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Self-Disgust and Sexual Functioning: A Scenario-Based Study Testing the Ability of Sex-Related Experiences to Elicit Self-Directed Disgust

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ABSTRACT

Increasing evidence indicates that disgust might compromise sexual functioning and can contribute to sexual problems. Although the stimuli and conditions that elicit disgust vary greatly across individuals, they cluster in three categories of disgust elicitors: Stimuli that are associated with an increased risk of the transmission of infectious diseases (pathogen disgust), stimuli that signal poor mating quality and may jeopardize reproductive success (sexual disgust), and behaviors that violate social norms (moral disgust). It has been argued that each of these categories of disgust may interfere with sexual responses. Thus far, research on the role of disgust in sexual contexts focused on external stimuli (e.g., sperm). Yet, recently it has been proposed that disgust can also become directed to features of the self. Such self-directed disgust may also apply to sexual contexts and contribute to sexual problems. As a first step to explore the relevance of self-disgust in sexual functioning, we tested if indeed particular sexual experiences have the ability to elicit self-disgust. Using a within subject design, participants (N = 124; all women) imagined themselves as well as others experiencing a series of sex-related scenarios, each relevant for one of the three categories of disgust, and subsequently rated their self-disgust. For all types of disgust, the scenarios evoked self-disgust, and the "self-perspective" elicited significantly more self-disgust than the "other-perspective." These findings support theoretical models pointing to the relevance of taking self-disgust into consideration as a factor that may compromise sexual functioning. Future research should test whether this also holds for men.

Disgust has been conceptualized as a first line of defense to protect humans from contamination by infectious agents (Curtis et al., 2011; Oaten et al., 2009). Via eliciting the overwhelming urge to withdraw from disgusting cues, disgust facilitates the avoidance of physical contact with and ingestion of pathogens. Because sexual behaviors imply massive pathogen exposure (e.g., a single 10 second French kiss has been shown to involve the transfer of 80 billion bacteria, Kort et al., 2014), sexual stimuli and behaviors are obvious candidates for eliciting disgust (de Jong et al., 2009; Stevenson et al., 2011). In line with this, it has been shown that indeed sexual by-products (e.g., saliva, sperm) can be strong elicitors of disgust (e.g., van Overveld et al., 2013). To the extent that disgust is the dominant response within the context of sexual behaviors, this will interfere with the development or persistence of sexual arousal (Borg et al., 2019; de Jong et al., 2013). Consistent with the view that heightened disgust may compromise "healthy" sexual responding, it has been shown that women with an inability of having sexual intercourse showed higher levels of disgust for stimuli contaminated with sexual by-products than women without sexual problems (van Overveld et al., 2013).

Next to stimuli that are associated with an increased risk of the transmission of infectious disease (eliciting so-called pathogen disgust; Tybur et al., 2009), there are two other distinct categories of disgust elicitors. First, it has been found that disgust can also be elicited by stimuli that signal poor mating quality and thus may jeopardize our reproductive success. This type of so-called sexual disgust (Tybur et al., 2009) can be elicited when considering having sex with individuals with a high genetic similarity (e.g., close relative) or with abnormalities in physical appearance. This may give rise to problems in sexual functioning when, for example, the physical appearance of the sex partner changed significantly as a result of an illness (de Jong & Borg, 2015; Manderson, 2005). Second, it has been found that disgust can be elicited by behaviors that apparently violate important social norms (so-called moral disgust; Tybur et al., 2009). For example, parents who grew up in a strict heterosexual peer group may react with disgust when knowing their daughter is having sex with another woman (or their son with another man), because their child's behavior violates the heterosexual standard of the parent's reference group. It has been proposed that this type of socio-moral disgust serves the protection and internalization of (sub)culture-based rules (Rozin et al., 1999; Tybur et al., 2009). Moral disgust might interfere with sexual functioning if, for example, people have acquired strict moral rules concerning sexual behaviors, or even more explicitly learned that sex is dirty altogether. This may then strongly influence individuals' subsequent emotional responding toward particular sexual behaviors in later life, which may contribute to the generation of sexual complaints (Borg et al., 2011).

