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“The Power of Love": The Role of Sexual Communal Motivations and Relationship Power in Sexual Risk Taking

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"THE POWER OF LOVE": THE ROLE OF SEXUAL COMMUNAL MOTIVATIONS AND RELATIONSHIP POWER IN SEXUAL RISK TAKING

by

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Abstract

College-age students are an at-risk population for an unplanned pregnancy. Current sexual health interventions focus on methods of preventing pregnancy but fail to address communal motivations (being oriented towards the needs of others) which are important in relationships. Current interventions are long and require an increased attention span which is less effective today because the current generation of adolescents has a decreased attention span. The present study develops a WISE sexual health intervention (a simple yet targeted intervention) that incorporates sexual communal motivations to reduce unplanned pregnancy in college-age students. It was hypothesized that participants will have increased condom use intentions and future condom use behaviors in the experimental condition compared to the control condition. Relationship power (RP) was hypothesized to moderate sexual communal motivations, and influence condom use intentions and future condom use behavior. Participants with high RP were also hypothesized to have a significant increase in condom use intention and future condom use behavior in the experimental condition compared to the control condition. Participants watched a short sexual health education video followed by a reflection task where participants reflected on the material presented in the video (control) or applied the material to their life (experimental). Although preliminary results suggest no difference between the control and experimental condition in predicting condom use motivations and condom use intentions, exploratory findings found being other-oriented through communal motivations was influential regardless of condition. The present findings have implications for developing an impactful intervention to address unplanned pregnancy.

Keywords: Communal Motivations, WISE Intervention, Unplanned Pregnancy, Sexual Health

"The Power of Love": The Role of Sexual Communal Motivations and Relationship Power in Sexual Risk-Taking

College is a challenging time for many, but it can be especially challenging when an unexpected pregnancy arises. College-age students are a high-risk population for unintended pregnancy with women ages 18-19 accounting for over 70% of teenage pregnancies in the United States (Kost & Arpaia, 2013). One in four college women will experience pregnancy before the age of 20 (The National Campaign to Prevent Teen and Unplanned Pregnancy, 2015). After becoming pregnant many women withdraw from college; in fact, 61% of women who unintentionally become pregnant during college will not finish their degree (The National Campaign to Prevent Teen and Unplanned Pregnancy, 2015; Preventing Unplanned Pregnancy and Completing College, 2014). Structured interventions that help reduce unintended pregnancies are needed. Currently interventions such as 'Be Proud! Be Responsible! Be Protective!' and 'Love Notes' provide sexual education targeted towards adolescents in high school and those entering college (Evidence-Based TTP Programs, 2017). However, these interventions fail to account for the communal (other-oriented) nature of close relationships. Condom use behavior is a sexual behavior influenced by communal motivations (Rooney et al., in press) and contributes to relationship satisfaction (Muise & Impett, 2015). The current project will combine an evidence-based intervention with the communal nature of close relationships to create a pregnancy prevention intervention. Furthermore, since close relationships are heavily influenced by relationship power (RP), the ability to influence another individual's behavior in a relationship, the current project will also examine how RP and thinking about how sexual behavior might affect one's partner (sexual communal motivations) influences the motivation to engage in safe sex behaviors in the future.

Social Influences and Communal Motivations

Humans are social creatures who thrive on frequent, positive interactions with others (Baumeister & Leary, 1995). Thus, it is important to consider how communion and communal motivations (acknowledging and providing to another individual without the expectation of reciprocity; Clark & Mills, 2012) influence sexual health. In general, communal motivations are important in social situations in that they facilitate prosocial behavior in a romantic relationship (Li & Hui, 2019). Individuals who are communally motivated are more attune to meet their partners' needs and engage in prosocial behavior that will benefit their partner which ultimately helps to build and maintain a relationship long term (Li & Hui, 2019). Individuals in a relationship can express different levels of communal motivation towards their partner. These levels, known as communal strengths, develop a mutual understanding of each partner's needs and beliefs (i.e., recognizing if their partner needs support in the future) and facilitates trust (Mills et al., 2004; Kogan et al. 2010). Individuals who are communally motivated seek to be empathetic and responsive towards their partner and work toward improving the relationship as opposed to being neglectful and distant (Pusch, et al., 2020). Not surprisingly this not only benefits the relationship overall but also benefits the communally motivated individual. Partners who were communally motivated not only engaged in secure close relationships but also had increased affect and self-esteem (Hirsch & Clark, 2019).

Interestingly these communal motivations are not restricted to a partner’s romantic needs, but also towards their sexual needs. Sexual communal motivations are mutual responses towards a partner’s sexual needs and beliefs (Muise & Impett, 2015; Muise, et al., 2013). Individuals who are sexually communally motivated often have partners who understand the importance of sexual communication in the relationship (Muise & Impett, 2015). There is also not only a benefit to

one's partner by being communally motivated but also a personal benefit to the communally motivated individual. Individuals in a long-term relationship (10 years or more) experience increased sexual communal motivations in their relationship and report increased sexual desire and sexual pleasure (Muise et al., 2016). Also, individuals who report higher sexual communal motivations report increased intimacy and are more attuned to their partners' relationship goals (Muise et al., 2016). Overall, communal motivations are not restricted to romantic needs but also translate to individuals' sexual needs as well. Sexual communal motivations have even extended towards birth control and condom use with increased condom use intentions and future condom use behavior being associated with being sexually communally motivated toward one's partner (Rooney et al., in press). As humans' need to interact with others is important for intrapersonal relationships, interventions focused on sexual communal motivations may enhance the effectiveness of sexual health educational material.

