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Title: Regulatory Focus and Sexual Health: Motives for Security and Pleasure in Sexuality
are Associated with Distinct Protective Behaviors

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Abstract

We examined if motives for security (i.e., prevention focus) or pleasure (i.e., promotion focus) were uniquely associated with intentions to get tested for STIs and behavioral control over condom use, over and above variables already identified in theoretical models. We conducted an online survey with Portuguese adults ($N = 836$; $M_{\text{age}} = 22.27$, $SD = 5.14$). Overall, 99.4% of the participants knew at least one of eight STIs, but only 25.2% got tested in the last six months. Participants more focused on prevention had condomless sex less frequently, whereas participants more focused on promotion knew and got tested more STIs. Furthermore, participants had stronger intentions to get tested for STIs if they got tested for more STIs in the past, were more concerned about STIs, perceived greater susceptibility to STI acquisition, and were more focused on promotion (but not prevention). Participants had greater behavioral control over condom use if they had condomless sex less often and were more focused on prevention (but not promotion). These findings suggest that promotion-focused people are more likely to consider the consequences of having condomless sex. In contrast, prevention-focused people are more likely to take control of their sexual health.

Keywords: STIs; Knowledge; Motivation; Regulatory focus in sexuality; STI testing; Behavioral control; Condom use

**Regulatory Focus and Sexual Health: Motives for Security and Pleasure in Sexuality
are Associated with Distinct Protective Behaviors**

Recent epidemiological reports have shown significant increases in sexually transmitted infections (STIs) rates worldwide (CDC, 2019; ECDC, 2020; National Academies of Sciences, Engineering, and Medicine, 2021). For example, data made available by the Portuguese National Health Service (SNS, 2020) shows an increase in STI rates since 2017, including gonorrhea, chlamydia, and hepatitis B. Some authors have highlighted the need to develop tailored action plans to prevent this trend (Scott-Sheldon & Chan, 2020). For example, sexual health awareness should be increased in younger cohorts (e.g., adolescents; Reis et al., 2018; Shannon & Klausner, 2018). Other authors have focused on the antecedents of risky sexual decision-making to explain the rise of STI rates. For example, Alaei and colleagues (2016) argued that the availability of PrEP—highly effective for preventing HIV only—gave people a sense of protection that spilled-over to other STIs. In this line of research, a vast body of knowledge has shown that condom use behavior is predicted by individual (e.g., perceived self-control), behavioral (e.g., past condom use), interpersonal (e.g., condom use negotiation), and contextual (e.g., subjective norms) variables (for reviews, see Espada et al., 2016; Glanz et al., 2015). Even though motivations predict decision-making and behavior (e.g., Mishra & Lalumière, 2010), research tends to overlook if motivations can help us understand and predict sexual health behaviors.

The Regulatory Focus Theory (for a review, see Higgins, 2015) proposes that people more focused on prevention are motivated by safety and aim to avoid adverse outcomes, whereas people more focused on promotion are motivated by pleasure and seek to attain positive outcomes. Several studies have shown that prevention (vs. promotion) focused people are more aware of health threats and more likely to adopt health-protective behaviors (e.g., Rodrigues et al., 2019; Zou & Scholer, 2016), including being more careful with their

sexual behavior (Rodrigues et al., 2020). Extending these findings, we examined if being more focused on prevention, but not promotion, was associated with STI knowledge, past testing rates, threat perceptions, and condom use. We also examined if regulatory focus had unique and distinct associations with STI testing intentions and behavioral control over condom use.

Correlates of Condom Use

Past findings have highlighted diverse factors to understand why some people are more careful with their sexual health, and others overlook potential health risks. For example, medical history (e.g., past STI testing and diagnosis) has been associated with STI knowledge (Andersson-Ellström & Milsom, 2002; de Visser & O'Neill, 2013; Martin-Smith et al., 2018). However, knowing more about STIs is not necessarily predictive of condom use or STI testing intentions (Costa et al., 2018; Espada et al., 2016; Martin-Smith et al., 2018). For example, Reis and colleagues (2013) found that only one-third of their sample indicated having used condoms in the past year, even though they had good knowledge about HIV transmission and prevention (for similar results with STI knowledge, see Perera & Abeysena, 2018). Furthermore, a systematic review showed that although young adults had objective knowledge about different STIs, their condom use at last intercourse was around 30% (Samkange-Zeeb et al., 2011). This means that people who got tested or diagnosed with an STI tend to be more aware of the infection, but are not necessarily more likely to protect themselves or their sexual partners in the future.