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Thus far, theories and research about the role of disgust in sexual contexts focused on disgust elicited by external sex-relevant stimuli and behaviors, and provided evidence for the view that all three types of disgust can compromise healthy sexual functioning and may give rise to sexual problems (Borg & de Jong, 2021; de Jong & Peters, 2009; de Jong et al., 2013). Yet, disgust is not only elicited by external stimuli, it can also become directed to stable features of the self (Clarke et al., 2018; Powell et al., 2015). Such self-directed disgust (self-disgust) may also apply to sexual contexts and potentially contribute to the development of sexual problems (de Jong & Borg, 2015). As a first step, it would be important to test if indeed particular sexual experiences have the ability to elicit self-disgust and whether this applies for each type of disgust category (i.e., pathogen, sexual, and moral).

Pathogen self-disgust could be defined as an intense feeling of having been polluted (an internal sense of dirtiness), elicited by a kind of mental contamination. In such mental pollution, the contaminant is a person, an act, or a thought, instead of an invisible trace or substance (e.g., body-fluid, bacteria). While physical pathogen contamination threatens the integrity of one's physical body, the ideational type of (self-)contamination seems generated by perceived violations of the embodied self. Thereby, it threatens the integrity ("health") of the core self, rather than the actual physical constitution. Sexual assault may perhaps be the ultimate violation to the core self, which might help explain the clinical observation that self-disgust is a common symptom following sexual abuse or assault (Badour, Feldner, Babson et al., 2013; Badour et al., 2014; Dyer et al., 2015; Smith et al., 2015). Such type of self-disgust may compromise sexual functioning as it may promote avoidance of sex-relevant stimuli that may elicit this intense feeling of being contaminated (including intimate physical contact with others; Steil et al., 2011).

In addition, based on findings that deformed bodies can elicit pathogen disgust (Manderson, 2005), it could be hypothesized that similar physical changes in one's own body may also lead to pathogen self-disgust. This idea is supported by research that has shown heightened levels of self-disgust in cancer patients, possibly driven by wounds and incontinence (Azlan et al., 2017a; Powell et al., 2016). Self-disgust related to physical changes in one's body may interfere with sexual functioning via eliciting strong avoidance of intimate behaviors that might elicit this type of self-disgust. And when the person is nevertheless getting involved in intimate behaviors, the elicited (self-)disgust may interrupt the generation of sexual arousal.

Sexual self-disgust may arise when low mating qualities are attributed to the self. For instance, sexual self-disgust can be due to physical aspects that may be associated with decreased youth and fertility such as being extremely overweight or having physical deformities. Although thus far research on sexual self-disgust is scarce, there is some evidence indicating that being overweight is associated with self-disgust (Palmeira et al., 2019). Furthermore, individuals could perceive themselves as having low mating qualities when they receive and internalize disgust reactions from others or interpret rejection as having low mating qualities. Sexual self-disgust eliciting experiences may include being cheated on or never being considered as a dating partner (de Jong & Borg, 2015). Anecdotal evidence described by Rachman (2010) supports this theory. Also in this case, sexual approach behavior may be inhibited as a means to avoid the experience of (sexual) self-disgust.

Moral self-disgust may arise when a transgression of an individual's social norms occurs. Accordingly, sex-related moral self-disgust might occur when an individual's own behavior or thoughts do not align with their own morals (e.g., having cheated on one's partner, fantasies about sex with children; de Jong & Borg, 2015). Research by Rachman et al. (2012) showed that participants reported higher feelings of self-disgust after they imagined themselves displaying immoral sexual behavior, like kissing an unwilling receiver and/or betraying friends with sexual behavior. Also outside the specific context of sexual morals, it has been found that thinking back to past unethical deeds resulted in feelings of self-disgust (Zhong & Liljenquist, 2006). When sexual behavior (e.g., having sex with a partner) activates moral self-disgust eliciting memories (e.g., about one's cheating), this may interrupt the generation of sexual arousal and give rise to sexual difficulties. It may also more generally motivate avoidance of sexual intimacy with their sex partner as a means to prevent the experience of (self-)disgust.