Current Pregnancy Prevention Interventions

Current pregnancy prevention interventions focus on key components of sexual education such as frequency of sexual activity and contraception use (Evidence-Based TTP Programs, 2017). For instance, 'The National Campaign to Prevent Teen and Unplanned Pregnancy' developed a three-lesson (each lesson takes approximately 45 minutes to complete) online program to provide sexual health information to college students ("Preventing Unplanned Pregnancy and Completing College"). In this intervention, researchers educated students about safe sexual practices such as using condoms and other birth control through interactive modules. Following the completion of the program, individuals reported increased knowledge about sexual health, as well as increased positive views related to using birth control. While there was a change between the pretest and posttest, the overall impact of the intervention was still relatively

small (ranging from .00 to .22 with most effect sizes under .06; Antonishak & Connolly, 2014). A small effect size is problematic as participants are investing over two hours to complete the sexual health intervention which has a small influence on preventing unplanned pregnancy. Given the length of the multiple interactive components, this intervention might be less effective for the current generation of adolescents because of decreased attention span as a result of increased mobile technology use (Wilmer et al., 2017). The current intervention will account for the decreased attention spans of the current generation while incorporating communal motivations.

The proposed intervention will build upon the previous finding of increased sexual knowledge found in the previous intervention while improving upon limitations related to program length through an intervention that is shorter yet meaningful. WISE interventions are simple, powerful, and short interventions designed to target psychological features, such as intentions and motivations, to shape behaviors (Walton, 2014). WISE interventions act through targeting behavior of interest through a simple yet powerful methodology (Walton, 2014). WISE interventions often yield an increased effect size in pretest-posttest experiments compared to traditional interventions. For example, an STD screening and condom use intervention administered by Garcia-Retamero & Cokely (2011) yielded a medium to large effect size, d = 0.73, in their intervention based on positive and negative frames of health information. In another example of a WISE intervention, students briefly reflected on and applied scientific concepts they learned in class to their daily lives through a series of structured assignments throughout a course. Compared to the non-reflection condition, students who reflected on and applied the scientific concepts to daily life experienced an increased interest in science and made more personal connections to the material, d = 1.55 (Hulleman & Harackewicz, 2009). In yet

another WISE intervention, perspective taking in marital couples was examined through multiple 7-minute perspectives taking exercises over the course of a year. The study suggested increased perspective-taking in couples' years after the experiment compared to the control condition, *d* =0.52 (Finkle, et al., 2013). Indeed, although WISE interventions are short, often an hour or less per session, they are impactful towards manipulating behavior (Walton, 2014; Walton & Cohen, 2011).

The proposed intervention uses the short WISE intervention format as a method for participants to reflect upon the information presented from the pregnancy prevention video while applying the information to their current relationship. However, since relationships are highly impacted by the power individuals have in their current relationship, it is also important to examine how RP may influence communal motivations during the reflection activity.

RP

RP is an important component in the structure and function of a relationship in that it dictates the control an individual has in decision making in a relationship (Pulwitzer, et al., 2000). RP can be categorized as low power (one partner has less influence in making decisions), equal power (both partners have an influence in making decisions), and high power (one partner has more influence in making decisions) (Pulwitzer, et al., 2000). Equal RP is beneficial for partners when negotiating sexual decisions. For example, although women usually have lower RP, when both partners have equal RP there are increases in condom use implementations (Bruhin, 2003) as well as increased actual condom use behavior (Harvey & Bird, 2003). This suggests RP is a critical component of condom use implementation and actual condom use behaviors. The importance of discussion about condom use intentions and actual condom use

behavior is crucial to communication about safe sexual practices among individuals. These components, however, have not been combined and applied to communal motivations.

The Current Study

The current study will manipulate sexual communal motivations using WISE interventions through one brief sexual health intervention. Specifically, participants will reflect on sexual health material (control) or apply the sexual health material to their current relationship (experimental). Participants' RP is expected to moderate sexual communal motivations. The following hypotheses were tested:

- H_1: Participants will have a significant increase in condom use intentions and future condom use behaviors in the experimental condition compared to the control condition.
- H_2: Participants with high RP (RP) will have a significant increase in condom use intention and future condom use behavior in the experimental compared to the control condition.
- H_3: Participants with low RP will not differ in condom use intentions and future condom use behavior in the experimental compared to the control condition.

Methods

Preregistration

This study was preregistered through AsPredicted (https://aspredicted.org/blind.php?x=7wc8c4). A power analysis determined that 212 participants were needed to find a small effect size (d =0.106) at .80 power and 274 participants were needed to find a small effect size (d =0.106) at .90 power.

Participants and Design

There were a total of 262 participants (223 women, 37 men, 4 other; ages 18-42, median age = 20.82; 111 single, 23 in a Casual Relationship, 112 in a committed relationship, 4 engaged, 4 married; 155 White, 32 Latinx, 33 Black, 18 Asian, 26 Other) recruited for this study through the undergraduate psychology participant pool during Fall 2019 in exchange for partial course credit. Due to data errors (1 participant did not follow instructions, 1 participant had an incomplete data response which could not be analyzed, and 1 participant took the study multiple times), 3 participants were not included in the analyses (See Table 1 for the breakdown of participants demographics by condition). The study used a quasi-experimental design. This study was approved by the University of North Florida Institutional Review Board, IRB approval #: 1239820-8.

Procedure

Participants sat at one of two computers in the lab with a pen and a reflection task activity sheet. The computers were across from one another with participants seated back to back with dividers separating the participants from the research assistant (RA). After consenting to participate, participants completed the RP scale. Next, the participants watched a sexual health video while wearing headphones and then completed a reflection activity. Following the completion of the reflection task, participants completed a sexual communal motivation, a condom use intention, a motivation to use condoms, a sexual action planning, and a sexual risk-taking behavior measure. Finally, participants completed demographic questions and were debriefed.

Table 1. *Participant Demographics Based on Condition*

	Gender (%)			Age			Relationship Status (%)			Race/Ethnicity (%)				
	Male	Female	Other	Median	SD	n	Single	In a Casual Relationship	In a Committed Relationship/Married	White	Latinx	Black	Asian	Other
Control	11.6	85.4	3.0	31.12	3.71	129	46.2	8.5	44.5	60.9	10.8	6.4	8.5	13.4
Experimental	16.4	82.5	1.1	20.53	3.81	134	38.1	9.00	52.9	55.1	13.3	16.8	6.5	20.3

Material

Moderator Variable

Participants completed an RP measure consisting of 8 questions on 5-point Likert scales (1: "Your Partner", 3: "Both of you", 5: "You") related to power dynamics (Pulerwitz, Gortmaker, & DeJong, 2000). Questions were as follows: "Who usually has more say about how often you see one another?"; "Who usually has more say about whether you have sex?"; "Who usually has more say about what you do together?"; "Who usually has more say about whose friends to go out with?"; "Who usually has more say about when you talk about serious things?"; "In general, who do you think has more power in your relationship?"; "Who usually has more say about whether you use condoms?"; "Who usually has more say about what types of sexual acts you do?". Responses were averaged to create an RP composite (α=0.608).