There are also diverse theoretical models aimed to understand and improve sexual protective behaviors. For example, studies framed by the Health Belief Model (for a review, see Skinner et al., 2015) have shown that people who had more frequent condomless sex in the previous six months perceived greater susceptibility to disease and stronger intentions to get STI testing (de Visser & O'Neill, 2013; Martin-Smith et al., 2018). Extending these

findings, longitudinal studies have shown that people who perceived greater susceptibility to disease, and those who feared having acquired an STI, were more likely to have STI testing later on (Shepherd & Smith, 2017; ten Hoor et al., 2016). And yet, most of these models do not explicitly acknowledge the role of motivations in sexual decision-making. Exceptions are the Condom Use Experience Model (Sanders et al., 2012) according to which motivations improve condom use experiences (e.g., fewer errors in condom use), and the Information-Motivation Behavioral Skills Model (Fisher et al., 2006) according to which protective behaviors are shaped by a motivation to reduce risks of infection. However, the first model fails to operationalize the construct of motivations, and the second model operationalizes motivations as positive attitudes and intentions to enact protective behaviors. Hence, there is a dearth of research examining *if* and *how* individual motives in sexual behavior can shape sexual health decision-making (for a similar argument, see Browning et al., 2000; Cooper et al., 1998).

Individual Motives and Sexual Behavior

Past research has already shown that motives to enact specific courses of action are associated with sexual behavior. For example, people motivated to actively seek pleasure in sex (i.e., autonomous motives) report having more casual partners than those motivated to please others or gain something from that behavior (i.e., non-autonomous motives; Townsend et al., 2020). Similarly, people who endorse approach motives (i.e., those who seek to obtain positive outcomes such as sexual pleasure) are more likely to have casual sex and less likely to use condoms than people who endorse avoidance motives to have sex (i.e., those who seek to avert negative outcomes such as avoid conflicts; Browning et al., 2000; Cooper et al., 1998).

Related to this conceptualization of approach-avoidance motives, the Regulatory Focus Theory (Higgins, 2015) suggests that people can pursue their goals by having a focus on

promotion or prevention. People more focused on promotion are motivated by pleasure and advancement, whereas people more focused on prevention are motivated by security and protection. As discussed elsewhere, both regulatory foci entail motives to approach desired outcomes by adopting eager strategies to pursue new opportunities even if that means taking risks (i.e., promotion focus), or adopting vigilant strategies to maintain safety even if that means missing new opportunities (i.e., prevention focus; Scholer & Higgins, 2008). In the health domain, research has consistently shown that people more focused on prevention (vs. promotion) tend to take fewer risks with their health and safety (e.g., Avraham et al., 2016; Fuglestad et al., 2013; Zou & Scholer, 2016). Extending this framework to sexual health, Rodrigues and colleagues (2019) reasoned that being more focused on prevention in sexuality should motivate people to protect their sexual health in risky situations, whereas being more focused on promotion in sexuality should motivate people to obtain pleasure even at the risk of adverse health outcomes. Supporting this reasoning, the authors found that people more focused on prevention (vs. promotion) had stronger intentions to use condoms with casual partners in the next three months and were more aware of health threats. In another study, Rodrigues and colleagues (2020) suggested that regulatory focus can also shape other sexual health behaviors. Indeed, the authors found that people who engaged in condomless sex in the last three months were more focused on promotion (vs. prevention) and were more likely to have been diagnosed with an STI in the previous six months. In both studies, however, the authors used a combined regulatory focus index and did not examine if prevention and/or promotion focus had distinct associations with threat perceptions and sexual health behaviors.

Current Study

We conducted a cross-sectional study with a large sample of Portuguese adults to explore if individual motives for security (i.e., prevention focus) or pleasure (i.e., promotion focus) have unique contributions in sexual health decision-making. People more focused on

prevention (vs. promotion) in sexuality are more likely to have used condoms, are more aware of health threats, and have stronger intentions to use condoms (Rodrigues et al., 2019, 2020). Hence, people more focused on prevention in sexuality, and less focused on promotion, should also know more STIs (H1), have been tested for more STIs in the last six months (H2), be more concerned about with STIs (H3), perceive greater susceptibility to STI acquisition (H4), and have engaged in condomless sex less often in the last six months (H5). Additionally, people more focused on prevention scores, and less focused on promotion, should have stronger intentions to get tested for STIs in the next six months (H6) and have greater behavioral control over condom use (H7). We expected these latter associations to occur over and above other associations from known correlates of condom use, such as demographic variables (e.g., age, gender, relationship status; Corbett et al., 2009; Costa et al., 2018; Fridlund et al., 2014; Hock-Long et al., 2013), STI knowledge, past sexual health behaviors, and perceived susceptibility to infection (Andersson-Ellström & Milsom, 2002; Costa et al., 2018; de Visser & O'Neill, 2013; Espada et al., 2016; Guleria et al., 2018; Martin-Smith et al., 2018; Shepherd & Smith, 2017; ten Hoor et al., 2016).

Method

Participants

The survey was started 1467 times, but 631 people abandoned it before completion. The final sample comprised 836 participants with a mean age of 22 years and most were heterosexual (84.2%) women (67.5%) who completed high school (58.6%) and lived in urban areas (81.9%). Nearly half the sample was in a romantic relationship (49.5%) for a mean length of 2 years (see Table 1 for a detailed description).