The Current Study

The major aim of this study was to systematically examine whether the proposed types of sex-related experiences can indeed trigger self-disgust. We explored the triggers for sex-related self-disgust in a similar fashion as in earlier research on mental contamination as exemplified by the "dirty kiss paradigm" originally designed by Fairbrother et al. (2005). In the experimental condition of this paradigm, participants were instructed to imagine themselves receiving an involuntary kiss. The feeling of dirtiness arising from this experimental manipulation has been shown in various experiments (e.g., Elliott & Radomsky, 2009; Herba & Rachman, 2007; Millar et al., 2016) and fits with the idea that pathogen self-disgust may arise from experiences inducing (mental) contamination. Subsequent research found preliminary evidence for the emergence of moral self-disgust when participants were put in the perspective of the perpetrator who kissed another person without consent (e.g., Rachman et al., 2012; Zhong & Liljenquist, 2006).

Following a similar scenario-based approach, the current study relied on sex-relevant scenarios to test their potency to elicit (self-) disgust. To test the ability of sex-related experiences to elicit pathogen self-disgust, we designed scenarios that involved violations of the embodied self (e.g., sexual assault); to test the potency of sex-related experiences to elicit sexual self-disgust, we used scenarios involving sexual rejection by potential sex partners; and to test the ability of sex-related behaviors to elicit moral self-disgust, we used scenarios involving moral transgressions (e.g., cheating on one's partner). Self-disgust following the scenarios was not only indexed by subjective ratings of self-disgust and repulsion of the self, but also by the ratings of participants' behavioral tendencies in response to the scenarios. More specifically, inspired by the work of Herba and Rachman (2007), we assessed the urge to wash as an additional (indirect) measure of self-disgust. We tested the core hypothesis that each type of sex-

relevant scenario would be effective in eliciting self-disgust as indexed by heightened feelings of self-disgust/repulsion as well as by a heightened urge to wash.

In this first study on self-directed disgust within the context of sexual functioning, we tailored the scenarios to female participants. Since women are typically more prone to experience self-disgust than men (Ille et al., 2014), we anticipated that women would also be relatively sensitive to sexual experiences as triggers of self-disgust. Thus, in an attempt to optimize the sensitivity of our design as a first test of the ability of sexual experiences to elicit self-directed disgust within the context of sexual experiences, we decided to first focus on female participants.

As a subsidiary issue, we examined the potentially moderating role of trait disgust on the level of self-disgust elicited by the scenarios. Previous research indicated that individuals with a relatively low threshold for experiencing disgust (trait disgust propensity; DP) and a relatively strong inclination to consider the experience of disgust as a negative emotional feeling (trait disgust sensitivity: DS) also showed higher scores on trait-measures of self-disgust (Azlan et al., 2017b; Powell et al., 2016; Stasik-O'Brien & Schmidt, 2018; von Spreckelsen et al., 2018), state self-disgust (von Spreckelsen et al., 2018), the urge to wash (Mitte, 2008), and avoidance tendencies (Campbell et al., 2020). Following this, we hypothesized that the level of state self-disgust as elicited by the current scenarios, in terms of feelings of self-disgust and the urge to wash, would be relatively high in people with high DP and high DS.

Method

Participants

This study was based on a sample of 124 female participants (age; M = 19.7, SD = 2.0) who were all undergraduate students at the University of Groningen. Participants were recruited via the internal university system in which participation in the study earned mandatory course credits. The nationality of the participants consisted mainly of German (44.4%) or Dutch (36.3%) individuals while the remainder of the participants had over 20 different nationalities (19.3%). Furthermore, 44.4% of the participants were currently in a relationship ranging from 1 month to 7 years (months; M = 21.8, SD = 14.7). In order to get a valid measurement of the urge to wash resulting from the sexual scenarios, participants were asked whether they suffered from repetitive hygienic behavior and, if so, whether they were diagnosed with obsessive-compulsive disorder or obsessive-compulsive personality disorder. None of the participants suffered from repetitive hygienic behaviors, so no participants needed to be excluded from the study. The study was approved by the Ethical Committee of Psychology (ECP-code: 14235-NE).

Materials

Experimental Manipulation

Scenarios. Different scenarios were created to specifically elicit each of the three types of sex-related self-disgust: Pathogen, sexual, and moral self-disgust. Two scenarios involving the violations of the embodied self were designed to elicit sex-relevant pathogen self-disgust – one scenario regarding experiencing sexual assault and one regarding a breast amputation. In order to elicit sexual self-disgust, we used three scenarios involving sexual rejection – either rejection by the participant's imagined boyfriend because of her body weight, or due to vaginismus, or involving random rejection as a sex partner by an unknown person. Two scenarios aimed to elicit moral self-disgust – one regarding cheating on one's partner and one regarding sex with a teenager.