Independent Variable

Participants watched a 5-minute video, "Keep it Simple", developed by Cicatelli Associates Inc., Healthy Teen Network, and the National Campaign to Prevent Teen & Unplanned Pregnancy (2014) prior to the reflection activity. The video explained safe sexual options such as condoms, birth control including "the pill" and intrauterine device "IUD," and STD testing for both males and females.

After watching the video, participants completed a reflection task. The reflection task (adapted from Hulleman & Harackiewicz, 2009) was composed of 2 parts: "Part A" where participants identified the topic of the video they watched and "Part B" where participants reflected on the video material related to condom use. In Part A, participants were asked to pick a topic from the video. For example, "the topic discussed in the video was birth control." In Part

B participants were instructed to write at least 5 sentences about the topic of the video, draw a sketch about the video with a description, or draw a diagram about the video with a description. In the Part B control condition participants were asked to "Summarize main parts of this topic/concept" and were given the example response:

> Safe sex practices involve using forms of protections such as intrauterine devices (IUD), condoms, and diaphragms. Condoms, as well as the other forms of protection, reduce the chance of getting someone pregnant. However, only condoms reduce getting someone pregnant as well as reduce the risk of STIs/STDs. These protection methods may be used together, for example, IUD and condoms to further reduce the chance of pregnancy as well as reduce the chance of STI's/STD's. This is because all forms of protection are not 100% effective against preventing pregnancy or STI's/STD's.

However, in the Part B experimental condition participants were asked to "Apply this topic/concept to your life, or to the life of someone you know. How might the information be useful to you, or a friend/relative, in daily life? How does learning about this topic apply to your future plans?" and were given the sample response:

> This applies to my life because I do not want to get my partner pregnant because we are both currently in college and do not have the time or resources to raise a child. We could use safe sex practices and protection such as intrauterine devices (IUD), condoms, or diaphragms. Condoms, as well as the other forms of protection, reduce the chance of getting someone pregnant. However, only condoms reduce getting someone pregnant as well as reduce the risk of STIs/STDs. I think using condoms would work best for my relationship because they are relatively cheap and can reduce STIs and pregnancy at the same time. We might use these protection methods together, for example, IUD and

> condoms to further reduce the chance of pregnancy as well as reduce the chance of STI's/STD's. I understand that these methods are not 100% effective but talking to my partner about the options available to protect ourselves is important. I do not want to get my partner pregnant unexpectedly, and neither one of us wants an STI/STD.

Participants were asked to spend at least two minutes reflecting on the video and the task and were given up to 10 minutes to complete the reflection task. Participants were asked to raise their hand when they completed the task and to wait until the other participant finished. When both participants had completed the reflection task, participants completed the remainder of the measures.

Past Sexual Behavior

Sexual Risk-Taking. Participants completed 10 questions (Centers for Disease Control, 2019) that were split into the following sexual risk behaviors subtypes: 1) “Have you ever had sexual intercourse” by responding 1: “Yes” or 2: “No”; 2) “Did you drink alcohol or use drugs before you had sexual intercourse the last time” by responding 1: “I have never had sexual intercourse”; 2: “Yes”; 3: “No”); 3) “The last time you had sexual intercourse, did you or your partner use a condom?” by responding 1: “Yes”, 2: “No”, 3: “Unsure”; 4) “How old were you when you had sexual intercourse for the first time?” by responding 1: “I have never had sexual intercourse” to 8: “17 years old”; 5) “Have you ever been tested for HIV, the virus that causes AIDS? (Do not count tests done if you donated blood)” by responding 1: “Yes”, 2: “No”, 3: “Unsure”; 6) “During the past 12 months, have you been tested for a sexually transmitted disease (STD) other than HIV, such as chlamydia or gonorrhea?” by responding 1: “Yes”, 2: “No”, 3: “Unsure”; 7) “During your life, with whom have you had sexual contact?” by responding 1: “I have never had sexual intercourse”, 2: “Females”, 3: “Males”, 4: “Females and Males”; 8)

"During the past 3 months, with how many people did you have sexual intercourse?" by responding 1: "I have never had sexual intercourse" to 7: "6 or more people"; 9) "During your life, with how many people did you have sexual intercourse?" by responding 1: "I have never had sexual intercourse" to 7: "6 or more people"; 10) "The last time you had sexual intercourse, what one method did you or your partner use to prevent pregnancy? (Select only one response.)" by responding 1: No method was used to prevent pregnancy" to 7: "Unsure".

Sexual Risk Prevention. Participants responded to 5 questions (one on a 2-point Likert scale, 3 on 5-point Likert scales) (Centers for Disease Control [CDC], 2019) related to past sexual risk prevention behaviors that were split into the following subtypes: 1) "I had sex within the last month" and "I had sex with someone of the opposite gender" by responding 1: "Yes", 2: "No" which were averaged to create a sexual frequency composite (α=.690); 2) "If you have sex in the next three months, how likely is it that you will have sex without using any method of birth control?" by responding 1: "Not at all likely" to 5: "Extremely likely"; 3) "In the last month, I used a method of birth control." by responding 1: "Not at all Likely" to 5: "Extremely Likely".

Sexual Risk-Taking. Participants answered seven questions (developed by Turchik & Garske, 2008) related to past sexual risk-taking behavior. The measure was split into the following subcategories:

***Times and Number of Partners*.** Participants answered five questions related to the number of times and number of partners they have had sex with. Questions were as follows: **"**How many times have you had sex with someone you don't know well or just met?", "How many times (that you know of) have you had sex with someone who has had many sexual partners", "How many partners (that you know of) have you had sex with who had been sexually active before you were with them but had not been tested for STIs/HIV?", "How many partners

have you had sex with that you didn't trust?", "How many times (that you know of) have you had sex with someone who was also engaging in sex with others during the same time period" by responding 1: "0 times" to 5: "7+ times which were averaged to create a times and number of partners engaging risky sex composite (α=.850).

