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Focusing on Safety or Pleasure Determine Condom Use Intentions Differently Depending on
Condom Availability and STI Risk

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Running head: Regulatory Focus and Condom Use

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Abstract

Regulatory Focus Theory (Higgins, 2015) suggests that goal pursuit is driven by two separate and fundamental motives. Being more focused on prevention motivates people to enact safer behaviors and avoid negative outcomes (e.g., to prevent diseases), whereas being more focused on promotion motivates people to take risks and pursue pleasurable experiences (e.g., condomless sex). A quasi-experimental study ($N = 476$) examined if differences in regulatory focus (i.e., prevention vs. promotion) determined condom use intentions with a prospective casual partner, depending on condom availability delay and STI risk cues. Participants focused on prevention (vs. promotion) were less likely to consider having condomless sex across condom availability delays conditions. However, STI risk cues changed condom use intentions. When STI risk was lower, condom use intentions decreased as condom availability delays increased (particularly for participants focused on promotion). When STI risk was higher, condom use intentions were stronger and consistent across condom availability delays (particularly for participants focused on prevention). These findings highlight the importance of distinct sexual motives when examining sexual health practices.

Keywords: Regulatory focus; Disease prevention; Please promotion; Condom; STI; Sexual Delay Discounting Task

Focusing on Safety or Pleasure Determine Condom Use Intentions Differently Depending on Condom Availability and STI Risk

Sexual health remains a matter of public health, with recent research showing decreases in condom use (e.g., Ballester-Arnal et al., 2022; Fisher et al., 2020; Katz et al., 2023; Ruan et al., 2019) and increases in sexually transmitted infections (STIs; Du et al., 2022; Scott-Sheldon & Chan, 2020). Different variables can help explain the process of deciding whether or not to use a condom (Glanz et al., 2015) and most of these variables are related to fundamental motives for safety and pleasure. For example, people who perceive a higher risk of getting an STI from a casual partner are more likely to use condoms (e.g., Ellen et al., 2002; Fehr et al., 2015). In contrast, those who believe that condomless sex is more exciting, allows for a more pleasurable experience, and increases partner connectedness are more likely to forgo condom use (e.g., Parsons et al., 2000). This is also aligned with recent evidence from a nationally representative sample of participants in the US (Ford et al., 2022), showing that people tend to construe and describe their experiences around sexual pleasure (using terms such as “pleasurable”, “intimate”, and “fun”) and sexual danger (using terms such as “stressful”, “risky”, and “scary”). Aligned with these findings, we argue that decision-making in sex is largely shaped by these two fundamental motives, given their crucial role in informing health behaviors (Whiting et al., 2019).

Regulatory Focus and Health

Drawing from the Regulatory Focus Theory (Higgins, 2015), goal pursuit is motivated differently depending on whether people are more focused on safety maintenance (i.e., prevention) or more focused on pleasure pursuit (i.e., promotion). Each motivational system has a distinct impact on risk perception and risk-taking (Bryant & Dunford, 2008). People more focused on prevention perceive more health threats, enact more protective behaviors, and are better at controlling these behaviors (e.g., Fuglestad et al., 2013; Leder et al., 2015;

Zou & Scholer, 2016). In contrast, people more focused on promotion are more open to experiences, enact riskier practices, and believe they can control the outcomes of their behaviors (e.g., Craciun et al., 2017; Hamstra et al., 2011; Lemarié et al., 2019).

Only recently have researchers started to extend this framework to the sexual health domain (Evans-Paulson et al., 2022; Rodrigues, Lopes, et al., 2019; Rodrigues et al., 2022, 2022; Rodrigues, de Visser, et al., 2023; Rodrigues, Carvalho, et al., 2023). Findings have shown that people more focused on prevention tend to be more aware of sexual health threats and use condoms more often with casual partners (i.e., they are more focused on preventing diseases), whereas people more focused on promotion tend to be less likely to use condoms and experience greater sexual satisfaction with casual partners (i.e., they are more focused on promoting pleasurable sexual experiences). This evidence indicates that individual differences in regulatory focus are crucial to understanding the way distinct motives in sex (disease prevention vs. pleasure promotion) inform sexual health decisions. However, there is still limited information on whether such differences also inform condom use decisions when people need to weigh the costs and rewards of their sexual activity.

Current Study

We examined if the intentions to use a condom with a prospective casual partner differed according to regulatory focus (i.e., disease prevention vs. pleasure promotion), depending on how long participants had to wait before a condom was available to them (i.e., condom availability delay), and whether there was a lower or higher risk their casual partner had an STI (i.e., STI risk cues). Hypothetical scenarios were adapted from the Sexual Delay Discounting Task (SDDT). Research using this task has shown that people are more likely to discount condom use (i.e., consider having condomless sex) if they need to wait for a longer (vs. shorter) period before a condom is available to them; if they perceive prospective casual partners as being more (vs. less) attractive and less (vs. more) likely to have an STI; in

scenarios in which there is a lower (vs. higher) chance of getting an STI; and if they enact riskier sexual activities more (vs. less) often (for reviews, see Gebru et al., 2022; Johnson et al., 2021).

Hypotheses

We expected participants focused on prevention (vs. promotion) to have stronger (vs. weaker) condom use intentions with a prospective casual partner (H1). For participants focused on prevention, condom use intentions should be consistent across condom availability delays (H2a), whereas for participants focused on promotion, condom use intentions should decrease as condom availability delays increase (H2b).

Regardless of regulatory focus, we also expected participants to have weaker condom use intentions when there is a lower (vs. higher) risk of getting an STI from the prospective casual partner (H3). However, this contextual cue should inform intentions differently according to regulatory focus and condom availability delays. For participants focused on prevention, condom use intentions should decrease as condom availability delays increase but only when STI risk is lower (and not higher; H4a). For participants focused on promotion, we expected condom use intentions to decrease with increases in condom availability delays regardless of STI risk cues, albeit more evident when STI risk is lower (vs. higher; H4b).