-- Table 1 about here --

Procedure

This study was approved by the Ethics Committee at Iscte-Instituto Universitário de Lisboa (#55-2020). Data were collected between April and December 2019. Advertisements inviting people to take part in an online survey about sexual behavior were posted on social networking websites (e.g., Facebook). These advertisements stated that eligible participants had to be at least 18 years old and to have had sexual activity, and included a link for a survey hosted on Qualtrics. After accessing the survey, people were informed about the research team and that they would be asked to reflect upon their sexual experiences and sexual health. They were also informed that no compensation was offered by completing the survey. Lastly, they were informed that participation was anonymous and voluntary, that their answers were confidential at all times, and that they could omit any answer or withdraw from the study at any time without penalty. People could only proceed to the survey after providing their informed consent. The survey started with demographic questions (e.g., gender, age), followed by our main measures. Participants received a reminder if they left any questions unanswered but were allowed to proceed with the survey. At the end, participants were thanked and debriefed. Participants took, on average, 11 minutes to complete the survey. The resulting database does not contain any identifiable information (e.g., IP address) and is stored in a password-protected account to which only the research team has access.

Measures

Regulatory Focus in Sexuality

We measured regulatory focus in sexuality using a previously validated scale (Rodrigues et al., 2019). This scale includes items assessing prevention (three items; e.g., “Throughout my sex life I sometimes acted in ways that were objectionable, according to my education”) and promotion motives in sexuality (six items; e.g., “I am typically striving to fulfill my desires with my sex life”). Responses were rated on 7-point scales (from 1 = *Not at all true of me* to 7 = *Very true of me*). Items were mean aggregated in each subscale for this

study, with higher scores indicating a predominant focus on prevention ($\alpha = .77$) or promotion in sexuality ($\alpha = .86$). Both scores were negatively correlated, $r(836) = -.30, p < .001$, but treated separately in our analyses. For illustrative purposes, a paired-sample t -test revealed that participants were more focused on prevention than promotion, $t(835) = 5.83, p < .001, d = 0.18$.

Perceived Susceptibility to STI Acquisition

We developed an item to assess perceived susceptibility to STI acquisition. We asked participants to think about their sexual activity in the last six months and to indicate “How frequently did you worry about having acquired an STI?” (from 1 = *Rarely* to 7 = *Frequently*).

Condomless Sex Frequency

Following past research (Rodrigues et al., 2020), we assessed condomless sex frequency by asking participants to indicate, “How frequently did you have sex with your partner(s) without using a condom?” (from 1 = *Rarely* to 7 = *Frequently*).

Behavioral Control Over Condom Use

Using two items from past research (Devine-Wright et al., 2015), participants were asked to indicate their agreement with the items “I would be able to use a condom every time I have sex” and “I would be able to refuse sex if my partner(s) did not want to use a condom”. Responses were given in 7-point scales (from 1 = *Completely disagree* to 7 = *Completely agree*). Items were mean aggregated for this study, $r(836) = .38, p < .001$, with higher scores indicating greater behavioral control over condom use.

STIs: Knowledge, Concerns, and Testing

Lastly, we presented participants with a list of eight STIs (see Table 3). For each, they were asked: (a) “Do you know this STI?” (1 = *No* or 2 = *Yes*), (b) “Are you concerned with acquiring this STI?” (from 1 = *Not at all* to 7 = *Very much*), (c) “Did you get tested for this

STI in the last six months?" (1 = *No* or 2 = *Yes*), and (d) "How likely are you to get tested for this STI in the next six months?" (from 1 = *Not likely* to 7 = *Very likely*). These items were developed specifically for this study.

Analytic Plan

Data were analyzed using SPSS version 26 software. First, we examined the percentage of participants who knew and/or got tested for all STIs, for any of the STIs, and for none of the STIs presented to them. Then, we computed the number of known STIs and the number of tested STIs for each participant. To test our hypotheses, we computed overall correlations to examine if prevention and promotion scores were associated with the number of known STIs, number of tested STIs, concerns about STIs, perceived susceptibility to STIs, and condomless sex frequency. Then, we computed two hierarchical linear regressions to examine the extent to which prevention and promotion scores (Step 3) were uniquely associated with intentions to get tested for any STI, and with behavioral control over condom use, over and above demographic variables (Step 1), and all other continuous variables (Step 2).

Results

Preliminary Analysis

STI Knowledge and Past Testing

As shown in Table 2, we found high knowledge rates for each STI (> 70.2%), particularly high for HIV/AIDS (98.4%), except for trichomoniasis (36.2%). Overall, 31.9% of the participants knew all STIs, 99.4% knew at least one, and only 0.4% knew none of the STIs. In contrast, we found low rates of STI testing in the last six months (< 22%), with higher rates for HIV/AIDS (21.9%) and lower rates for trichomoniasis (9.2%). Overall, 7.8% of the participants got tested for all STIs, 25.2% got tested for at least one STI, and 74.3% got

tested for none. Detailed differences according to demographic variables are presented in the Appendix.