Number of Times Engaging in Risky Vaginal Sex. Participants responded to a question related to the number of times they engaged in risky vaginal sex such as vaginal sex without a condom. The question was as follows: "How many times have you had vaginal sex without a condom?" by responding 1: "0 times" to 5: "7+ times".

Number of Times Engaging in Risky Anal Sex. Participants answered one question in which participants responded to "How many times have you had anal sex without a condom?" by responding 1: "0 times" to 5: "7+ times."

Future Sexual Behavior

Sexual Communal Motivations. Participants answered 5 questions on 7-point Likert scales (1: "Not important/Not far/Not happy" to 7: "Extremely important/Very far/ Extremely happy") measuring participants' communal motivations related to sexual needs and beliefs (modified from Mills et al., 2004; Muise & Impett, 2016). Questions were as follows: "How important is it for you to help your partner to achieve their professional goals by helping them to avoid getting pregnant or getting you pregnant?"; "How important is it for you to help your partner to achieve their educational goals by helping them to avoid getting pregnant or getting you pregnant?"; "How important is it for you to help your partner to achieve their relationship goals by helping them to avoid getting pregnant or getting you pregnant?"; "How far would you be willing to go to prevent your partner from becoming pregnant or getting you pregnant?"; "How happy do you feel when doing something that helps prevent your partner from becoming

pregnant or getting you pregnant?". Responses were averaged to create a sexual communal motivations composite (α=0.856).

Condom Use Motivations. Participants answered 5 questions on 7-point Likert scales (1: "Not very likely/Not at all positive/ Not willing at all" to 7: "Very willing/Extremely positive/Very likely") related to their motivations to use condoms in the future (modified from Brown et al., 2015). Questions were as follows: What is your impression about condoms?"; "How willing would you be to ask your partner to use condoms?"; "What is your impression about what you have heard from friends/peers about condoms?"; "How willing would you be to use condoms in the future?"; "How willing would you be to ask your partner to use condoms?". Responses were averaged to create a condom use motivations composite (α=0.805).

Condom Use Intentions. Participants answered 2 questions on 7-point Likert scales (1: "Very unlikely" to 7: "Very likely") related to participants willing to use condoms in the future (Cornelius & Kershaw, 2017). Questions were as follows: "If you were going to have sex in the next 3 months, how likely or unlikely is it that every time you have sex you will use a condom even if your partner does NOT want to?"; "In the next 3 months, how likely or unlikely is it that every time you have sex you will actually use a condom?". Responses were averaged to create a condom use intentions composite (α=0.918).

Sexual Action Planning. Participants completed 3 questions on 7-point Likert scales (1: "Strongly Disagree" to 7: "Strongly Agree") (modified from Carvalho & Alvarez, 2015) related to creating a plan to use a condom when having sex. Questions were as follows: I have concrete plans on "Where I always use a condom (at home, at parties, in the car)"; "When to always use a condom (when I have sex, vaginal and/or anal intercourse); "How I always use a condom (know

where to buy them, carry them around with me).” Responses were averaged to create a sexual action planning composite (α=0.864).

Sexual Risk Prevention. Participants answered 9 questions on 5-point Likert scales (1: “Not at all important/Never/Not at all comfortable” to 5: “Extremely Important/Always/Very comfortable”; CDC, 2019). The overall scale was broken down into the following subscales:

Importance of Avoiding Unplanned Pregnancy. Participants answered two questions on 5-point Likert scales (1: “Not at all important” to 5: “Extremely Important”) pertaining to avoiding an unplanned pregnancy. The questions were as follows: “Thinking about your life right now, how important is it to you to avoid becoming or getting someone pregnant?”; “Let’s say you either got pregnant or got someone pregnant. How difficult do you think a pregnancy (either your own or your partners) would make it for you to achieve your educational goals?". Responses were averaged to create a importance of protection composite (α=0.682).

Talk to a Doctor about Birth Control. Participants answered one question on a 5-point Likert scale (1: "Not at all Likely" to 5: "Extremely Likely"). The question was as follows: "How likely are you to talk to your doctor, healthcare provider, and/or nurse practitioner about birth control?"

Talk to Partner about Birth Control. Participants answered one question on a 5-point Likert scale (1: "Not at all comfortable" to 5: "Extremely comfortable"). The question was as follows: "How comfortable are you talking about birth control with your sexual partner or potential partner?"

Plans to Prevent Pregnancy. Participants answered five questions on 7-point Likert scales (1: “Strongly Disagree” to 7: “Strongly Agree”). Questions were as follows: “I have a clear plan for preventing an unplanned pregnancy for myself or my partner.”; “I am committed to

avoiding an unplanned pregnancy for myself or my partner."; "It would get in the way of my plans for work or school if either I got pregnant or got someone else pregnant and had a baby now."; "It is unrealistic to expect a person to use birth control every time he or she has sex."; "It is unlikely that I will find a birth control method that fits my needs." Responses were averaged together to create a plan to prevent pregnancy composite (α=.680).

Results

First, I conducted a one-way analysis of variance (ANOVA) to examine whether participants differed by condition (control vs. experimental) in their past sexual behavior (see Table 2). Next, I used a one-way ANOVA with the condition as a between-subjects variable to examine whether the manipulation of communal motivation was effective (see Table 2). Next, I conducted regression analyses to examine whether condition, RP, and their interaction predicted future sexual behavior (see Table 3). Lastly, exploratory regression analyses were performed on future sexual behavior using condition, sexual communal motivations, RP, and their interactions as predictors (see Table 3).

Tests for heteroscedasticity showed a negative skew in sexual communal motivations (Z = -3.78) which was adjusted by raising the variable to the cubic power (Z = -1.13); all regression analyses that used sexual communal motivations as a predictor used the adjusted sexual communal motivation measure.