Method

Participants and Design

A power analysis using G*Power (Faul et al., 2009) indicated that we would need at least 386 participants for a mixed repeated measures ANOVA considering a medium effect size ($f = .10$) and 95% power. We increased this estimation by 20% to account for participants who failed the inclusion criteria, resulting in a target sample of 463 participants. From the 594 eligible participants who started the survey, we excluded those who failed to complete it ($n = 77$), failed at least one of the attention checks ($n = 14$), reported paying little

or no attention ($n = 8$), or wanted their responses withdrawn ($n = 4$). We additionally excluded participants who could not be categorized according to their predominant regulatory focus ($n = 15$).

The final sample included 476 participants living in the United States. As shown in Table 1, participants were, on average, 36 years old, and most were White, female, heterosexual, undergraduate, employed, living in suburban areas, or struggling with their financial situation. None of our participants was in a significant relationship. Group comparisons revealed differences in sexual orientation, $p < .001$, education, $p = .038$, and relationship status, $p = .002$. Specifically, a higher proportion of participants focused on prevention identified as heterosexual, had a university degree, and were single, whereas a higher proportion of participants focused on promotion identified as bisexual and were casually dating multiple people.

Table 1

Demographic characteristics

	Overall ($N = 476$) M (SD) or n (%)	Prevention focus ($n = 253$) M (SD) or n (%)	Promotion focus ($n = 223$) M (SD) or n (%)	Comparisons t (d) or χ^2 (V)
Age (range: 18-65)	35.61 (9.81)	36.02 (10.76)	35.14 (8.61)	0.98 (0.09)
Race/Ethnicity				7.97 (0.13)
Asian	13 (2.7)	9 (3.6)	4 (1.8)	
Black-African American	71 (14.9)	36 (14.2)	35 (15.7)	
Hispanic or Latinx	42 (8.8)	21 (8.3)	21 (9.4)	
Mixed race/ethnicity	35 (7.4)	19 (7.5)	16 (7.2)	
Native American	1 (0.2)	1 (0.4)	0 (0.0)	
Native Hawaiian/Pacific Islander	1 (0.2)	1 (0.4)	0 (0.0)	
White	308 (64.7)	161 (63.6)	147 (65.9)	
Prefer not to answer	5 (1.1)	5 (2.0)	0 (0.0)	
Gender				3.49 (0.09)
Female	337 (70.8)	170 (67.2)	167 (74.9)	
Male	130 (27.3)	78 (30.8)	52 (23.3)	
Non-binary	7 (1.5)	4 (1.6)	3 (1.3)	
Prefer not to answer	2 (0.4)	1 (0.4)	1 (0.4)	
Sexual orientation				23.7*** (0.22)
Asexual	5 (1.1)	2 ^a (0.8)	3 ^a (1.3)	
Bisexual	85 (17.9)	26 ^b (10.3)	59 ^a (26.5)	
Heterosexual	335 (70.4)	196 ^a (77.5)	139 ^b (62.3)	
Lesbian/Gay	23 (4.8)	13 ^a (5.1)	10 ^a (4.5)	
Pansexual	16 (3.4)	8 ^a (3.2)	8 ^a (3.6)	
Queer	10 (2.1)	6 ^a (2.4)	4 ^a (1.8)	
Prefer not to answer	2 (0.4)	2 ^a (0.8)	0 ^a (0.0)	

<i>Education</i>				14.83* (0.18)
Less than 6 years	1 (0.2)	0 ^a (0.0)	1 ^a (0.4)	
Less than 12 years	8 (1.7)	6 ^a (2.4)	2 ^a (0.9)	
High school graduate	106 (22.3)	48 ^a (19.0)	58 ^a (26.0)	
Some university	137 (28.8)	71 ^a (28.1)	66 ^a (29.6)	
Associates degree	75 (15.8)	34 ^a (13.4)	41 ^a (18.4)	
University graduate	109 (22.9)	70 ^a (27.7)	39 ^b (17.5)	
Master level degree	31 (6.5)	17 ^a (6.7)	14 ^a (6.3)	
Doctoral degree	9 (1.9)	7 ^a (2.8)	2 ^a (0.9)	
<i>Job</i>				2.99 (0.08)
Employed	318 (66.8)	171 (67.6)	147 (65.9)	
Primarily student	28 (5.9)	15 (5.9)	13 (5.8)	
Retired	10 (2.1)	7 (2.8)	3 (1.3)	
Stay-at-home parent	29 (6.1)	13 (5.1)	16 (7.2)	
Unemployed	82 (17.2)	41 (16.2)	41 (18.4)	
Prefer not to answer	9 (1.9)	6 (2.4)	3 (1.3)	
<i>Residence</i>				2.49 (0.07)
Rural area	94 (19.7)	45 (17.8)	49 (22.0)	
Suburban area	222 (46.6)	124 (49.0)	98 (43.9)	
Urban area	152 (31.9)	81 (32.0)	71 (31.8)	
Prefer not to answer	8 (1.7)	3 (1.2)	5 (2.2)	
<i>Finance</i>				5.34 (0.11)
Cannot make ends meet	116 (24.4)	54 (21.3)	62 (27.8)	
Have to cut back	134 (28.2)	76 (30.0)	58 (26.0)	
Enough with no extra	148 (31.1)	76 (30.0)	72 (32.3)	
Comfortable with extra	62 (13.0)	39 (15.4)	23 (10.3)	
Prefer not to answer	16 (3.4)	8 (3.2)	8 (3.6)	
<i>Relationship status</i>				12.83** (0.16)
Single	309 (64.9)	177 ^a (70.0)	132 ^b (59.2)	
Casually dating one person	96 (20.2)	52 ^a (20.6)	44 ^a (19.7)	
Casually dating multiple people	71 (14.9)	24 ^a (9.5)	47 ^b (21.1)	

Note. Different superscripts between prevention focus and promotion focus indicate significant differences in column proportions with Bonferroni correction at $p < .050$.

