI without condoms | PVI with condoms | PVI without condoms | PVI with condoms |
| Immature defenses | -0.22* | 0.25* | -0.19* | 0.19* |
| Rationalization | -0.02 | 0.03 | -0.04 | 0.004 |
| Projection | -0.10 | 0.09 | -0.11 | 0.03 |
| Passive aggression | -0.03 | -0.03 | -0.03 | -0.02 |
| Acting out | -0.07 | 0.09 | -0.05 | 0.10 |
| Isolation | -0.14 | 0.16 | -0.15 | 0.09 |
| Devaluation | -0.33** | 0.35*** | -0.27** | 0.31*** |
| Autistic fantasy | -0.13 | 0.09 | -0.14 | 0.05 |
| Denial | -0.35*** | 0.38*** | -0.31*** | 0.33*** |
| Displacement | -0.18 | 0.13 | -0.14 | 0.13 |
| Dissociation | -0.10 | 0.15 | -0.09 | 0.12 |
| Splitting | -0.09 | 0.17 | -0.07 | 0.14 |
| Somatization | 0.09 | -0.01 | 0.08 | 0.02 |
| Neurotic defenses | -0.24* | 0.13 | -0.21* | 0.08 |
| Pseudoaltruism | -0.17 | 0.09 | -0.14 | 0.09 |
| Idealization | -0.09 | 0.05 | -0.10 | 0.01 |
| Reaction formation | -0.13 | 0.07 | -0.15 | -0.01 |
| Undoing | -0.21 | 0.12 | -0.17 | 0.12 |
| Mature defenses | -0.16 | 0.09 | -0.15 | 0.06 |
| Anticipation | -0.09 | 0.19 | -0.08 | 0.17 |
| Humor | 0.06 | 0.02 | 0.05 | -0.01 |
| Suppression | -0.25* | 0.12 | -0.24* | 0.07 |
| Sublimation | -0.13 | -0.06 | -0.12 | -0.06 |

P* ≤ 0.05; *P* < 0.01; ****P* ≤ 0.001.

Table 4 Stepwise multiple regression prediction of immature defenses from sexual behaviors (female subsample with penile–vaginal intercourse [PVI] in the preceding month)

| Step | | Unstandardized coefficients | Standardized coefficients | <i>t</i> | <i>P</i> | <i>R</i> | <i>R</i> square change |
|------|------------------------------|-----------------------------|---------------------------|----------|----------|----------|------------------------|
| | | B | Beta | | | | |
| 1 | (constant) | 4.50 | | 20.88 | <0.001 | 0.37 | 0.14 |
| | Vaginal orgasmic consistency | −0.01 | −0.37 | −3.25 | 0.002 | | |
| 2 | (constant) | 4.35 | | 20.64 | <0.001 | 0.48 | 0.09 |
| | Vaginal orgasmic consistency | −0.01 | −0.37 | −3.44 | 0.001 | | |
| | PVI with condoms | 0.07 | 0.31 | 2.85 | 0.006 | | |
| 3 | (constant) | 4.17 | | 18.95 | <0.001 | 0.54 | 0.06 |
| | Vaginal orgasmic consistency | −0.01 | −0.34 | −3.26 | 0.002 | | |
| | PVI with condoms | 0.06 | 0.29 | 2.77 | 0.007 | | |
| | Any masturbation orgasm | 0.57 | 0.24 | 2.30 | 0.03 | | |

that persons less comfortable with the powerful emotions induced by highly intimate and sensitive genital sexuality might prefer to use condoms, as they are associated with less intimacy [25,53].

For females reporting PVI in the past month, condom use during PVI, masturbation orgasm, and lack of vaginal orgasm were all independently associated with greater use of immature defense mecha-

nisms. For the total female sample, orgasm from clitoral masturbation during PVI was an additional predictor of immature defenses. Although it is possible that part of the finding is due to specific sexual behaviors having an effect on psychological defense style (with important implications for treatment [40]), these results also suggest that an immature personality might play a major role in inhibiting full

Table 5 Stepwise multiple regression prediction of immature defenses from sexual behaviors (dichotomous criterion applied to vaginal intercourse orgasm and clitoral orgasm during penile–vaginal intercourse [PVI]; female subsample with PVI in the preceding month)

| Step | | Unstandardized coefficients | Standardized coefficients | <i>t</i> | <i>P</i> | <i>R</i> | <i>R</i> square change |
|------|--------------------|-----------------------------|---------------------------|----------|----------|----------|------------------------|
| | | B | Beta | | | | |
| 1 | (constant) | 4.54 | | 17.50 | <0.001 | 0.32 | 0.10 |
| | Any vaginal orgasm | −0.80 | −0.32 | −2.73 | 0.008 | | |
| 2 | (constant) | 4.46 | | 18.28 | <0.001 | 0.47 | 0.12 |
| | Any vaginal orgasm | −0.92 | −0.36 | −3.32 | 0.001 | | |
| | PVI with condoms | 0.08 | 0.35 | 3.22 | 0.002 | | |