For past behavior, I reported all main effects. For the preliminary analyses of future behavior, all main effects and interactions were reported. For exploratory analyses, all significant main effects and interactions were reported.

Table 2. *Predictor Variables, Past Behavior, and Future Behavior Means by Condition*

	Sexual Communal Motivations				RP			
	Mean	***SD***	***Range***	***n***	***Mean***	***SD***	***Range***	***n***
Control	4.79	0.61	1.00-5.20	130	3.14	0.32	2.38-4.13	129
Experimental	4.88	0.59	1.00-5.20	134	3.16	0.39	2.20-5.00	134
Overall	4.83	0.60	1.00-5.20	264	3.15	0.36	2.20-5.00	263

	Age of First Having Sex				Alcohol/Drug Use				Ever Had Sex			
	Mean	***SD***	***Range***	***n***	***Mean***	***SD***	***Range***	***n***	***Mean***	***SD***	***Range***	***n***
Control	1.44	1.27	0-7	130	0.93	0.61	0-2	130	0.77	0.42	0-6	130
Experimental	1.43	1.27	0-7	134	1.02	0.6	0-2	133	0.83	0.37	0-6	133
Overall	1.44	1.21	0-7	264	0.98	0.61	0-2	263	0.80	0.4	0-6	263

	Tested for other STDs				Type of Sexual Partner				Method of Pregnancy Prevention			
	Mean	***SD***	***Range***	***n***	***Mean***	***SD***	***Range***	***n***	***Mean***	***SD***	***Range***	***n***
Control	1.43	0.65	0-2	129	3.87	1.42	1-5	129	3.85	1.87	0-6	123
Experimental	1.63	0.50	0-2	134	3.95	1.3	1-5	133	4.01	1.76	0-6	134
Overall	1.53	0.58	0-2	263	3.91	1.36	1-5	262	3.94	1.81	0-6	257

	Sexual Frequency				Not Using Birth Control in Last 3 Months				Used Birth Control in Last Month			
	Mean	***SD***	***Range***	***n***	***Mean***	***SD***	***Range***	***n***	***Mean***	***SD***	***Range***	***n***
Control	1.4	0.43	1-2	130	1.61	1.2	1-5	128	3.76	1.74	1-5	128
Experimental	1.34	0.4	1-2	134	1.68	1.29	1-5	134	3.85	1.73	1-5	133
Overall	1.36	1.19	1-2	264	1.65	1.24	1-5	262	3.80	1.74	1-5	261

	Used Condom Last Time Having Sex				Times Engaged in Risky Vaginal Sex				Times Engaged in Risky Anal Sex			
	Mean	***SD***	***Range***	***n***	***Mean***	***SD***	***Range***	***n***	***Mean***	***SD***	***Range***	***n***
Control	1.18	0.43	0-2	129	2.77	1.71	1-5	128	1.41	1.02	1-5	128
Experimental	1.25	0.72	0-2	134	2.75	1.78	1-5	133	1.28	0.77	1-5	134
Overall	1.21	0.76	0-2	262	2.77	1.74	1-5	261	1.34	0.90	1-5	262

	Number of Partners in Past 3 Months				Number of Partners in Lifetime				Tested for HIV/AIDs			
	Mean	***SD***	***Range***	***n***	***Mean***	***SD***	***Range***	***n***	***Mean***	***SD***	***Range***	***n***
Control	1.43	0.94	0-4	130	2.91	2.41	0-6	138	1.41	0.65	0-2	129
Experimental	1.77	1.13	0-6	134	2.87	0.93	0-6	133	1.54	0.50	0-2	134
Overall	1.61	1.05	0-6	262	2.89	2.32	0-6	261	1.48	0.62	0-2	263

	Condom Use Motivations				Condom Use Intentions				Sexual Action Planning			
	Mean	***SD***	***Range***	***n***	***Mean***	***SD***	***Range***	***n***	***Mean***	***SD***	***Range***	***n***
Control	5.51	1.16	1.60-7.0	130	5.21	2.10	1-7	130	5.28	1.57	1-7	130
Experimental	5.60	1.22	1.40-7.0	134	5.07	2.12	1-7	134	5.43	1.64	1-7	134
Overall	5.60	1.19	1.40-7.0	264	5.13	2.11	1-7	264	5.35	1.60	1-7	264

	Plans to Prevent Pregnancy				Talking to Doctor about Birth Control				Talking to Partner about Birth Control			
	Mean	***SD***	***Range***	***n***	***Mean***	***SD***	***Range***	***n***	***Mean***	***SD***	***Range***	***n***
Control	6.00	0.92	2.20-7.0	130	3.87	1.42	1-5	130	4.43	0.81	2-5	130
Experimental	6.24	0.74	2.20-7.0	134	3.95	1.30	1-5	134	4.58	0.64	2-5	134
Overall	6.12	0.84	2.20-7.0	264	3.91	1.36	1-5	264	4.51	0.73	2-5	264

	Importance of Protection			
	Mean	***SD***	***Range***	***n***
Control	4.40	0.87	1-5	130
Experimental	4.62	0.58	1-5	134
Overall	4.51	0.75	1-5	264

Table 3. *Regression Tables for Preliminary Analyses and Exploratory Analyses*

	Condom Use Motivations (R^2 = .004)				Condom Use Intentions (R^2 = .009)			
	β	*SE*	*t*	*p*	β	*SE*	*t*	*p*
Constant	5.51	0.103	53.61	<.0001	5.20	0.187	27.79	<.0001
Condition	0.089	0.148	0.60	0.548	-0.14	0.263	-0.523	0.60
RP	0.22	0.368	0.84	0.403	0.43	0.571	0.749	0.45
RP x Condition	-0.015	0.433	-0.34	0.731	0.18	0.750	0.24	0.81