*** $p \leq .001$, ** $p \leq .010$, * $p \leq .050$.

We used a 2 (Regulatory focus: prevention vs. promotion) x 5 (Condom availability delay: immediate vs. 1 hour vs. 6 hours vs. 1 day vs. 1 week) x 2 (STI risk cues: lower vs. higher) factorial design, with the latter two factors as within-participants.

Procedure and Measures

The study was part of the Prevent2Protect project (see [OSF](#)), previously approved by the Ethics Committee at Iscte-Instituto Universitário de Lisboa (#70/2021). Participants were recruited through the Clickworker platform in August 2023 and received \$2 upon survey completion. People accessed the online survey and had to give their consent to proceed. The inclusion criteria for this study were age (≥ 18 years), past engagement in sexual activity (intercourse or oral sex), and not having significant relationship(s). By including only single

participants, we were able to control for the activation of relationship protection strategies (e.g., Rodrigues et al., 2017).

After providing standard demographic information, participants were presented with the Regulatory Focus in Sexuality Scale (Rodrigues, Lopes, et al., 2019) and indicated their prevention motives (three items; e.g., “Not being careful enough in my sex life has gotten me into trouble at times” [reverse coded]) and their promotion motives in sexuality (six items; e.g., “I am typically striving to fulfill my desires with my sex life”) using 7-point rating scales (1 = *Not at all true of me* to 7 = *Very true of me*). Responses were mean aggregated on each subscale, with higher scores indicating a greater focus on prevention ($\alpha = .70$; $M = 4.93$, $SD = 1.57$) or promotion ($\alpha = .86$; $M = 4.70$, $SD = 1.41$). Both scores were negatively correlated, $r(476) = -.28$, $p < .001$.

We then used an adapted version of the SDDT. Unlike the original task, prospective casual partners were presented using gender-neutral descriptive text, and scenarios had no mention of pregnancy risk. This allowed us to be inclusive of sexual minorities. This task was divided into two blocks (counterbalanced order). In the lower STI risk block, participants were prompted to “Imagine you just met a very attractive person and liked their personality. This person is interested in having sex now with you, and a condom is readily and immediately available. You also want to have casual sex and there is little chance this person has a sexually transmitted infection (STI). On the following scale, please rate how likely you are to have sex now”. Responses were given using a 100-point visual analog scale (from 0 = *I will definitely have sex with this person now without a condom* to 100 = *I will definitely have sex with this person now with a condom*). This was followed by four additional scenarios varying in ascending condom availability delays: 1 hour, 6 hours, 1 day, and 1 week. Across different screens, participants were prompted to “Imagine that no condom is available now. This person is interested in having sex now with you, you also want to have casual sex and

there is little chance this person has an STI. You can either have sex with this person now without a condom, or you can wait until you will see them again in [*delay*] when you will have a condom. On the following scale, please rate how likely you are to have sex now”. Again, responses for each scenario were given using 100-point visual analog scales (from 0 = *I will definitely have sex with this person now without a condom* to 100 = *I will definitely wait [*delay*] to have with this person with a condom*). By the end of the block, each participant made five evaluations. In the higher STI risk block, the only difference was the sentence “You also want to have casual sex and there is a strong chance this person has an STI”. All other descriptions and questions were the same. This survey was part of a larger project and included other measures that are irrelevant to the current study. At the end of the survey, participants were thanked, debriefed, and provided with contact information.

Data Analytic Plan

As in Rodrigues et al. (2019), we computed an index by subtracting promotion scores from prevention scores ($M = 0.23$, $SD = 2.39$, 95% CI [0.01; 0.44]). Participants with positive index scores were categorized as focused on prevention ($n = 253$; $M = 2.04$, $SD = 1.40$, 95% CI [1.87, 2.21]), and participants with negative index scores were categorized as focused on promotion ($n = 223$; $M = -1.83$, $SD = 1.40$, 95% CI [-2.02, -1.65]). Participants whose index score was equal to zero were removed ($n = 15$) because did not have a predominant regulatory focus and were too few to be included in the analyses.

We then examined differences in condom use intentions using a 2 (Regulatory focus: prevention vs promotion) x 5 (Condom availability delay: immediate vs. 1 hour vs. 6 hours vs. 1 day vs. 1 week) x 2 (STI risk cues: lower vs. higher) mixed repeated measures ANOVA. When significant interactions or contrast trends were found, we computed post-hoc comparisons with Bonferroni adjustment. Lastly, we explored if any of the demographic differences between groups (Table 1) changed our results by entering each variable as a

covariate in the main analysis. All materials, anonymized data, syntaxes, and outputs supporting our findings are available on our [OSF](#) page.

Results

Regulatory Focus and Condom Availability

Results showed a main effect of regulatory focus, $F(1, 474) = 42.49, p < .001, \eta_p^2 = .082$. Overall, participants focused on prevention were more likely to consider using a condom than participants focused on promotion (Table 2). There was also a main effect of condom availability delay, $F(4, 1896) = 16.85, p < .001, \eta_p^2 = .034$. Overall, participants were equally likely to consider using a condom if they had to wait up to 6 hours, all $p \geq .277$. The lowest condom use intentions were observed if participants had to wait 1 week for a condom, all $p < .001$ (Table 2). Contrast analyses showed a negative linear trend in this main effect, $F(1, 474) = 32.73, p < .001, \eta_p^2 = .065$.

The interaction between regulatory focus and condom availability delay was also significant, $F(4, 1896) = 3.39, p = .009, \eta_p^2 = .007$. Specifically, participants focused on prevention were equally likely to consider using a condom if they had to wait up to 1 day for a condom to be available, all $p \geq .739$, but less likely to do so if they had to wait 1 week, all $p = .032$. Participants focused on promotion were equally likely to consider using a condom if they had to wait up to 1 hour for a condom to be available, $p = .734$, but less likely to do so if they had to wait 6 hours or more, all $p \leq .006$ (Table 2). Contrast analyses revealed a quadratic trend in this interaction, $F(1, 474) = 9.13, p = .003, \eta_p^2 = .019$.