Table 6 Stepwise multiple regression prediction of immature defenses from sexual behaviors (dichotomous criterion applied to vaginal intercourse orgasm and clitoral orgasm during penile–vaginal intercourse [PVI]; total female subsample)

| Step | | Unstandardized coefficients | Standardized coefficients | <i>t</i> | <i>P</i> | <i>R</i> | <i>R</i> square change |
|------|--------------------------------|-----------------------------|---------------------------|----------|----------|----------|------------------------|
| | | B | Beta | | | | |
| 1 | (constant) | 3.76 | | 36.49 | <0.001 | 0.29 | 0.08 |
| | PVI with condoms | 0.07 | 0.29 | 2.93 | 0.004 | | |
| 2 | (constant) | 3.62 | | 31.82 | 0.000 | 0.38 | 0.06 |
| | PVI with condoms | 0.06 | 0.28 | 2.87 | 0.005 | | |
| | Any masturbation orgasm | 0.53 | 0.24 | 2.49 | 0.01 | | |
| 3 | (constant) | 3.84 | | 24.39 | <0.001 | 0.42 | 0.04 |
| | PVI with condoms | 0.08 | 0.33 | 3.35 | 0.001 | | |
| | Any masturbation orgasm | 0.46 | 0.21 | 2.14 | 0.04 | | |
| | Any vaginal intercourse orgasm | −0.39 | −0.20 | −2.01 | 0.047 | | |
| 4 | (constant) | 3.76 | | 23.62 | <0.001 | 0.47 | 0.04 |
| | PVI with condoms | 0.07 | 0.33 | 3.36 | 0.001 | | |
| | Any masturbation orgasm | 0.46 | 0.21 | 2.18 | 0.03 | | |
| | Any vaginal intercourse orgasm | −0.68 | −0.35 | −2.91 | 0.005 | | |
| | Any clitoral orgasm during PVI | 0.48 | 0.25 | 2.14 | 0.04 | | |

Table 7 Stepwise multiple regression prediction of immature defenses from sexual behaviors and social desirability (total male subsample)

| Step | | Unstandardized coefficients | Standardized coefficients | <i>t</i> | <i>P</i> | <i>R</i> | <i>R</i> square change |
|------|-------------------------|-----------------------------|---------------------------|----------|----------|----------|------------------------|
| | | B | Beta | | | | |
| 1 | (constant) | 4.13 | | 19.61 | <0.001 | | |
| | Social desirability | -0.08 | -0.27 | -2.92 | 0.004 | 0.27 | 0.07 |
| 2 | (constant) | 4.13 | | 19.98 | <0.001 | | |
| | Social desirability | -0.10 | -0.32 | -3.41 | 0.001 | | |
| | PVI with condoms | 0.05 | 0.21 | 2.28 | 0.03 | 0.34 | 0.04 |
| 3 | (constant) | 3.84 | | 15.22 | <0.001 | | |
| | Social desirability | -0.08 | -0.28 | -2.91 | 0.004 | | |
| | PVI with condoms | 0.05 | 0.22 | 2.33 | 0.02 | | |
| | Any masturbation orgasm | 0.33 | 0.19 | 2.00 | 0.048 | 0.390 | 0.03 |

PVI = penile-vaginal intercourse.

appreciation of PVI. Some women without a sexual partner in the last month, but with a less immature profile, might rely less on extrinsic clitoral stimulation for orgasm during PVI (and also be less likely to use condoms for PVI), if they had the opportunity to engage in PVI.

For the entire male sample, the use of immature defenses was independently predicted by frequency of PVI with condoms, and by masturbation orgasm. These results are analogous to those found in women showing independent contributions of masturbation and condom use for PVI to predicting psychological immaturity, and are consistent with previous findings linking masturbation to poorer psychological, interpersonal, and sexual functioning [19,20,22,47-50].

Although social desirability might be related to men's underreporting of behavioral derivatives of the immature defenses, social desirability did not confound the relationships between immature defenses and sexual behaviors.

Not asking about nominal conscious motivations for condom use could be regarded as a minor limitation of the study. However, a previous study [61] found that with casual partners, condom use was not predicted by either event-specific or event-independent concerns for either pregnancy or STD/HIV; with regular partners only event-independent concerns for STD/HIV predicted condom use, but the effect size was small. Event-independent STD/HIV concern might itself be a sign of alienation from sexuality [9]. Moreover, the decision to use condoms specifically for contraception seems related to psychological issues; it was found [51] that women with high heterosocial anxiety prefer the condom as a contraceptive method, but women with low heterosocial anxiety prefer oral contraception.