	Condom Use Motivations (R^2 = .123)				Condom Use Intentions (R^2 = .118)				Action Planning (R^2 = .133)			
	β	*SE*	*t*	*p*	β	*SE*	*t*	*p*	β	*SE*	*t*	*p*
Constant	4.63	0.355	13.02	<.0001	3.33	0.566	5.90	<.0001	4.14	0.434	9.53	<.0001
Condition	-0.40	0.538	-0.74	0.463	-0.213	0.907	-0.24	0.814	-0.78	0.773	-1.01	0.313
SCM	0.0003	0.0001	2.74	0.0065	0.0007	0.0002	3.59	0.0004	0.0004	0.0001	2.89	0.004
RP	0.81	0.886	0.91	0.361	2.02	1.480	1.38	0.172	-0.30	1.420	-0.22	0.830
RP x Condition	-1.37	1.013	-1.35	0.179	-2.24	1.770	-1.27	0.206	-0.031	1.610	-0.019	0.984
SCM x Condition	0.0001	0.0002	0.84	0.403	0.00	0.0003	-0.06	0.949	0.0003	0.0002	1.15	0.251
RP x SCM	-0.0002	0.0003	-0.69	0.491	-0.0006	0.0005	-1.10	0.272	0.0002	0.0005	0.43	0.667
SCM x Condition x RP	0.00055	0.0004	1.32	0.188	0.0009	0.0006	1.46	0.146	0.0001	0.0005	0.094	0.926

	Importance of Protection (R^2 = .247)				Talk to Doctor about Birth Control (R^2 = .132)				Talk to Partner about Birth Control (R^2 = .073)			
	β	*SE*	*t*	*p*	β	*SE*	*t*	*p*	β	*SE*	*t*	*p*
Constant	3.10	0.282	10.99	<.0001	2.48	0.362	6.68	<.0001	3.84	0.265	14.45	<.0001

Condition	1.06	0.379	2.80	0.006	0.56	0.559	1.00	0.317	0.64	0.344	1.87	0.062
SCM	0.0005	0.0001	5.11	<.0001	0.0005	0.0001	4.06	<.0001	0.0002	0.0001	2.55	0.011
RP	0.068	0.794	0.085	0.932	1.52	0.829	1.83	0.069	0.52	0.7490	0.69	0.489
RP x Condition	-0.055	0.909	-0.06	0.952	-2.83	1.140	-2.49	0.014	-0.81	1.540	-0.53	0.599
SCM x Condition	-0.0003	0.0001	-2.63	0.009	-0.0002	0.0002	-1.05	0.295	0.0002	0.0001	-1.69	0.092
RP x SCM	0.00	0.0003	-0.18	0.854	-0.0005	0.0003	-1.65	0.100	-0.0001	0.0003	-0.36	0.718
SCM x Condition x RP	0.0001	0.0003	0.21	0.836	0.001	0.0004	2.64	0.009	0.0003	0.0005	0.53	0.595

	Plans to Prevent Pregnancy (R^2 = .239)			
	β	*SE*	*t*	*p*
Constant	4.73	0.32	15.02	<.0001
Condition	0.58	0.46	1.26	0.208
SCM	0.0005	0.0001	4.61	<.0001
RP	0.59	1.060	0.55	0.581
RP x Condition	-0.11	1.340	-0.10	0.934
SCM x Condition	-0.0002	0.0001	-1.10	0.293
RP x SCM	-0.0002	0.0004	-0.60	0.558
SCM x Condition x RP	0.0001	0.0004	0.20	0.840

Differences in Past Behavior

Sexual Risk Behavior. Participants in the experimental condition reported having a higher number of sexual partners in the last three months compared to participants in the control condition, $F(1, 260) = 7.02$, $p = .001$, $d = 0.33$. Further, participants in the experimental condition were more likely to report having been tested for STDs other than HIV/AIDs than participants in the control condition, $F(1, 261) = 8.57$, $p = .004$, $d = 0.35$.

There was not an effect of condition for the age of first having sex, alcohol/drug use during sex, the method of pregnancy prevention used last time during sex, whether an individual had ever had sex, type of sexual partner (male, female or both), whether a condom use used last time during sex, number of sexual partners in during the lifetime, and being tested for HIV, Fs < 1.2, ps >.100, -0.20 < ds < 0.005.

Sexual Risk Prevention. There was not an effect of condition for using birth control in the last month, having sex without using birth control within the past three months, and the frequency a participant had sex, Fs < 3.4, ps > .07, -0.052 < ds < 0.23.

Sexual Risk-Taking. There was not an effect of condition for the number of times and number of partners a participant engaged in sex, the number of times a participant engaged in risky anal sex, and the number of times a participant engaged in risky vaginal sex, Fs < 1.2, ps > .271, ds < 0.136.

Discussion. The results suggest there was no difference between the control and experimental condition in terms of past behavior with the exception that participants in the experimental condition had a higher number of sexual partners in the last three months and a higher likelihood of being tested for STDs other than HIV/AIDs than participants in the control condition.

Manipulation Check

There was not a significant difference in sexual communal motivations between the control ($M = 4.79$, $SD = 0.61$) and experimental condition ($M = 4.88$, $SD = 0.59$), $F(1, 262) = 2.88$, $p = .091$, $d = 0.15$.

Preliminary Results for Future Behavior

Condom Use Motivations. The overall regression model was not significant, $F(3, 259) = .313$, $p = .816$, $R^2 = .004$. Participants' RP (low vs. high) did not influence participants' future condom use motivations, $b = .225$, $\beta = .067$, $t(259) = .691$, $p = .490$. Further, the condition participants were assigned to did not influence their future condom use motivations, $b = .089$, $\beta = .038$, $t(259) = .605$, $p = .546$. An interaction did not emerge between condition and RP, $b = -.149$, $\beta = -.034$, $t(259) = -.354$, $p = .724$.

Condom Use Intentions. The overall regression model was not significant, $F(3, 259) = .812$, $p = .488$, $R^2 = .009$. Participants' RP did not influence participants condom use intentions, $b = .428$, $\beta = .072$, $t(259) = .741$, $p = .459$, and condition (control vs. experimental) did not influence participants' condom use intentions, $b = -.138$, $\beta = -.033$, $t(259) = -.527$, $p = .599$. An interaction did not emerge between condition and RP, $b = .180$, $\beta = .023$, $t(259) = .241$, $p = .810$.

Discussion. The preliminary results suggest that the hypothesized relationship between condition and RP condom use motivations and condom use intentions did not emerge.