Table 2

Condom Use Intentions According to Regulatory Focus and Condon Availability Delay

	Prevention focus <i>M (SE)</i>	Promotion focus <i>M (SE)</i>	<i>Overall</i>
Readily available	80.41 (1.37)	70.77 (1.45)	75.59 (1.00)
Wait 1 hour	82.57 (1.49)	68.47 (1.59)	75.52 (1.09)
Wait 6 hours	81.05 (1.54)	65.98 (1.64)	73.52 (1.12)
Wait 1 day	78.87 (1.55)	65.87 (1.65)	72.37 (1.13)
Wait 1 week	76.14 (1.60)	64.01 (1.70)	70.07 (1.17)

<i>Overall</i>	79.81 (1.34)	67.02 (1.43)	-
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STI Risk Cues and Condom Availability

We also found a main effect of STI risk, $F(1, 474) = 115.94, p < .001, \eta_p^2 = .197$, such that participants were more likely to consider using a condom when there was a lower (vs. higher) risk of getting an STI from the prospective casual partner (Table 3). The interaction between regulatory focus and STI risk was non-significant, $F(1, 474) = 0.40, p = .529, \eta_p^2 = .001$. However, the interaction between condom availability delay and STI risk was significant, $F(4, 1896) = 29.30, p < .001, \eta_p^2 = .058$. More specifically, condom use intentions decreased as condom availability delays increased in the lower STI risk condition, all $p < .001$ (except when comparing both immediate and 1-hour delay conditions, $p = .451$). In the higher STI risk condition, condom use intentions did not differ as delays increased, all $p \geq .189$ (Table 3). Contrast analyses revealed a negative linear trend in this interaction, $F(1, 474) = 58.94, p < .001, \eta_p^2 = .111$.

Table 3

Condom Use Intentions According to Condon Availability Delays and STI Risk Cues

	Lower STI risk <i>M (SE)</i>	Higher STI risk <i>M (SE)</i>	<i>Overall</i>
Readily available	70.69 (1.50)	80.50 (1.13)	75.59 (1.00)
Wait 1 hour	68.12 (1.61)	82.92 (1.23)	75.52 (1.09)
Wait 6 hours	64.29 (1.64)	82.74 (1.27)	73.52 (1.12)
Wait 1 day	61.51 (1.70)	83.22 (1.23)	72.37 (1.13)
Wait 1 week	58.34 (1.76)	81.80 (1.24)	70.07 (1.17)
<i>Overall</i>	64.59 (1.47)	82.24 (1.06)	-

Regulatory Focus, Condom Availability, and STI Risk Cues

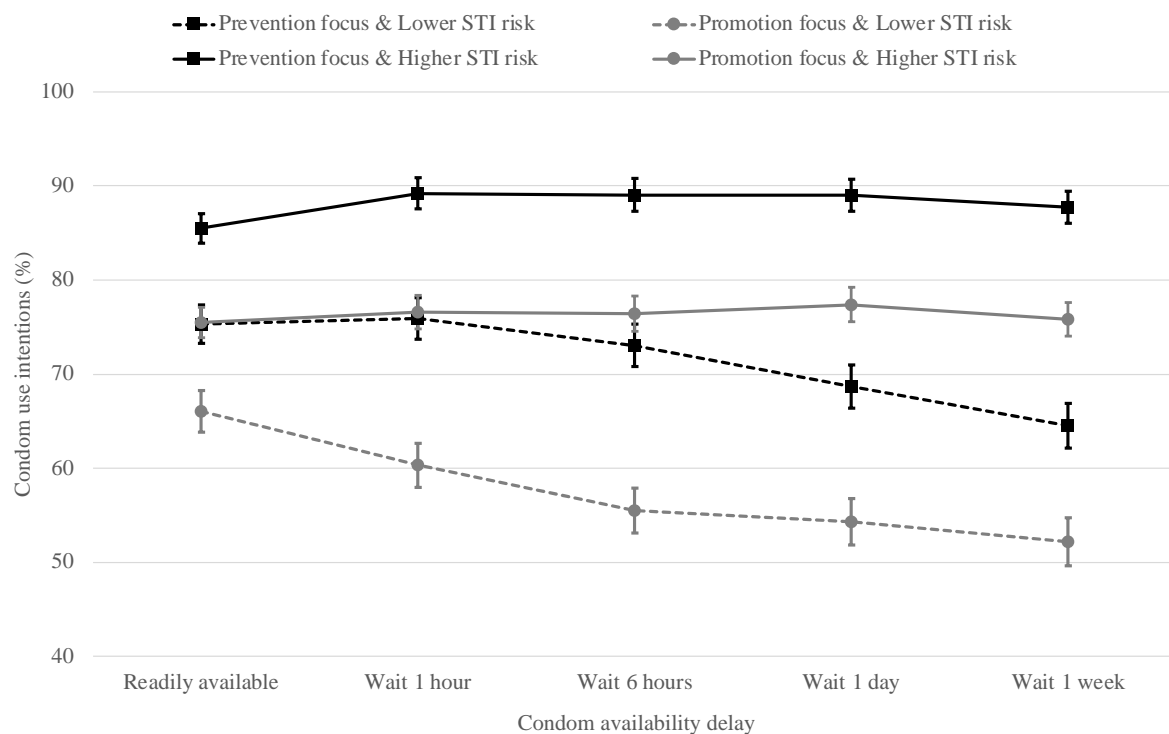
Results showed a non-significant interaction between all factors, $F(1, 474) = 0.40, p = .529, \eta_p^2 = .001$ (Table 4). Upon closer inspection, however, contrast analyses revealed a quadratic trend in this interaction, $F(1, 474) = 5.30, p = .022, \eta_p^2 = .011$. As depicted in Figure 1, participants focused on prevention in the lower STI risk condition were equally

likely to consider using a condom if they had to wait up to 6 hours for a condom to be available, all $p = 1.00$, but less likely to do so if they had to wait 1 day or more, all $p \leq .007$. In contrast, participants focused on promotion in the lower STI risk condition were less likely to consider using a condom if they had to wait 1 hour or more for it to be available, all $p \leq .022$. In the higher STI risk condition, condom use intentions did not differ across condom availability delays, regardless of whether participants were focused on prevention, $p \geq .133$, or promotion, $p \geq .923$.