On average, participants indicated knowing seven of the eight STIs presented to them ($M = 6.59$, $SD = 1.52$). However, on average they only got tested for one of these STIs in the last six months ($M = 1.14$, $SD = 2.44$).

-- Table 2 about here --

Main Analyses¹

Regulatory Focus and Sexual Health Behaviors

Overall descriptive statistics and correlations between our main variables are presented in Table 3. Against our expectations, prevention scores were unrelated to STI knowledge or past STI testing, $ps > .086$. Also, participants more focused on prevention in sexuality were less concerned about STIs, $p < .001$, and perceived to be less susceptible to STI acquisition, $p < .001$. As expected, however, these participants had condomless sex less frequently, $p < .001$. In contrast, participants more focused on promotion knew more STIs, $p = .039$, got tested for more STIs in the last six months, $p = .027$, were more concerned about STIs, $p = .010$, and perceived to be more susceptible to STI acquisition, $p < .001$. As expected, these participants engaged in condomless sex more frequently, $p < .001$.

-- Table 3 about here --

Intention to Get Tested for STIs

Overall, participants reported overall weak intentions to get tested for any of the STIs presented to them ($M = 2.86$, $SD = 2.12$), $p < .001$ (one-sample t -test against the mid-point of the response scale). Results of the hierarchical regression analysis (see Table 4) showed that

¹ We also computed an index of regulatory focus by subtracting promotion scores from prevention scores (Rodrigues et al., 2019; 2020). In this case, higher (vs. lower) scores indicated that participants were more focused on prevention (vs. promotion) in sexuality. Results remained the same in all analyses. For example, results showed that intentions to get tested for STIs were negatively associated with the index score (i.e., were higher for participants more focused on promotion), whereas behavioral control over condom use was positively associated with index scores (i.e., were higher for participants more focused on prevention).

stronger intentions to get tested for STIs were reported by participants who identified as LGB+, $p = .027$, who resided in rural areas, $p = .024$, who got tested for more STIs in the last six months, $p < .001$, who had more concerned about STIs, $p < .001$, who perceive to be more susceptible to STI acquisition, $p < .001$, and who are more focused on promotion (but not prevention) in sexuality, $p < .001$. As shown in Table 4, the final model explained 27% of the variance, and adding regulatory focus scores in Step 3 significantly increased the adjusted R^2 , $p < .001$.

Behavioral Control Over Condom Use

Overall, participants reported good behavioral control over condom use ($M = 5.24$, $SD = 1.69$), $p < .001$ (one-sample t -test against the mid-point of the response scale). Results of the hierarchical regression analysis (see Table 4) showed that greater behavioral control over condom use was reported by women, $p < .001$, participants who identified as LGB+, $p = .005$, those in a romantic relationship, $p < .001$, those who had condomless sex less frequently, $p < .001$, and those who are more focused on prevention (but not promotion) in sexuality, $p = .011$. As shown in Table 4, the final model explained 19% of the variance, and once again adding regulatory focus scores in Step 3 significantly increased the adjusted R^2 , $p < .001$.

-- Table 4 about here --

Discussion

As a response to the increase in STI rates (CDC, 2019; ECDC, 2020; National Academies of Sciences, Engineering, and Medicine, 2021; SNS, 2020), we must continue to understand what is contributing to this rise (e.g., Alaei et al., 2016; Shannon & Klausner, 2018) and how we can prevent it (e.g., Costa et al., 2018; Glanz et al., 2015; Reis et al., 2018).

This cross-sectional study with a large sample of Portuguese adults replicated and extended past research framed by the Regulatory Focus Theory (Higgins, 2015). People motivated by security (i.e., prevention focus) actively strive to avoid taking risks with their health and security, are more aware of health threats, and more likely to have protective sexual behaviors, whereas those motivated by pleasure (i.e., promotion focus) actively strive to achieve positive outcomes, are more likely to take risks, and less likely to have protective sexual behaviors (e.g., Rodrigues et al., 2019, 2020; Zou & Scholer, 2016). Following this, we expected people more motivated by security to be more aware of threats and enact different behaviors to protect their health. In contrast, people more motivated by pleasure should be less likely to do so. Our results showed the unique contribution of regulatory focus for sexual health behaviors, albeit providing mixed-support for our hypotheses. Still, our pattern of results was more informative than contradictory. As expected, people more focused on prevention used condoms more consistently (H5) and reported greater behavioral control over condoms use (H7). Contrary to our hypotheses, however, they were *less* concerned about STIs (H3) and perceived to be *less* susceptible to STIs (H4). Moreover, prevention scores were unrelated to STI knowledge (H1), past STI testing (H2), or intentions to get tested for STIs (H6). The fact that people more focused on prevention used condoms more consistently and report having greater control over that specific behavior is likely to provide a sense of control and security over their sexual health. Consequently, these people may feel more confident in their sexual behavior, feel more protected against STIs, and overlook the need to get tested. In other words, there may be a trade-off between the maintenance of security and the possibility of having sexual activity less often (e.g., not having sex when condoms are unavailable) or with fewer partners.