Exploratory Regressions of Future Sexual Behavior

Condom Use Motivations. The overall regression model was significant, $F(7, 255) = 5.12$, $p < .001$, $R^2 = .123$. As participants' communal motivations increased, their condom use motivations also increased, $b = .000$, $\beta = .263$, $t(255) = 3.29$, $p < .001$.

Condom Use Intentions. The overall regression model was significant, $F(7, 255) = 4.85$, $p < .001$, $R^2 = .117$. As participants' sexual communal motivations increased their condom use intentions also increased, $b = .001$, $\beta = .312$, $t(255) = 3.88$, $p < .001$.

Sexual Action Planning. The overall regression model was significant ($F(7, 255) = 5.61$, $p < .001$, $R^2 = .133$. As participants' sexual communal motivations increased, their sexual action planning also increased, $b = .000$, $\beta = .254$, $t(255) = 3.19$, $p = .002$.

Importance of Protection. The overall regression model was significant $F(7, 255) = 11.98$, $p < .001$, $R^2 = .247$. As participants' sexual communal motivations increased, their views of importance of protection also increased, $b = .000$, $\beta = .615$, $t(255) = 8.28$, $p < .001$. Additionally, participants in the experimental condition perceived protection to be more important compared to the control condition, $b = 1.06$, $\beta = .710$, $t(255) = 4.08$, $p < .001$. Finally, a condition × sexual communal motivations interaction emerged, $t(130) = 4.36$, $p < .001$. Participants' sexual communal motivations in the control condition, $b = .000$, $\beta = .550$, $t(126) = 7.36$, $p < .001$, and experimental condition, $b = .000$, $\beta = .248$, $t(128) = 2.82$, $p = .006$, predicted perceptions that protection was important.

Plans to Prevent Pregnancy. The overall regression model was significant, $F(7, 255) = 11.44$, $p < .001$, $R^2 = .239$. As participants sexual communal motivations increased, their plans to prevent pregnancy also increased, $b = .000$, $\beta = .540$, $t(255) = 7.24$, $p < .001$, $d = 0.29$. Additionally, participants in the experimental condition had increased plans to prevent pregnancy compared to the control condition, $b = .584$, $\beta = .349$, $t(255) = 1.99$, $p = .047$.

Talk to Doctor about Birth Control. The overall regression model was significant, $F(7, 253) = 5.51$, $p < .001$, $R^2 = .132$. As participants' sexual communal motivations increased, their future comfort in speaking with their doctor about birth control also increased, $b = .001$, $\beta =$

.361, $t(253) = 4.51$, $p < .001$, $d = 0.059$. A condition × RP × sexual communal motivations interaction emerged, $p = 0.002$. A significant sexual communal motivation × RP interaction emerged for the experimental condition, $p = .026$, but not the control condition, $p = .138$. For participants in the experimental condition who were high in RP, communal motivations were associated with increased likelihood of talking with their doctor about birth control, $b = .001$, $\beta = .589$, $t(50) = 5.17$, $p < .001$.

Talk to Partner about Birth Control. The overall regression model was significant, $F(7, 253) = 2.83$, $p < .01$, $R^2 = .073$. As participants sexual communal motivations increased, their comfort in talking to their partner about birth control also increased, $b = .000$, $\beta = .290$, $t(253) = 3.50$, $p < .001$. Participants in the experimental condition reported increased comfort in talking with their partner about birth control compared to the control condition, $b = .644$, $\beta = .440$, $t(253) = 2.28$, $p = .024$.

Discussion. The exploratory results suggest that sexual communal motivations predicted future safe sexual behavior. Participants in the experimental condition compared to the control condition were more likely to view protection as being important. Aligning with previous findings, sexual communal motivations predicted increased future condom use behavior. Finally, participants in the experimental condition who were high in RP, to the extent that they were highly communally motivated, were also more likely to talk to their doctor about birth control. These findings suggest the more sexually communally motivated you are the more likely you are to engage in future safe sexual behaviors regardless of condition. Furthermore, RP and experimental condition are important when discussing birth control use and why preventing pregnancy is important but not when individuals plan to use condoms in the future. This can be

attributed to RP facilitating the negotiation of birth control use and avoidance of unplanned pregnancy.

General Discussion

The current study examined how sexual communal motivations and RP influenced future condom use motivations and condom use intention using a sexual health intervention. It was hypothesized that participants would have a significant increase in condom use intentions and future condom use behaviors in the experimental condition compared to the control condition. The results do not support the hypothesis and suggest that participants in the experimental condition did not express increased condom use intentions and future condom behavior compared to the control condition. Second, it was hypothesized participants with high RP would have a significant increase in condom use intention and future condom use behavior in the experimental condition compared to the control condition. The results do not support this hypothesis and suggest participants in the experimental condition with high RP did not have increased condom use intentions and future condom use behavior. Finally, it was hypothesized participants with low RP would not differ in condom use intentions and future condom use behavior in the experimental compared to the control condition. The results suggest there was no difference in condom use motivations and condom use intentions between the control condition and experimental condition when participants had low RP.

Exploratory analyses suggest that sexual communal motivations did have a role in safe sexual behavior regardless of condition. Participants who were sexually communally motivated were more likely to indicate future condom use behavior (condom use motivations, condom use intentions, sexual action planning), and had plans to implement the use of birth control(talking to their doctor about birth control, talking to a partner about birth control, and importance of

protection). Furthermore, when participants in the experimental condition and had high RP, being communally motivated increased their likelihood of speaking to their doctor about birth control. This suggests that both RP and communal motivations are important determinants of whether a participant will talk to a doctor. My findings are consistent with previous findings that illustrate when individuals are communally motivated they have increase relationship satisfaction and relationship quality (Muise & Impett, 2016) as well as future condom use behavior (Rooney et al., in press).