Table 4

Condom Use Intentions for the 3-way Interaction

		Prevention focus <i>M (SE)</i>	Promotion focus <i>M (SE)</i>
Lower STI risk	Readily available	75.32 (2.05)	66.05 (2.19)
	Wait 1 hour	75.92 (2.20)	60.32 (2.35)
	Wait 6 hours	73.06 (2.24)	55.53 (2.39)
	Wait 1 day	68.68 (2.32)	54.34 (2.48)
	Wait 1 week	64.52 (2.40)	52.17 (2.56)
Higher STI risk	Readily available	85.51 (1.55)	75.49 (1.65)
	Wait 1 hour	89.22 (1.69)	76.62 (1.80)
	Wait 6 hours	89.04 (1.73)	76.44 (1.85)
	Wait 1 day	89.04 (1.68)	77.41 (1.79)
	Wait 1 week	87.76 (1.70)	75.84 (1.81)

Figure 1*Interaction Between Regulatory Focus, Condom Availability Delay, and STI Risk Cues*

Note. Bars indicate standard errors.

Controlling for Potential Confounds

We entered sexual orientation, education, and relational status as covariates. Results showed that neither of these variables had a main effect, all $p \geq .310$, interacted with any of the factors of the design, all $p \geq .163$, or produced significant contrast trends, all $p \geq .074$. Results of the main analysis remained unchanged, except for the main effect of condom availability delay that became non-significant after controlling for relational status, $p = .481$.

Discussion

Framed by different theoretical models, researchers have already identified multiple variables that can determine condom use practices (e.g., Glanz et al., 2015). We argued that such practices should be examined from a regulatory focus perspective, as fundamental motives for safety or pleasure are crucial for risk perception and risk-taking behaviors

(Bryant & Dunford, 2008; Klein & Cerully, 2007; Whiting et al., 2019). There is evidence that regulatory focus differences shape how people perceive sexual health risks and pursue their sexual goals (e.g., Evans-Paulson et al., 2022; Rodrigues et al., 2020, 2022), their STI knowledge and sexual health practices (Rodrigues, de Visser, et al., 2023), and their condom beliefs (Rodrigues, Carvalho, et al., 2023). Building upon this evidence, we examined whether being focused on prevention or promotion also determined condom use intentions depending on condom availability delays and STI risk cues. As expected, having a focus on prevention (vs. promotion) was a stronger protective factor against condomless sex. Overall, participants focused on prevention were more likely to consider using a condom (H1) and were more consistent in their condom use intentions across condom availability delays (H2a). Interestingly, such consistency became impaired if participants had to wait for a longer period (i.e., 1 week) until they had access to a condom. In contrast, participants focused on promotion were quicker at discounting condom use (i.e., if they had to wait more than 1 hour for a condom to become available) and showed steeper decreases in condom use intentions as condom availability delays increased (H2b). These findings advance our knowledge by showing that regulatory focus drives people to weigh the costs and rewards of their sexual activity differently. People focused on prevention are more aware of sexual health costs and more likely to consider postponing a potentially rewarding sexual experience to favor their safety. In contrast, people focused on promotion are more aware of sexual pleasure rewards and more likely to consider risking their health to favor pleasure.

Our findings also highlighted important nuances in the condom use decision-making process. As expected, participants were more likely to consider having condomless sex when STI risk was lower, regardless of their regulatory focus (H3). Although not expected beforehand, we also found that condom use discounting was more evident as condom use delays increased when STI risk was lower, whereas no differences were observed when STI

risk was higher. These findings are aligned with past research (Gebru et al., 2022; Johnson et al., 2021) and show the crucial role of contextual cues when making sexual health decisions. Equally important, contextual risk cues determined condom use intentions differently, depending on regulatory focus and condom availability delays. As expected, participants focused on prevention were more lenient with their condom use intentions as condom availability delays increased when there was a lower (but not higher) risk of getting an STI from the prospective casual partner (H4a). Unlike our expectations, a similar pattern emerged for participants focused on promotion (H4b). Specifically, being focused on promotion drove steeper condom use discounts with increasing condom availability delays (reaching chance levels in the 1-week delay condition) when there was a lower STI risk. In both groups, condom use intentions were consistent when STI risk was higher, although the intentions of participants focused on promotion were weaker than those of participants focused on prevention. This was a surprising and interesting finding, indicating that even though people focused on prevention are more driven by health safety, they may discard the need for protection when contextual cues highlight a safer context. In contrast, even though people focused on promotion are driven by risk-taking, they may discard pleasure motives when contextual cues highlight a riskier context. In some ways, then, these novel findings depart from the typical behavioral differences reported in past research, by indicating that people focused on prevention and people focused on promotion sometimes engage in similar reasoned decision-making processes when assessing the potential costs and rewards of their actions.