All of the seven scenarios had two versions. In the experimental version (self-perspective), participants were the main character and had to imagine that they personally experienced the given scenario. The control version (other-perspective) in which the participants "experienced" the disgust-relevant event as a non-involved observer was added to the design as a reference/baseline condition. The other perspectives were included to control for (self-)disgust elicited by the sexual scenario itself. For being an optimal control condition, the control scenarios were designed to be similar to the experimental scenarios in all respects except for the participants' perspective. The 14 scenarios were presented to the participants in a randomized order. The exact scenarios can be accessed from Figshare (https://figshare.com/).

Manipulation Check. To verify whether participants were generally successful in following the imagination instruction, and to assess whether this would still be the case when primed in the perspective of the main character, participants were asked the question: "To what degree were you able to put yourself in the scenario?." To test whether the participants could relate to the content of the scenarios they were asked: "How important is the experience described in the scenario for you?." The participants responded on a Visual Analog Scale (VAS) ranging from 0 = *Not at all* to 100 = *Very much.*

Self-Disgust and Washing Behavior. The effect of the different scenarios on self-disgust was indexed by two measures. First participants were asked to rate their subjective feelings of self-directed disgust ("I feel revolting" and "I feel self-disgust"). Second, consistent with the approach of Herba and Rachman (2007), participants rated their urge for carrying out a series of compensatory cleansing behaviors ("I feel the urge to . . . ": (i) wash, (ii) rinse my mouth, (iii) spit, (iv) drink some water, (v) brush my teeth, (vi) use mouthwash, (vii) wash my face, (viii) wash my hands, (ix) take a shower) and how dirty they felt. Participants could provide their ratings on a VAS from 0 = *Not at all* to 100 = *Very much.*

The internal consistency of the subjective self-directed disgust questions ranged between α = .75 and α = .90 across the 14 scenarios. The internal consistency of the disgust induced washing behaviors ranged between α = .86 and α = .94.

Trait Disgust Measures

Self-Disgust. To measure habitual self-disgust (for descriptive purposes), the Self-Disgust Scale was used (SDS; Overton et al., 2008). The SDS consists of 18 items. 12 of the items measure two different components: "disgusting-self" and "disgusting-ways." "Disgusting-self" measures a more constant form of self-disgust that mainly focuses on appearance and "disgusting-ways" measures a more

flexible form of self-disgust mainly based on behaviors. The two components together form the total self-disgust score. All items were measured on a 7-point Likert scale from 1 = *Strongly agree* to 7 = *Strongly disagree* (Overton et al., 2008). The total self-disgust score showed very high internal consistency (α = .87 in the current study and α = .91 in Overton et al., 2008) and excellent test-retest reliability (*r* = .94; Overton et al., 2008).

Disgust Propensity and Disgust Sensitivity. Disgust propensity and disgust sensitivity were measured by the Disgust Propensity and Sensitivity Scale-Revised (DPSS-R; van Overveld et al., 2006). Both constructs were measured by eight items[1] answered on a scale from 1 = *Never* to 5 = *Always*. For both eight-item scales the internal consistency was satisfactory (α = .73 for DP and α = .69 for DS).

Procedure

Participants were invited to a lab in the Heymans University Building. The participants were provided with standard ethical information and received a questionnaire package. The package contained (in the following order): a separate informed consent, demographic questions, the SDS, the 14 scenarios in one of four randomized orders (each scenario was followed by the self-disgust, urge to wash and impact of the manipulation measurements) and the DPSS-R. After completion of the study, the participants were debriefed.

Data Reduction and Analysis

Self-disgust was indexed by two measures: a subjective self-directed disgust score which is composed of two questions ("I feel revolting" and "I feel self-disgust") and an indirect measure based on disgust-induced washing behaviors which is composed of nine compensatory cleansing behaviors. Mean subjective self-disgust and mean washing scores were computed for the two perspectives (self and other) for all three types of disgust, resulting in a total of 12 variables. The internal consistency between the different questions per type of disgust was sufficient. The internal consistency of the subjective self-disgust questions per type of disgust ranged between α = .72 and α = .89 and the internal consistency of the washing behaviors ranged between α = .88 and α = .95. 1.5% of the data on the self-disgust or washing questions were missing; the data was replaced by the mean subjective self-disgust or the mean washing score of the specific scenario for that particular participant. The 0.5% missing data on the DPSS-R items was replaced by the participants subscale mean.