The current study found that RP did not predict condom use motivations and intentions in the preliminary analyses, which is inconsistent with previous research which found that RP increased condom use negotiations in relationships (Bruhin, 2003). This contradiction in findings could be attributed to participants having an equal voice in negotiating condom use, such as both partners having an equal say in whether they use condoms. ~~As~~ a majority of participants in the current study reported having equal power between themselves and their partner in making relationship decisions. Perhaps possessing equal power in a relationship has a role in condom use negotiations and condom use behavior; both partners have the opportunity to express beliefs and concerns to reduce unplanned pregnancy and STIs through using condoms. The present study focused mainly on safe sexual practices related to preventing an unplanned pregnancy while Bruhin (2003) framed questions to be focused on condom use as it relates to HIV/AIDs. It is possible this framing could elicit a different response related to RP when presented in the scope of HIV/AIDs compared to an unplanned pregnancy.

Limitations and future directions. The video presented multiple methods of birth control; however, participants were prompted to reflect on condom use. Participants were presented with multiple birth control options through the sexual health video; however,

participants were prompted to reflect solely on condom use. Restricting the birth control options available for participants to reflect upon could influence how they create connections with the material and their relationship, especially if participants connected more with a different form of birth control used in their relationship. Rephrasing the prompt presented in Part B of the reflection activity from “reflect on the video material related to condom use” to “reflect on the video material related to birth control” could provide more birth control options for participants to reflect upon and does not restrict participants to form a response solely around condom use. Due to time constraints, participants were only allowed to watch the video once and were not told they could take notes during the video. Allowing multiple views of the video and note-taking can increase the amount of content a participant has to complete the reflection activity and may help participants to incorporate more information from the video into their reflection.

A future direction for this study would be to examine barriers to condom use in participants. Common condom use barriers include the belief condoms reduced pleasure, condoms reducing intimacy, knowledge of their partners' sexual history. Less common condom use barriers included not knowing how to use condoms, not being able to afford condoms, and not knowing where to get condoms (Fehr, 2007). The present study measured participants' self-efficacy of preventing an unplanned pregnancy but did not measure perceived barriers to condom use. Research has shown that barriers towards condom use include whether adolescents believe they have self-efficacy to use condoms (Tung, 2011). Addressing individuals who have low self-efficacy can decrease perceived condom use barriers through interventions that increase self-efficacy while cementing the importance of condom use for individuals with high condom use self-efficacy (Tung, 2011; Lin et al., 2016). Participants’ condom use self-efficacy and condom use barriers are based on participants’ condom use behavior (Tung, 2011). Specifically,

participants in the action and maintenance stage have increased condom use self-efficacy while participants in the pre-contemplation, contemplation, and preparation stage have decreased self-efficacy suggesting perceived condom use barriers (Tung et al., 2011). Furthermore, teenagers who had perceived condom barriers prior to a sexual health intervention had decreased perceived condom barriers following the sexual health video focused on condom use behavior (Lin et al., 2016). Participants who had low condom use self-efficacy reported more barriers to condoms while participants with high self-efficacy had decreased condom use barriers and increased condom use benefits overall (Lin et al., 2016). Future research should create an intervention focused on addressing condom use self-efficacy and incorporating measures that reinforce the importance of reducing pregnancy and increasing condom use behavior.

Sexual communal motivations are positively correlated with birth control self-efficacy and birth control use in the last month (Rooney et al, in press). In the present study, there was not a difference in sexual communal motivations in the control and experimental condition. This could be attributed to participants, regardless of condition, were already communally motivated and thus their communal motivations could not increase from the intervention. While participants are already communally motivated perhaps incorporating sexual health material that does not increase sexual communal motivations but rather addresses benefits and perceived barriers to condom and birth control use can increase birth control and condom use. The addition of measures related to perceived barriers is especially important as a person may be motivated to use condoms and birth control but may not have access or a clear plan on where to get contraception. Perhaps the development of an intervention focused on identifying perceived barriers to condom use while promoting condom use self-efficacy and sexual communal motivations can reinforce future condom use behavior.

Future research should focus on further examining whether sexual communal motivations are malleable and perhaps the role long term sexual communal motivations and safe sexual behavior. Communal motivations, in general, are malleable and sustained over time (Rooney et al., in press). The present findings suggest that while communal motivations are malleable, sexual communal motivations may not malleable and cannot be changed through an intervention. Future exploratory studies should be performed to determine how communal motivations and sexual communal motivations differ in predicting sexual behavior and whether sexual communal motivations have aspects that make them un-malleable.

Identifying at-risk populations for risky sexual behavior such as women and the LGBTQ+ community should also be considered. Previous research suggests women perceive more barriers towards condom use in terms of embarrassment buying condoms and barriers with condom use negotiation (Fehr et al., 2017). Gay and bisexual males also report the belief condoms are useful for preventing pregnancy rather than reducing sexual risk (Mustanski et al., 2014). Future studies will focus on creating an intervention related to communal motivations and safer sexual practices geared towards these populations specifically in understanding why these populations experience less condom use behavior and demographic differences (i.e., language targeted to the LBGTQ+ community). Finally, equal power is correlated with increased sexual desire and long-term relationship satisfaction. Future research will also focus on examining relationship power dynamics, specifically related to equality in relationships.

Finally, individual differences such as age and social cognitive decision making related to sexual health behaviors and risky decision making are important topics to consider when measuring sexual risk-taking. Incorporating sexual communal motivations and participants' decision-making processes can glean insight into identifying individuals at risk for risky sexual

behavior. Adolescents and white individuals are more likely to choose the riskier option on decision-making tasks which translates to engaging in risky activities such as drug use and unprotected sex (Gardner & Steinberg, 2005). Identifying and understanding the decision-making processes for individuals who engage in risky sexual behaviors is important for targeting and educating at-risk populations.

Conclusion

College-age individuals are a high-risk population for an unplanned pregnancy. While there are multiple sexual health interventions available to educate college-age individuals, most interventions are long and require an extended attention span. Additionally, sexual communal motivations and RP influence condom use behavior and condom use negotiation. The present study suggests sexual communal motivations are important for predicting future condom use behavior and birth control use. Sexual communal motivations as well as RP increased talking to one's doctor about birth control for individuals in the experimental condition. Future research focused on promoting sexual communal motivations for individuals with low self-efficacy in condom use and birth control and at-risk populations such as women and the LBGTQ+ community is important to promote safe sexual behavior.

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