We also found that people more focused on promotion had condomless sex more frequently in the last six months (H5). Contrary to our hypotheses, however, they knew *more*

STIs (H1), got tested for *more* STIs in the last six months (H2), were *more* concerned about STIs (H3), perceived to be *more* susceptible to STIs (H4), and had *stronger* intentions to get tested for STIs in the next six months (H6). Lastly, promotion scores were unrelated to behavioral control over condom use (H7). These findings suggest that people more focused on promotion are motivated to pursue sexual pleasure but at the same time seem to recognize the potential health risks of their behavior. Consequently, they feel less confident about their sexual health and have the need to get tested more frequently. In other words, there seems to be a trade-off between the pursuit of pleasure and the acceptance of certain health risks that can come with it (see also Browning et al., 2000; Cooper et al., 1998; Townsend et al., 2020). Aligned with this, Rodrigues and colleagues (2020) found that people who had condomless sex had were more focused on promotion and were more likely to have been recently diagnosed with an STI. Extending this study, we found that people more focused on promotion knew and got tested for more STIs in the last six months, which arguably explains their increased likelihood on being diagnosed with an STI.

Our results further showed an additional number of relevant findings worth noting. For example, participants knew most STIs, particularly HIV/AIDS, genital herpes, hepatitis B, gonorrhea, and syphilis. Despite their knowledge, however, past testing rates for each STI were reasonably low. Indeed, only one in four participants was tested for at least one of these STIs in the last six months. This rate was higher for HIV/AIDS, hepatitis B, and HPV, lower for genital herpes, and particularly low for trichomoniasis. Despite knowing most STIs, people were not concerned with acquiring each of these STIs, did not perceive to be particularly susceptible to acquiring each STI, nor did they have strong intentions to get tested for these STIs in the next six months. Notwithstanding, getting tested more STIs, being more concerned about STI acquisition, and being more susceptible to STIs were associated with stronger intentions to get tested for STIs in the next six months. In contrast, the number

of known STIs were unrelated to sexual health behaviors (Costa et al., 2018; Espada et al., 2016; Martin-Smith et al., 2018).

Results also showed that condomless sex frequency was not associated with intentions to get STI testing but instead was negatively associated with behavioral control over condom use. This finding is aligned with a review showing that condomless sex has weak empirical evidence in predicting STI risk (Falasinnu et al., 2015), but that past behaviors are likely to determine similar behaviors in the future (Teye-Kwadjo et al., 2018). Lastly, we also found that sexual health behaviors tend to be shaped by demographic variables. For example, people who identify as LGB+ had stronger intentions to get tested for STIs. This is arguably explained by the increasing STIs rates, including HIV/AIDS, among those who identify as non-heterosexual (CDC, 2019; ECDC, 2020; National Academies of Sciences, Engineering, and Medicine, 2021). Also, our results suggest that women in our sample have equal power in their relationships or sexual interaction, therefore having greater control over condom use (Woolf & Maisto, 2008). Behavioral control over condom use was also higher among people in a relationship. This finding seems counter-intuitive at first, given that the decision to abandon the use of condoms to increase sexual intimacy likely reflects the process of becoming sexually exclusive in the relationship (Corbett et al., 2009; Costa et al., 2018; Fridlund et al., 2014; Hock-Long et al., 2013). However, for most heterosexual partners condoms are mainly used as a contraceptive method rather than to prevent STIs (Cooper et al., 1999; Hock-Long et al., 2013), which is aligned with the finding that relationship status was not significantly associated with intentions to get tested for STIs.

Limitations and Future Research

Our online cross-sectional studies had some limitations that need to be acknowledged. For example, we did not include attention checks in this study. However, participants could abandon the survey without any penalty, were allowed to proceed with the survey with

missing responses and had no compensation upon survey completion. Moreover, the pattern of responses for each participant, and the average time allotted to participation, suggests that people took their time reading and responding to each question. Notwithstanding, future studies should seek to decrease the risk of random responses properly.

Also, the nature of our data does not allow us to establish causality. Future studies should employ a longitudinal design to extend our findings. For example, researchers should examine if people more focused on prevention in sexuality use condoms more frequently, have more control over their behavior, and perceive to be less susceptible to STIs over time, and its implications for the trade-off hypothesis. More specifically, if people more focused on prevention engage in sexual activity only when they can assure their health safety (e.g., using condoms), and to the extent that condom use is related to decreased sexual pleasure (e.g., Randolph et al., 2007), then they might need to find a balance between avoiding risks and having less sexual satisfaction. Furthermore, research has shown that trusting and feeling intimate with one's partner has been associated with condomless sex (Fortenberry, 2019). Hence, it would be interesting to examine how people more focused on prevention deal and act upon their sexual needs and desires, if they consider condom use as a barrier that prevents them from experiencing pleasure, and if they are likely to change their typical condom use behavior after agreeing to become sexually exclusive with their partners.