Limitations and Future Studies

Our findings must be taken considering some limitations. First, our data were collected with people living in the United States, who arguably have easier access to sexual education and healthcare when compared to people from other countries (e.g., Sub-Saharan Africa). We

also categorized participants based on their responses to a trait-like measure of regulatory focus instead of temporarily activating a given regulatory focus. This approach can create some confounds particularly when grouping participants with diverse index scores and not accounting for subtle differences that may occur. Lastly, we asked participants to report their condom use intentions instead of examining actual behaviors. Still, we believe in the adequacy and validity of our approach as a first step to examining the interplay between regulatory focus and contextual cues. Future research could seek to replicate our findings in different cultural contexts with more diverse samples of participants, using fully experimental methodologies (e.g., Rodrigues et al., 2017; Zou & Scholer, 2016), and/or adopting longitudinal approaches (e.g., Fuglestad et al., 2013). This would allow researchers to test the generalizability and ecological validity of our findings while contributing to understanding in greater detail the impact of factors, such as demographics (e.g., younger and older people; Rodrigues, Prada, et al., 2019; Szucs et al., 2020), behavioral predispositions (e.g., alcohol and drug use; Tucker et al., 2019), communication (e.g., condom use negotiation; Noar et al., 2006), relational dynamics (e.g., perceived trust; Fortenberry, 2019; Rodrigues, 2022), contraceptive use (Fu et al., 2021), or contextual variables (e.g., condom availability and STI rates; Shacham et al., 2016). More broadly, researchers could also examine in detail whether regulatory focus in sexuality interplays with gender scripts and beliefs related to sexuality. For example, the belief that women are more submissive in sex and less likely to orgasm (Gusakova et al., 2020; Laan et al., 2021) may be less likely to determine the sexual encounters of women focused on promotion (vs. prevention).

Conclusion

Our study offers important insights that can help foster consistent condom use and consequently lower STI rates. Despite several efforts to change the narrative attached to condom use (e.g., development of erectogenic condoms; Gallo et al., 2022), there is still a

prevalent belief that condoms are barriers not only against infections and unwanted pregnancies but also limit sexual pleasure and intimacy (Rodrigues, Carvalho, et al., 2023). This belief can have consequences for sexual health and well-being (Ford et al., 2019; Sladden et al., 2021), not only because people focused on prevention value their safety at the cost of sexual pleasure but also because people focused on promotion value their pleasure at the risk of health problems. Given that people are more likely to pay attention to, and adhere to, health messages that are framed in accordance with their predominant regulatory focus (i.e., regulatory fit; Fridman & Higgins, 2017), sexual education curricula and awareness campaigns should consider developing contents directed at increasing both safety and pleasure in sex framed by prevention and promotion motives. This is particularly important given the evidence that incorporating pleasure in sexual and reproductive health interventions reliably improves condom use uptake and sexual health outcomes (e.g., condom use self-efficacy and negotiation; Zaneva et al., 2022). Applying this to self-guided interventions (e.g., mHealth apps), people can be shown tailored contents after a simple assessment of their predominant regulatory focus, therefore increasing its potential success.

Declarations

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Ethics approval: The study was part of the Prevent2Protect project, previously approved by the Ethics Committee at Iscte-Instituto Universitário de Lisboa (#70/2021) and was in accordance with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

Consent to participate: Informed consent was obtained from all individual participants included in the study.

Data availability: All materials, anonymized data, and syntaxes that support our findings are available upon request from the first author and publicly shared on the Prevent2Protect [OSF](#) page.

References

- Ballester-Arnal, R., Giménez-García, C., Ruiz-Palomino, E., Castro-Calvo, J., & Gil-Llario, M. D. (2022). A trend analysis of condom use in Spanish young people over the two past decades, 1999–2020. *AIDS and Behavior*, 26(7), 2299–2313.
<https://doi.org/10.1007/s10461-021-03573-6>
- Bryant, P., & Dunford, R. (2008). The influence of regulatory focus on risky decision-making. *Applied Psychology*, 57(2), 335–359. <https://doi.org/10.1111/j.1464-0597.2007.00319.x>
- Craciun, G., Shin, D., & Zhang, J. Q. (2017). Safe driving communication: A regulatory focus perspective. *Journal of Consumer Behaviour*, 16(6), e50–e60.
<https://doi.org/10.1002/cb.1654>
- Du, M., Yan, W., Jing, W., Qin, C., Liu, Q., Liu, M., & Liu, J. (2022). Increasing incidence rates of sexually transmitted infections from 2010 to 2019: An analysis of temporal trends by geographical regions and age groups from the 2019 Global Burden of Disease study. *BMC Infectious Diseases*, 22(1), 574. <https://doi.org/10.1186/s12879-022-07544-7>
- Ellen, J. M., Adler, N., Gurvey, J. E., Dunlop, M. B. V., Millstein, S. G., & Tschann, J. (2002). Improving predictions of condom behavioral intentions with partner-specific measures of risk perception. *Journal of Applied Social Psychology*, 32(3), 648–663.
<https://doi.org/10.1111/j.1559-1816.2002.tb00235.x>
- Evans-Paulson, R., Widman, L., Javidi, H., & Lipsey, N. (2022). Is regulatory focus related to condom use, STI/HIV testing, and sexual satisfaction? *The Journal of Sex Research*, 59(4), 504–514. <https://doi.org/10.1080/00224499.2021.1961671>

- Faul, F., Erdfelder, E., Buchner, A., & Lang, A.-G. (2009). Statistical power analyses using G*Power 3.1: Tests for correlation and regression analyses. *Behavior Research Methods*, 41(4), 1149–1160. <https://doi.org/10.3758/BRM.41.4.1149>
- Fehr, S. K., Vidourek, R. A., & King, K. A. (2015). Intra- and inter-personal barriers to condom use among college students: A review of the literature. *Sexuality & Culture*, 19(1), 103–121. <https://doi.org/10.1007/s12119-014-9249-y>
- Fisher, C. M., Kauer, S., Mikolajczak, G., Ezer, P., Kerr, L., Bellamy, R., Waling, A., & Lucke, J. (2020). Prevalence rates of sexual behaviors, condom use, and contraception among Australian heterosexual adolescents. *The Journal of Sexual Medicine*, 17(12), 2313–2321. <https://doi.org/10.1016/j.jsxm.2020.08.009>
- Ford, J. V., Corona Vargas, E., Finotelli Jr., I., Fortenberry, J. D., Kismödi, E., Philpott, A., Rubio-Aurioles, E., & Coleman, E. (2019). Why pleasure matters: Its global relevance for sexual health, sexual rights and wellbeing. *International Journal of Sexual Health*, 31(3), 217–230. <https://doi.org/10.1080/19317611.2019.1654587>
- Ford, J. V., Hensel, D., McKetta, S., Carter, A., Herbenick, D., Ford, J. V., Hensel, D., McKetta, S., Carter, A., & Herbenick, D. (2022). Dimensions of sexual experiences reflected through adjective selection: Findings from a US nationally representative survey. *Sexual Health*, 19(5), 427–438. <https://doi.org/10.1071/SH22043>
- Fortenberry, J. D. (2019). Trust, sexual trust, and sexual health: An interrogative review. *Journal of Sex Research*, 56(4–5), 425–439. <https://doi.org/10.1080/00224499.2018.1523999>
- Fridman, I., & Higgins, E. T. (2017, July 27). *Regulatory focus and regulatory fit in health messaging*. Oxford Research Encyclopedia of Communication. <https://doi.org/10.1093/acrefore/9780190228613.013.257>

