

Decision-Making Over Condom Use During Menses To Avert
Sexually Transmitted Infections

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Abstract

Objective: To test the hypothesis that receptive partners in penile-vaginal intercourse (PVI) who exercise independent decision making over condom use during menses do so to avert STI transmission/acquisition.

Methods: Data were collected through a partnership with *Clue*, the industry-leading female healthapp. A brief web-based questionnaire was developed, translated into 10 languages, and made accessible via a url link sent to *Clue* users and posted on social media. Inclusion criteria were: age 14 years or older, not being currently pregnant, and engaging in penile-vaginal intercourse (PVI) and condom use during menses in the past 3 months. The analytic sub-sample comprised 12,889 respondents residing in 146 countries.

Results: Twenty percent indicated independent decision-making about condom use during menses. Independent decision-making was associated with lower odds of reporting that condoms were used for contraception (AOR=.65; 99% CI=.57-.73) and higher odds that they were used for the prevention of STIs (AOR=1.44; 99% CI=1.28-1.61). A third significant finding pertained to always using condoms during menses; this was less likely among those indicating independent (female only) decision-making (AOR=.69; 99% CI=.62-.78). **Non-significant associations with two other outcomes occurred: protecting the partner against menstrual blood, and protecting themselves against semen.**

Conclusion: Findings from persons in 146 countries strongly support the hypothesis that those exercising independent decision-making over condom use during menses do so to avert STI transmission/acquisition. That only one-fifth of this global sample reported this type of independent decision-making suggests that empowerment-oriented (structural-level)

interventions may be advantageous for individuals who are the receptive partner in PVI that occurs during menses.

Introduction

There is consistent evidence that menstrual bleeding is a risk factor for STI/HIV acquisition as well as STI transmission.¹⁻⁶ Given the magnitude of the STI/HIV pandemic, increasing awareness that having penile-vaginal intercourse (PVI) with men during menstrual sex increases the risk of both STI/HIV acquisition and transmission is a public health imperative. Global studies have not assessed the extent of this awareness, and corresponding protective behaviors, among menstruating women. A primary protective behavior involves exercising power (if possible) to leverage condom use for PVI occurring during menses.

Studies have not assessed whether the receptive partner in condom-protected PVI during menses uses condoms to avert STIs or for other reasons (e.g., to avoid “messiness” or to avoid contact with menstrual blood). It is also important to establish if these receptive partners usually make the decision to use condoms independently of their partners, their partners make the decision, or they make the decision jointly with their partners. Given the gender imbalance of power that exists in many partnerships,^{7,8} receptive partners who independently make the decision to use condoms may be highly motivated by concerns related to STIs. Thus, we tested the hypothesis that receptive partners in PVI who exercise independent decision-making concerning condom use during menses do so to avert STI transmission/acquisition.

Methods

Procedure

The Kinsey Institute Condom Use Research Team (KI-CURT) and personnel at *Clue* (the industry-leading female health app) collaborated on questions to be included in a brief survey. Reflecting the app’s foundational feature (personal menstrual cycle tracking), the questionnaire intentionally focused on the role menstruation plays in condom use and sexual behavior. Programming of the survey, data collection and data management were done by *Clue*. Survey

participation was anonymous. Recruitment was via advertisement in Clue's newsletter, invitations to Clue's more than 10 million users worldwide, and notices in social media. Data were collected over 14 days from 29 November through 13 December 2017. The protocol was reviewed by Indiana University of Institutional Review Board for the Protection of Human Subjects and classified as exempt.

Study Sample

Eligibility criteria for these analyses were: age 14 years or older, having had at least one period in the past three months and not being currently pregnant, completing the entire questionnaire, and answering a final question about whether or not they had responded seriously to the questions. 113,823 respondents met our age criterion of 14 years or older. Of these, 105,828 (93.0%) reported one or more periods in the past three months and not being currently pregnant. Of these, 94,980 (89.7%) met criteria of completing and having responded seriously to the questions. Of these, we used an analytic sub-sample limited to 12,889 respondents indicating PVI during menses in the past 3 months and using condoms during menses at least once in this time period.

Measures

A brief web-based questionnaire was developed and translated from English into 9 additional languages. A three-month recall period was used. The five outcome measures (see Table 1) were assessed by items presented to respondents who indicated using condoms for PVI during menses. The measure of independent decision-making was assessed by a single item asking, "Who usually decides if a condom (internal or external) is going to be used for vaginal intercourse when you have your period?" Response options were "I do," "My partner," and "Both of us." Three control variables were selected: 1) young (defined as 14-20 years) versus

older (21+ years; no upper limit); 2) whether respondents reported any condomless PVI in the past three months, and 3) **a dichotomized measure of gender inequality assessed at the level of each country**. This latter measure was based on a composite measure developed by the United Nations Development Programme (<http://hdr.undp.org/en/composite/GII>). The measure is based on several country-level indices: maternal mortality ratio, adolescent birth rate, proportion of women in high-ranking political positions, proportion of persons 25 years of age or older with at least some secondary education, and degree of labor market participation.