A longitudinal study would also allow to examine if people more focused on promotion in sexuality use condoms less frequently and perceive to be more susceptible to STIs over time, therefore having the need to get tested for STIs more often. However, they could become aware of their health when faced with a contextual change (e.g., having a positive STI diagnosis) and eventually adapt their condom use behavior, at least during treatment. Moreover, we did not ask participants the diagnosis of their past STI testing, did not assess specific knowledge regarding each STI (e.g., symptoms, treatment), nor examined how

threatening each STI was perceived to be. Arguably, certain STIs such as HIV/AIDS have more severe consequences for physical health, psychological well-being, and overall lifestyle. At the same time, advances in treatment allow people infected with HIV/AIDS to have a relatively stable and healthy lifestyle. Hence, it would be interesting to test the trade-off hypothesis. More specifically, understand the extent to which people more focused on promotion balance the need to pursue pleasure, the risk of acquiring different STIs, and the burden of treatment.

Future studies should also seek to examine if alternative forms of STI testing (e.g., self-testing kits) increase the likelihood of getting tested and using condoms in the future (Salway et al., 2019; Wilson et al., 2019). This information would be valuable to the Portuguese context, as self-tests are available to purchase in pharmacies since late 2019 but are still restricted to HIV testing.

Conclusion and Implications

This study clearly highlights how different motivations in sexuality play crucial roles in sexual health decision-making. People more focused on prevention focus enacted more condom use, are more willing to continue that course of action, and have more control over that behavior. Despite having enacted less condom use, people more focused on promotion enacted more STI testing and are more willing to continue that course of action. These findings are particularly relevant for public health because people can have an STI without visible symptoms and increase sexual health risks to themselves and others. Our findings are also relevant from an intervention perspective, suggesting the need to have tailored awareness campaigns according to sexual health behaviors. For example, campaigns to increase condom use should highlight prevention motives in sexuality, that are related to security and the risks of having condomless sex. In contrast, campaigns to increase STI testing should highlight motives in sexuality that are related to pleasure, and the threat of acquiring an STI.

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Regulatory Focus in Sexuality and Sexual Health

Table 1

Demographic Characteristics

	<i>N</i>	<i>M (SD) or %</i>
Age (min. = 18, max. = 64)	835	22.27 (5.14)
Gender		
Female	564	67.5
Male	269	32.2
Prefer not to disclose	3	0.4
Sexual orientation		
Heterosexual	704	84.2
Bisexual	77	9.2
Lesbian/gay	38	4.5
Other (e.g., asexual, pansexual, queer)	9	1.1
Prefer not to disclose	8	1.0
Education level		
Less than 10 years	14	1.7
High school graduate	491	58.6
University graduate	275	32.8
Master or Doctoral degree	55	6.6
Residence		
Urban areas	685	81.9
Rural areas	151	18.1
Relationship status		
Single, without a relationship	422	50.5
In a romantic relationship	414	49.5
Relationship length in years (min. = .08, max. = 20)	391	2.23 (2.21)

Regulatory Focus in Sexuality and Sexual Health

Table 2

Knowledge, Concerns about Acquisition, Past Testing and Intentions to Get tested for each STI

	Know the STI	Concerned about acquiring the STI	STI past testing (last 6 months)	Intention to get STI testing (next six months)
	%	<i>M (SD)</i>	%	<i>M (SD)</i>
STIs				
HIV/AIDS	98.4	2.43 (2.02)	21.9	3.04 (2.27)
HPV	70.2	2.33 (1.92)	15.8	2.93 (2.23)
Chlamydia	81.2	2.28 (1.90)	13.0	2.81 (2.17)
Gonorrhea	92.9	2.27 (1.89)	13.3	2.78 (2.15)
Hepatitis B	95.8	2.28 (1.90)	17.0	2.86 (2.20)
Syphilis	91.2	2.28 (1.91)	13.7	2.79 (2.16)
Genital herpes	96.1	2.41 (1.97)	11.7	2.81 (2.17)
Trichomoniasis	36.3	2.16 (1.81)	9.2	2.73 (2.14)
All STIs	31.9	2.31 (1.83)	7.8	2.86 (2.11)
Any of the STIs	99.4	-	25.2	-
None of the STIs	0.5	-	74.3	-