- Fu, T., Herbenick, D., Dodge, B. M., Beckmeyer, J. J., & Hensel, D. J. (2021). Long-acting reversible contraceptive users' knowledge, conversations with healthcare providers, and condom use: Findings from a U.S. nationally representative probability survey. *International Journal of Sexual Health, 33*(2), 163–174.
<https://doi.org/10.1080/19317611.2020.1870024>
- Fuglestad, P. T., Rothman, A. J., & Jeffery, R. W. (2013). The effects of regulatory focus on responding to and avoiding slips in a longitudinal study of smoking cessation. *Basic and Applied Social Psychology, 35*(5), 426–435.
<https://doi.org/10.1080/01973533.2013.823619>
- Gallo, M. F., Nguyen, N. C., Luff, A., Luong, T. N., Le, V. T., Casterline, J., & Andridge, R. (2022). Effects of a novel erectogenic condom on men and women's sexual pleasure: Randomized controlled trial. *The Journal of Sex Research, 59*(9), 1133–1139.
<https://doi.org/10.1080/00224499.2021.2024790>
- Geburu, N. M., Kalkat, M., Strickland, J. C., Ansell, M., Leeman, R. F., & Berry, M. S. (2022). Measuring sexual risk-taking: A systematic review of the Sexual Delay Discounting Task. *Archives of Sexual Behavior, 51*(6), 2899–2920.
<https://doi.org/10.1007/s10508-022-02355-y>
- Glanz, K., Rimer, B. K., & Viswanath, K. (Eds.). (2015). *Health behavior and health education: Theory, research, and practice* (5th ed.). Jossey-Bass.
- Gusakova, S., Conley, T. D., Piemonte, J. L., & Matsick, J. L. (2020). The role of women's orgasm goal pursuit in women's orgasm occurrence. *Personality and Individual Differences, 155*, 109628. <https://doi.org/10.1016/j.paid.2019.109628>
- Hamstra, M. R. W., Bolderdijk, J. W., & Veldstra, J. L. (2011). Everyday risk taking as a function of regulatory focus. *Journal of Research in Personality, 45*(1), 134–137.
<https://doi.org/10.1016/j.jrp.2010.11.017>

- Higgins, E. T. (2015). Regulatory Focus Theory. In R. A. Scott, M. C. Buchmann, & S. M. Kosslyn (Eds.), *Emerging Trends in the Social and Behavioral Sciences: An Interdisciplinary, Searchable, and Linkable Resource* (pp. 1–18). Wiley.
<https://doi.org/10.1002/9781118900772.etrds0279>
- Johnson, M. W., Strickland, J. C., Herrmann, E. S., Dolan, S. B., Cox, D. J., & Berry, M. S. (2021). Sexual discounting: A systematic review of discounting processes and sexual behavior. *Experimental and Clinical Psychopharmacology*, 29(6), 711–738.
<https://doi.org/10.1037/pha0000402>
- Katz, D. A., Copen, C. E., Haderxhanaj, L. T., Hogben, M., Goodreau, S. M., Spicknall, I. H., & Hamilton, D. T. (2023). Changes in sexual behaviors with opposite-sex partners and sexually transmitted infection outcomes among females and males ages 15–44 years in the USA: National Survey of Family Growth, 2008–2019. *Archives of Sexual Behavior*, 52(2), 809–821. <https://doi.org/10.1007/s10508-022-02485-3>
- Klein, W. M. P., & Cerully, J. L. (2007). Health-related risk perception and decision-making: Lessons from the study of motives in social psychology. *Social and Personality Psychology Compass*, 1(1), 334–358. <https://doi.org/10.1111/j.1751-9004.2007.00023.x>
- Laan, E. T. M., Klein, V., Werner, M. A., van Lunsen, R. H. W., & Janssen, E. (2021). In pursuit of pleasure: A biopsychosocial perspective on sexual pleasure and gender. *International Journal of Sexual Health*, 33(4), 516–536.
<https://doi.org/10.1080/19317611.2021.1965689>
- Leder, S., Florack, A., & Keller, J. (2015). Self-regulation and protective health behaviour: How regulatory focus and anticipated regret are related to vaccination decisions. *Psychology & Health*, 30, 165–188. <https://doi.org/10.1080/08870446.2014.954574>