Another possible minor limitation could be not asking participants' lifetime number of sexual partners. However, condom use is not clearly associated with lifetime number of sexual partners [61]. Although having two or more partners during the previous year was associated with any condom use, it was unrelated to always using a condom during that period [62]. Moreover, lifetime number of sexual partners is not clearly related to general indices (less sophisticated than defense mechanisms) of neurotic tendencies [63], but is related to sensation seeking and extraversion [9].

As in any correlational or risk factor study, it is not impossible that the relationship between immature defenses and condom use could be explained by an unknown third factor. However, this hypothetical influence would have to fit the obtained pattern: (i) opposite directions for PVI with condoms and without condoms in their association with immature defenses, and (ii) the observed pattern of significant component immature defenses. For women, passive aggressiveness (an indirect expression of aggression) and displacement (displacement of negative emotions to a different target) might respectively be ways to decrease a partner's pleasure and to transfer fear and anger into the sexual realm. For men, devaluation (attributing exaggerated negative qualities to the self or to others) and denial might be seen respectively as means of obtaining a hostile distance and of limiting awareness of a less satisfactory sexuality.

For both sexes, neurotic defenses were inversely correlated with frequency of PVI without condoms, but uncorrelated with PVI with condoms. This result provides further support that it is specifically PVI without condoms that is associated with healthy psychological function. Neurotic defenses tend to be associated with indices of

psychological impairment (although less consistently so than are immature defenses) [28,36,40], but uncorrelated [38] or even positively associated with more specific measures of interpersonal functioning [37]. Thus, neurotic defenses might inhibit the seeking and obtaining of PVI without condoms, but (unlike immature defenses) without increasing the seeking of sexual activity with less emotional interaction.

The present findings fit Freud's view that both condoms for PVI and orgasms from sexual activities other than PVI are associated with psychological immaturity or impairment [15–16].

The present results build on the earlier finding that lack of vaginal orgasm, reliance on extrinsic clitoral stimulation for orgasm during PVI, and masturbation orgasm, are associated with more use of immature defenses [40], by demonstrating independent contributions of condom use to predicting immature defenses. Thus, it appears that a similar defensive pattern operates in the choice to use condoms for PVI, in the impairment of full appreciation of PVI, and in the tendency to engage in sexual activities with less intimate physical and emotional contact than PVI.

The postorgasmic prolactin rise, an index of sexual satiety with implications for central dopaminergic neuroregulation, is 400% greater following PVI than following masturbation (in both sexes, adjusted for individual control conditions) [34]. Future studies might examine if the reductions in pleasure associated with condom use go beyond the subjective feeling and impact negatively on the optimal neurohormonal homeostasis that is relevant to emotional well-being and mental health. At an evolutionary level, it would make sense that the presence of semen in the vagina might have rewarding effects beyond those of vaginal intercourse orgasm. Semen might have antidepressant [24] and immunological benefits [27], as well as contribute to maintaining vaginal function [64]. Similarly, vaginal secretions on the penis might have a positive effect on male immune function [27].

Conclusions

As Symons [65] noted,

Natural selection has provided us with only a few ways of experiencing intense pleasure, and surely, for many people, sexual intercourse is at or near the top of this short list; hence, anything that diminishes sexual pleasure constitutes a significant cost. Yet many writers, both popular and professional, appear to assume that sex is the one area of life where we should strive to reduce risk no matter what the cost (pp. 345–346).

The current findings add to the literature demonstrating that in the general adult population, not only is PVI frequency associated with better mental and physical health, but condom use for PVI is associated with poorer physical and mental health [24–27], poorer relationship quality [25,53], and more discomfort with sexuality [51,52]. The current findings are also congruent with a key aspect of Freud's theory of psychosexual development [15–16]. The findings should lead researchers, educators, and clinicians to reconsider the relative benefits and costs of condom use for PVI, especially for noncore group populations at near-zero risk for HIV [1–9] and even at relatively low risk for STDs [23,66].

Rather than simply attempting to portray condoms as faultless, an honest and scientific approach should be taken.

Corresponding Author: Stuart Brody, PhD, School of Social Sciences, University of the West of Scotland, Paisley, PA1 2BE, UK. Tel: 44-141-849-4020; Fax: 44-141-8483891; E-mail: stuartbrody@hotmail.com

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Statement of Authorship

Category 1

- (a) **Conception and Design**
Stuart Brody; Rui M. Costa
- (b) **Acquisition of Data**
Rui M. Costa
- (c) **Analysis and Interpretation of Data**
Rui M. Costa; Stuart Brody

Category 2

- (a) **Drafting the Article**
Rui M. Costa; Stuart Brody
- (b) **Revising It for Intellectual Content**
Stuart Brody; Rui M. Costa

Category 3

- (a) **Final Approval of the Completed Article**
Rui M. Costa; Stuart Brody

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