Regulatory Focus in Sexuality and Sexual Health

Table 3

Overall Descriptive Statistics and Correlations

	Overall	Correlations					
	<i>M (SD)</i>	1	2	3	4	5	6
1. Prevention focus in sexuality (range: 1-7)	5.22 ^a (1.60)	-					
2. Promotion focus in sexuality (range: 1-7)	4.75 ^a (1.34)	-.29 ^{***}	-				
3. Number of known STIs (range: 0-8)	6.57 ^a (1.52)	-.06	.08 [*]	-			
4. Number of tested STIs (range: 0-8)	1.14 ^b (2.44)	-.06	.07 [*]	.10 ^{**}	-		
5. Concerns with STIs (overall) (range: 1-7)	2.31 ^b (1.83)	-.12 ^{***}	.09 ^{**}	.03	-.03		
6. Perceived susceptibility to STIs (range: 1-7)	1.56 ^b (1.27)	-.43 ^{***}	.12 ^{***}	.09 ^{**}	.04	.25 ^{***}	-
7. Condomless sex frequency (range: 1-7)	3.81 ^b (2.58)	-.22 ^{***}	.20 ^{***}	.05	-.02	-.06	.17 ^{***}

Note. Superscript letter in the Overall column denote that mean scores are significantly above (^a) or below (^b) the mid-point of the response scale, $ps < .029$. Degrees of freedom varied in function of missing cases.

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

Regulatory Focus in Sexuality and Sexual Health

Table 4

Hierarchical Linear Regressions for Sexual Health Behaviors

	Intention to get tested for STIs			Behavioral control over condom use		
	Step 1	Step 2	Step 3	Step 1	Step 2	Step 3
	<i>B</i> (<i>SE</i>)	<i>B</i> (<i>SE</i>)	<i>B</i> (<i>SE</i>)	<i>B</i> (<i>SE</i>)	<i>B</i> (<i>SE</i>)	<i>B</i> (<i>SE</i>)
Step 1						
Gender (1: Woman; 2: Man)	0.21 (.16)	-0.02 (.14)	-0.03 (.14)	-0.42*** (.12)	-0.44*** (.12)	-0.44*** (.11)
Age	-0.00 (.02)	-0.03 (.02)	-0.02 (.01)	-0.00 (.01)	0.01 (.01)	0.01 (.01)
Sexual orientation (1: Heterosexual; 2: LGB+)	0.81*** (.19)	0.41* (.17)	0.37* (.17)	0.17 (.15)	0.33* (.14)	0.39** (.14)
Education (1: ≤ 12 years; 2: > 12 years)	0.20 (.17)	.21 (.15)	0.13 (.15)	-0.01 (.14)	0.05 (.13)	0.07 (.13)
Residence (1: Rural area; 2 = Urban area)	-0.33 (.19)	-0.38* (.17)	-0.38* (.17)	-0.27 (.15)	-0.14 (.14)	-0.10 (.14)
Relationship (1: single; 2 = in relationship)	-0.23 (.15)	-0.07 (.14)	-0.08 (.14)	0.49*** (.12)	0.77*** (.12)	0.70*** (.12)
Step 2						
Number of known STIs		0.07 (.04)	0.06 (.04)		-0.05 (.04)	-0.05 (.04)
Number of tested STIs		0.31*** (.03)	0.31*** (.03)		0.02 (.02)	0.02 (.03)
Concerned with STIs		0.27*** (.04)	0.25*** (.04)		0.05 (.03)	0.05 (.03)
Susceptibility to STI acquisition		0.26*** (.05)	0.23*** (.06)		-0.17*** (.05)	-0.09 (.05)
Frequency of condomless sex		0.01 (.03)	-0.01 (.03)		-0.23*** (.02)	-0.22*** (.02)
Step 3						
Prevention focus in sexuality			-0.02 (.05)			0.17*** (.04)
Promotion focus in sexuality			0.22*** (.05)			0.05 (.04)
Adjusted R^2	.03	.25	.27	.03	.18	.19
ΔF	4.70***	49.64***	10.60***	5.78***	28.76***	8.59***

Note. *B* = unstandardized regression coefficients, *SE* = standard error. Collinearity statistics, as represented by the Variance Inflation Factor (VIF), revealed absence of collinearity between predictors. VIFs ranging from 1.01 to 1.43 in both regressions.

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

Appendix

Rates of STI Knowledge and Past Testing for Each STI, According to Demographic Variables