- Lemarié, L., Bellavance, F., & Chebat, J.-C. (2019). Regulatory focus, time perspective, locus of control and sensation seeking as predictors of risky driving behaviors. *Accident Analysis & Prevention*, *127*, 19–27.
<https://doi.org/10.1016/j.aap.2019.02.025>
- Noar, S. M., Carlyle, K., & Cole, C. (2006). Why communication is crucial: Meta-analysis of the relationship between safer sexual communication and condom use. *Journal of Health Communication*, *11*(4), 365–390. <https://doi.org/10.1080/10810730600671862>
- Parsons, J. T., Halkitis, P. N., Bimbi, D., & Borkowski, T. (2000). Perceptions of the benefits and costs associated with condom use and unprotected sex among late adolescent college students. *Journal of Adolescence*, *23*(4), 377–391.
<https://doi.org/10.1006/jado.2000.0326>
- Rodrigues, D. L. (2022). Regulatory focus and perceived safety with casual partners: Implications for perceived risk and casual sex intentions during the COVID-19 pandemic. *Psychology & Sexuality*, *13*(5), 1303–1318.
<https://doi.org/10.1080/19419899.2021.2018355>
- Rodrigues, D. L., Carvalho, A. C., Prada, M., Garrido, M. V., Balzarini, R. N., de Visser, R. O., & Lopes, D. (2023). Condom use beliefs differ according to regulatory focus: A mixed-methods study in Portugal and Spain. *The Journal of Sex Research, Advance online publication*. <https://doi.org/10.1080/00224499.2023.2181305>
- Rodrigues, D. L., de Visser, R. O., Lopes, D., Prada, M., Garrido, M. V., & Balzarini, R. N. (2023). Prevent2Protect project: Regulatory focus differences in sexual health knowledge and behavior. *Archives of Sexual Behavior*, *52*(4), 1701–1713.
<https://doi.org/10.1007/s10508-023-02536-3>
- Rodrigues, D. L., Lopes, D., & Carvalho, A. C. (2022). Regulatory focus and sexual health: Motives for security and pleasure in sexuality are associated with distinct protective

behaviors. *The Journal of Sex Research*, 59(4), 484–492.

<https://doi.org/10.1080/00224499.2021.1926413>

Rodrigues, D. L., Lopes, D., & Kumashiro, M. (2017). The “I” in us, or the eye on us?

Regulatory focus, commitment and derogation of an attractive alternative person.

PLoS ONE, 12(3), e0174350. <https://doi.org/10.1371/journal.pone.0174350>

Rodrigues, D. L., Lopes, D., Pereira, M., Prada, M., & Garrido, M. V. (2019). Motivations

for sexual behavior and intentions to use condoms: Development of the Regulatory Focus in Sexuality scale. *Archives of Sexual Behavior*, 48(2), 557–575.

<https://doi.org/10.1007/s10508-018-1316-2>

Rodrigues, D. L., Lopes, D., Pereira, M., Prada, M., & Garrido, M. V. (2020). Predictors of condomless sex and sexual health behaviors in a sample of Portuguese single adults.

The Journal of Sexual Medicine, 17(1), 26–36.

<https://doi.org/10.1016/j.jsxm.2019.10.005>

Rodrigues, D. L., Prada, M., & Lopes, D. (2019). Perceived sexual self-control and condom use with primary and casual sex partners: Age and relationship agreement differences in a Portuguese sample. *Psychology & Health*, 34(10), 1231–1249.

<https://doi.org/10.1080/08870446.2019.1603384>

Ruan, F., Fu, G., Yan, Y., Li, Y., Shi, Y., Luo, L., Li, X., Zhang, B., Gong, Q., Fu, Z., Gan, Y., Pan, M., Liu, Y., Zhan, J., & Wang, J. (2019). Inequities in consistent condom use among sexually experienced undergraduates in mainland China: Implications for planning interventions. *BMC Public Health*, 19(1), 1195.

<https://doi.org/10.1186/s12889-019-7435-4>

Scott-Sheldon, L. A. J., & Chan, P. A. (2020). Increasing sexually transmitted infections in the U.S.: A call for action for research, clinical, and public health practice. *Archives of Sexual Behavior*, 49(1), 13–17. <https://doi.org/10.1007/s10508-019-01584-y>

- Shacham, E., Nelson, E. J., Schulte, L., Bloomfield, M., & Murphy, R. (2016). Condom deserts: Geographical disparities in condom availability and their relationship with rates of sexually transmitted infections. *Sexually Transmitted Infections*, 92(3), 194–199. <https://doi.org/10.1136/sextrans-2015-052144>
- Sladden, T., Philpott, A., Braeken, D., Castellanos-Usigli, A., Yadav, V., Christie, E., Gonsalves, L., & Mofokeng, T. (2021). Sexual health and wellbeing through the life course: Ensuring sexual health, rights and pleasure for all. *International Journal of Sexual Health*, 33(4), 565–571. <https://doi.org/10.1080/19317611.2021.1991071>
- Szucs, L. E., Lowry, R., Fasula, A. M., Pampati, S., Copen, C. E., Hussaini, K. S., Kachur, R. E., Koumans, E. H., & Steiner, R. J. (2020). Condom and contraceptive use among sexually active high school students—Youth Risk Behavior Survey, United States, 2019. *MMWR Supplements*, 69(1), 11–18. <https://doi.org/10.15585/mmwr.su6901a2>
- Tucker, J. S., Shih, R. A., Pedersen, E. R., Seelam, R., & D’Amico, E. J. (2019). Associations of alcohol and marijuana use with condom use among young adults: The moderating role of partner type. *The Journal of Sex Research*, 56(8), 957–964. <https://doi.org/10.1080/00224499.2018.1493571>
- Whiting, W., Pharr, J. R., Buttner, M. P., & Lough, N. L. (2019). Behavioral interventions to increase condom use among college students in the United States: A systematic review. *Health Education & Behavior*, 46(5), 877–888. <https://doi.org/10.1177/1090198119853008>
- Zaneva, M., Philpott, A., Singh, A., Larsson, G., & Gonsalves, L. (2022). What is the added value of incorporating pleasure in sexual health interventions? A systematic review and meta-analysis. *PLOS ONE*, 17(2), e0261034. <https://doi.org/10.1371/journal.pone.0261034>

Zou, X., & Scholer, A. A. (2016). Motivational affordance and risk-taking across decision domains. *Personality and Social Psychology Bulletin*, 42(3), 275–289.

<https://doi.org/10.1177/0146167215626706>