To verify the effectiveness of the manipulation, the degree to which participants could imagine themselves in a scenario and the perceived relevance and importance of a scenario were computed. As a further check of the effectiveness of the stimulus materials, we examined the mean "ability to imagine" and "importance of the incident" scores as a function of perspective and type of self-disgust.

To test whether the three types of triggering scenarios indeed led to self-disgust and washing behavior, two-way repeated measures ANOVA's (RM-ANOVA's) were conducted, one with subjective disgust and one with the urge to wash as the dependent variable. The type of self-disgust (3 levels: pathogen, sexual, and moral self-disgust) and the perspective (2 levels: self and other) were used as the within-subject factors. To explore if the impact of the manipulations varied as a function of trait disgust, we subsequently conducted two RM-ANCOVA's, one with DP and one with DS as covariates. Adjustments for multiple comparisons were made by a Bonferroni correction. The assumption of no outliers was tested by saving and inspecting the studentized residual and the assumption of normality was tested by inspecting the studentized residuals and the Q-Q plots. The assumption of sphericity was tested with Mauchly's test of sphericity, and when indicated, a Huynh-Feld correction was used.

Results

Manipulation Check and Descriptives

The mean "ability to imagine" and "importance of the incident" scores are presented in Table 1, as a function of condition and type of self-disgust, respectively. Attesting to the validity of the scenarios, participants' ratings indicated that they generally were well able to empathize with the scenarios (imagine mean scores varied between 62 and 73). This was evident for both conditions (thus also for the self-perspective in which participants were primed in the perspective of the "victim"). In addition, participant ratings showed that they generally considered the to-be-imagined-scenario as quite important (with all mean scores > 44), and in line with the manipulation the importance was especially pronounced in the self-perspective in which they were put in the perspective of the person directly involved ("victim") in the scenario (with all mean scores > 67). The Mean SDS score was M = 32.94 (SD = 10.09), the mean DP subscale score was M = 22.61 (SD = 3.79), and the mean DS subscale score was M = 19.04 (SD = 4.51).

Sex-Relevant Self-Disgust and Washing Behavior

Subjective Self-Disgust

The assumption of no outliers was violated (5 outliers were found in all six combinations of levels) but normality was assumed in almost all combinations of the levels. However, the results did not differ when removing the outliers. The analysis regarding subjective self-disgust, with a Huynh-Feld correction applied, showed a significant interaction effect of type and perspective [$F(1.87, 229.74) = 26.58$, $p < .001$, $\eta^2 = .18$]. Analyses of the simple main effects showed that in line with predictions for all types of disgust, elicited disgust was significantly higher for the self than for the other perspective (see Table 3). Specifically for the self-perspective, elicited

[1]These scales were used because the six-item scales as recommended by Fergus and Valentiner (2009) and van Overveld et al. (2010) had an insufficient internal consistency in the current sample (α = .61 for DP and α = .60 for DS).

Table 1. Means and standard deviations of the imagine- and the importance scores for all three types of disgust.

		Self-perspective		Other-perspective	
		Mean	SD	Mean	SD
Pathogen disgust	Importance score	76.79	18.77	59.25	19.80
	Imagine score	73.38	19.09	68.75	18.61
Sexual disgust	Importance score	67.84	18.68	51.31	18.38
	Imagine score	71.73	18.88	64.73	17.35
Moral disgust	Importance score	67.20	22.98	44.08	21.70
	Imagine score	68.94	21.99	62.81	20.87

disgust varied across types of disgust (see Table 3). As can be seen in Table 2, disgust was most pronounced for moral disgust and least intense for pathogen disgust, with sexual disgust in between.

Disgust sensitivity did not significantly interact with the perspective [F (1,122) = 0.43, p = .514, η^2 = .00], nor did disgust propensity [F (1,122) = .60, p = .440, η^2 = .01].