	Overall (%)	Gender		Sexual orientation		Education		Residence		Relationship Status	
		Women (%)	Men (%)	Heterosexual (%)	LGB+ (%)	≤ 12 years (%)	> 12 years (%)	Rural (%)	Urban (%)	Single (%)	In a relationship (%)
STI knowledge											
HIV/AIDS	98.4	98.8	97.8	98.3	99.2	98.2	98.8	97.4	98.7	98.3	98.5
HPV	70.2	74.3 ^a	61.6 ^b	69.3	74.0	64.0 ^b	79.4 ^a	52.7 ^b	74.0 ^a	70.2	70.1
Chlamydia	81.2	82.1	79.0	79.8 ^b	88.6 ^a	78.7 ^b	84.4 ^a	75.3	82.4	84.1 ^a	78.1 ^b
Gonorrhea	92.9	92.3	94.0	92.0 ^b	97.6 ^a	91.8	94.5	93.3	92.8	94.1	91.6
Hepatitis B	95.8	95.9	95.5	95.6	96.7	94.6	97.6	95.3	95.9	95.5	96.1
Syphilis	91.2	89.7	94.0	90.4	95.1	89.3 ^b	93.9 ^a	90.7	91.3	93.6 ^a	88.7 ^b
Genital herpes	96.1	96.2	95.9	95.8	97.6	95.6	97.0	94.0	96.6	96.4	95.8
Trichomoniasis	36.3	37.1	35.0	36.8	33.6	28.5 ^b	47.6 ^a	29.7	37.7	44.8 ^a	27.4 ^b
Know all	31.9	33.4	29.2	32.1	31.1	24.9 ^b	42.2 ^a	18.8 ^b	34.8 ^a	39.8 ^a	23.8 ^b
Know any	99.4	99.5	99.3	99.4	99.2	99.4	99.4	99.3	99.4	99.8	99.0
Know none	0.5	0.4	0.7	0.4	0.8	0.4	0.6	0.0	0.6	0.2	0.7
STI testing (last 6 months)											
HIV/AIDS	21.9	19.0 ^b	27.8 ^a	19.1 ^b	37.8 ^a	19.8	25.1	21.8	21.9	20.1	23.7
HPV	15.8	15.3	16.7	14.3 ^b	25.0 ^a	15.2	16.9	14.7	16.1	15.3	16.4
Chlamydia	13.0	11.3	16.2	11.5 ^b	21.6 ^a	12.5	13.8	15.4	12.4	13.1	12.9
Gonorrhea	13.3	10.9 ^b	18.2 ^a	11.4 ^b	24.1 ^a	13.5	13.1	15.3	12.9	13.3	13.3
Hepatitis B	17.0	14.0 ^b	23.3 ^a	14.4 ^b	32.5 ^a	16.4	18.1	16.0	17.3	16.2	17.9
Syphilis	13.7	10.5 ^b	20.2 ^a	11.0 ^b	29.1 ^a	13.4	14.1	14.0	13.6	13.5	13.9
Genital herpes	11.7	9.6 ^b	15.7 ^a	9.7 ^b	23.1 ^a	12.0	11.2	14.0	11.1	11.5	11.8
Trichomoniasis	9.2	8.3	11.2	8.1 ^b	15.8 ^a	9.2	9.1	9.9	9.0	9.3	9.1

Tested for all	7.8	6.8	10.2	7.1	12.8	7.7	8.1	8.3	7.8	7.8	7.9
Tested for any	25.2	23.4	28.8	22.0 ^b	43.3 ^a	23.7	27.5	25.2	25.2	22.8	27.6
Tested for none	74.3	76.2	70.4	77.5 ^a	55.9 ^b	75.6	72.3	74.1	74.3	76.7	71.7

Note. For gender comparisons we removed participants that did not disclose their gender ($n = 3$). For sexual orientation comparisons we removed participants that did not disclose their sexual orientation ($n = 8$). Different superscript within each demographic column denote significant differences between the groups.

Summary

. Women had higher knowledge rates for HPV, $p < .001$, whereas men were more likely to have been tested for HIV, $p = .006$, gonorrhea, $p = .007$, hepatitis B, $p = .002$, syphilis, $p < .001$, and genital herpes, $p = .016$. No other differences were found, $ps > .057$.

. LGB+ participants had higher knowledge rates for chlamydia, $p = .029$, and gonorrhea, $p = .043$, were more likely to have been tested for HIV, $p < .001$, HPV, $p = .005$, chlamydia, $p = .005$, gonorrhea, $p < .001$, hepatitis B, $p < .001$, syphilis, $p < .001$, genital herpes, $p < .001$, and trichomoniasis, $p = .015$. Overall, LGB+ participants were more likely to have been tested for any of the STIs, $p < .001$, whereas heterosexual participants were more likely to not have been tested for these STIs, $p < .001$. No other differences were found, $ps > .053$.

. More educated participants had higher knowledge rates for HPV, $p < .001$, chlamydia, $p = .036$, hepatitis B, $p = .031$, and trichomoniasis, $p < .001$, and were more likely to know all these STIs, $p < .001$. No other differences were found, $ps > .055$.

. Participants living in urban areas had higher knowledge rates for HPV, $p < .001$, and were more likely to know all these STIs, $p < .001$

No other differences were found, $ps > .057$.

. Single participants had higher knowledge rates for chlamydia, $p = .036$, syphilis, $p = .018$, trichomoniasis, $p < .001$, and were more likely to know all these STIs, $p < .001$. No other differences were found for knowledge, $ps > .125$.