Data Analysis

Bivariate tests of association between the measure of independent decision-making and the five outcomes were assessed using contingency table analyses. Subsequently, a series of five logistic regression models were constructed to calculate adjusted odds ratios for the effect of independent decision making on these five outcomes. With one exception, each of these models contained the three selected control variables (previously described). The exception pertained to the outcome of “I use condoms even when I don’t have my period.” For this outcome, the measure of any condomless sex during menses would be redundant with the outcomes. Finally, because of the high chance of Type I error occurring in such a large sample, significance was defined by P-values of .01 and by 99% confidence intervals.

Results

Characteristics of the Sample

Of the 12,889 participants in the analytic sub-sample, 20.2% indicated independent decision-making about condom use during menses. Further, 35.5% were 14-20 years of age, 55.1% resided in countries with relatively greater gender inequality, and 19.5% had engaged in condomless PVI in the past three months.

For the selected outcomes, 72.4% of respondents indicated condom use during menses for the reason of contraception, 50.6% for the reason of protecting the partner against menstrual blood, 45.1% for protecting themselves against semen, 42.0% for protection against STIs, and 57.4% indicated always using condoms regardless of menses.

Bivariate Findings

Table 1 displays the bivariate associations between the measure of independent decision-making and the five selected study outcomes. As shown, independent decision-making was significantly related to three of the five reasons for using condoms during menses: 1) for contraception, 2) to protect against STIs, and 3) because “I always use condoms when I have my period.”

Multivariate Findings

Table 2 displays the adjusted odds ratios indicating the effect of independent decision making on the five outcomes. As shown, independent decision-making was associated with lower odds of indicating that condoms were used for contraception and higher odds that they were used for the prevention of STIs. A third significant finding pertained to always using condoms during menses; this was less likely among those indicating independent decision-making.

Discussion

The three multivariate findings provide a coherent “story” regarding the role of personal independent decision making in using condoms during menses to protect against STIs. Respondents indicating that they made the decision to use condoms independently from their partner were 44% more likely to report their reason for using condoms was to avert STI transmission. This group was 35% less likely to report they used condoms “for contraception”

and 31% less likely to report always using condoms. This third association suggests an awareness of heightened STI risk during menses, among those who exercised independent decision-making, in that condoms are not a routine part of sex for these respondents. Further support was provided by the null finding relative to semen exposure; this outcome suggests that it is STI risk rather than pregnancy that motivates those who independently decide to use condoms during menses.

Limitations

Findings are mainly limited to the population of Clue app users, a population largely using smart phones, computers, and having service plans (perhaps indicating greater economic status). Further, the index of gender inequality is only a proxy measure of this highly complex construct and thus precision on this variable may be lacking. Findings are also limited by the validity of respondents' self-reports **and by the assessment of who made the decisions to use condoms. For instance, joint decision-making may have been the selected response for someone who simply agreed/acquiesced with a partner's expressed desire to use condoms; thereby creating a possible misclassification bias.** Finally, the wording for the outcome pertaining to STI protection precludes knowing whether respondents were concerned about acquisition, transmission, or both.

Conclusion

Findings from persons in 146 countries strongly support the hypothesis that those exercising independent decision-making over condom use during menses do so largely to avert STI transmission/acquisition. That only one-fifth of this global sample reported this type of independent decision-making suggests that empowerment-oriented (structural-level) interventions may be advantageous for individuals who are the receptive partner in PVI that

occurs during menses. **As is evidenced by past studies, couples-based intervention approaches may also be empowering relative to condom use for PVI.⁹⁻¹²**

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Table 1. Bivariate Associations Between the Assessed Measure of Independent Decision Making and the Five Selected Outcomes

<u>Outcome Measure</u>	<u>% with partner input</u>	<u>% without partner input</u>	<u>P</u>
	(i.e., dependent decisions)	(i.e., independent decisions)	
Used condoms during menses:			
For contraception	74.4	64.4	<.0001
To protect against your partner's blood	50.2	52.2	.07
To protect against semen exposure	45.2	44.9	.77
To protect against STIs	40.6	47.7	<.001
I always use condom during menses	59.2	50.3	<.001

Table 2. Adjusted Odds Ratios (AOR) for the Adjusted Influence of Independent Decision-Making on Five Selected Outcomes

Used condoms during menses: For contraception	AOR	99% CI
Younger age	.94	.84-1.05
Gender inequality	.90	.81-1.00
Any condomless sex (past 90 days)	.44	.39-.50
Dependent decision making re: condoms	.65	.57-.73
To protect your partner against blood		
Younger age	1.82	1.65-2.01
Gender inequality	1.10	1.00-1.21
Any condomless sex (past 90 days)	.44	.39-.50
Dependent decision making re: condoms	1.12	1.00-1.26
To protect against semen exposure		
Younger age	1.90	1.72-2.09
Gender inequality	1.29	1.17-1.42
Any condomless sex (past 90 days)	.54	.48-.61
Dependent decision making re: condoms	1.05	.93-1.18
To protect against STIs		
Younger age	1.37	1.24-1.51
Gender inequality	1.17	1.06-1.28
Any condomless sex (past 90 days)	.48	.42-.54
Dependent decision making re: condoms	1.44	1.28-1.61

“I Always use condoms during menses”

Younger age	.87	.79-.96
Gender inequality	.94	.86-1.04
Dependent decision making re: condoms	.69	.62-.78