Urge to Wash

The urge to wash was relatively normally distributed over all combination of levels and in only two combinations the assumption of no outliers was violated. Removing the two outliers in all six combinations of levels did not affect the results. The analysis regarding the urge to wash showed a significant interaction effect of type and perspective of disgust [F (2, 245.43) = 64.87, p < .001, η^2 = .35]. Analyses of the simple main effects showed that in line with predictions, elicited urge to wash was significantly higher for the self than for the other perspective, for all types of disgust (see Table 4). For both the self- and the other-perspective, elicited urge to wash varied across types of disgust (see Table 4). As can be seen in Table 2, disgust was most pronounced for moral disgust and least intense for sexual disgust, with pathogen disgust in between. Disgust sensitivity did not significantly interact with the perspective [F (1,122) = 0.25, p = .619, η^2 = .00], nor did disgust propensity [F (1,122) = .00, p = .998, η^2 = .00].

Discussion

As a first step to examine the relevance of self-disgust within the context of sexual functioning, this study tested if particular sexual experiences have the ability to elicit self-disgust and whether this is the case for each type of disgustcategory (i.e., pathogen, sexual, and moral), as proposed by de Jong and Borg (2015). As a subsidiary issue, the current study also explored whether the inclination to experience self-disgust following particular sex-related experiences would be especially pronounced in those with high trait disgust propensity (DP) and/or disgust sensitivity (DS). The major findings can be summarized as follows: (i) The manipulation was successful in the sense that the participants could imagine themselves in the perspectives provided to them and considered these scenarios as important. (ii) All of the three types of sex-specific scenarios were effective in triggering self-disgust as indexed by both subjective feelings of self-disgust and the urge of participants to wash themselves. (iii) Trait self-disgust did not moderate the level of state self-disgust elicited by the scenarios.

Table 2. Means and standard deviations of the subjective self-disgust and urge to wash scores and mean differences between the perspectives.

		Self-perspective		Other-perspective			
		Mean	SD	Mean	SD	Mean difference	95% CI Mean difference
Pathogen disgust	Subjective disgust	58.82	24.12	26.35	22.42	32.47*	27.88–37.06
	Urge to wash	54.21	16.35	27.43	18.05	26.78*	23.74–29.82
Sexual disgust	Subjective disgust	61.06	24.92	25.39	20.87	35. 67*	31.05–40.29
	Urge to wash	41.45	20.51	22.82	17.00	18.64*	15.69–21.59
Moral disgust	Subjective disgust	70.27	19.26	23.82	22.96	46.45*	41.76–51.14
	Urge to wash	65.60	17.31	27.30	20.53	38.30*	34.59–42.01

*The mean difference was significant at the .001 level.

Table 3. Simple main effects of types and perspectives for subjective self-disgust.

Factor	F (1, 123)	p
Pathogen (self vs. other)	195.68	<.001
Sexual (self vs. other)	236.83	<.001
Moral (self vs. other)	389.99	<.001
Factor	**F (2, 246)**	**p**
Self (across types of self-disgust)	23.53[a]	<.001[a]
Other (across types of self-disgust)	1.04[a]	.344[a]

[a]A Huynh-Feld correction was applied.

Table 4. Simple main effects of types and perspectives for the urge to wash.

Factor	F (1, 123)	*p*
Pathogen (self vs. other)	306.44	<.001
Sexual (self vs. other)	155.18	<.001
Moral (self vs. other)	421.41	<.001
Factor	**F (2, 246)**	***p***
Self (across types of self-disgust)	142.98[a]	<.001[a]
Other (across types of self-disgust)	5.89[a]	.005[a]

[a]A Huynh-Feld correction was applied.

Pathogen, Sexual, and Moral Self-Disgust

Recently, it has been proposed that the three types of disgust as described by Tybur et al. (2009) can also be differentiated in self-directed disgust. As argued by de Jong and Borg (2015), just as disgust elicited by external stimuli, self directed disgust might compromise sexual responding. The current study tested whether the proposed differential types of self-disgust can be elicited by specific sexual experiences. The current findings indeed showed that each of the three types of category relevant triggers elicited self-disgust, as reflected in higher disgust ratings and a stronger inclination to wash.

For sex-related pathogen self-disgust, imagining experiencing sexual assault or wanting to be sexually active after a breast amputation were triggers for heightened self-disgust. This is in line with earlier research that found self-disgust following sexual assault (Badour, Feldner, Babson et al., 2013; Badour, Feldner, Blumenthal et al., 2013; Badour et al., 2014; Dyer et al., 2015; Fairbrother & Rachman, 2004; Smith et al., 2015; Rachman et al., 2012) and bodily changes (Azlan et al., 2017a, 2017b; Burden et al., 2018; Powell et al., 2016). Sex-related sexual disgust was successfully elicited by imagining oneself in scenarios that induced a feeling of rejection (i.e., either rejection by one's boyfriend due to body weight or sexual problems because of vaginismus, or rejection by a stranger for unknown reasons). There has not been earlier research about sex-related sexual self-disgust, although relevant anecdotal evidence was described by Rachman (2010). Finally, sex-related moral disgust was elicited by two specific scenarios: one regarding cheating and one focusing on imagining having sex with a teenager. These findings corroborate and extend earlier research (Rachman et al., 2012; Zhong & Liljenquist, 2006).

Trait Disgust

Inconsistent with the view that those with a generally heightened inclination to experience disgust (high on trait disgust) would show higher responsivity to the potentially disgust-inducing experiences, in this study, higher DP or DS had no association with higher self-disgust resulting from all three types of scenarios. Our current data support the findings by Badour et al. (2012), but are not in line with research indicating strong positive associations between state self-disgust and DP/DS (Azlan et al., 2017a; Powell et al., 2016; Stasik-O'Brien & Schmidt, 2018; von Spreckelsen et al., 2018), nor with research that shows strong associations between DP/DS and washing behavior (Mitte, 2008; Olatunji, 2015). Furthermore, these results are inconsistent with the theory by de Jong et al. (2013) suggesting that high DP increases the likelihood to react with disgust and avoidance behavior to sexual stimuli.

A first possible explanation could be that DP and DS influence self-disgust resulting from the other-perspectives in the same way they influence the self-disgust resulting from the self-perspectives. Since self-disgust was indexed by the difference between the response to the scenarios from the self and the other perspective, this might then obscure any meaningful relationship between trait disgust and the strength of elicited self-disgust. Post hoc bivariate correlational analysis showed that indeed trait disgust (as indexed by DP and DS) correlated significantly with self-disgust as elicited in both types of scenarios (for both perspectives and both indices of trait disgust the correlations were very similar and around r = .20; the analysis can be accessed from Figshare (https://figshare.com/).

A second explanation could be that the chosen elicitors represent very universal disgust eliciting scenarios. In line with such explanation, the scenarios generally elicited relatively high scores on self-disgust, which might have left relatively little room for moderation by trait disgust.

Strengths and Limitations

One of the strengths of this work is that the current study can be seen as a conceptual replication and extension of earlier research on mental contamination (Elliott & Radomsky, 2009; Fairbrother et al., 2005; Herba & Rachman, 2007; Millar et al., 2016). Consistent with the findings of the dirty kiss paradigm, we found that controlled exposure to sex-related specific scenarios resulted in self-directed disgust and the urge to wash/clean oneself. As an important extension, the study systematically differentiated between the three domains of disgust, thereby providing the opportunity to test the validity of the theoretical proposition that sex-related self-disgust can be reliably elicited by each of the three types of disgust elicitors (i.e., pathogen, sexual, and moral disgust relevant triggers).

This study had some limitations that should be acknowledged. First, the seven scenarios were designed specifically for this study and are not yet validated. Thus, it remains to be tested if similar real-life experiences also elicit self-disgust. However, the finding that even scenario-based stimuli were effective in eliciting self-disgust is promising, especially if one considers that actual sex-related experiences most likely elicit stronger emotions than lab-based scenarios. To experimentally test the effect of these sexual experiences in real life would be unethical. However, future research can explore the life story and sexual life events of participants and measure their self-disgust. Another possibility would be to immerse participants in simulated scenarios generated by virtual reality, attempting to come closer to real-life experiences by using more

ecologically valid stimulation. To indirectly explore the potential influence of self-disgust on sexual functioning, people with sexual dysfunctions could be subjected to a diagnostic interview to see whether particular types of (domain-specific) sexual events or triggers from one's past are linked to the current experienced self-disgust.

Second, other experiences, not covered by the scenarios included in this study, can similarly elicit self-disgust. For example, sexual self-disgust can be elicited by one's body image (von Spreckelsen et al., 2018). A negative self-concept may increase the risk that undesired experiences are attributed to their low qualities as a sexual mate, and thus one may experience feelings of revulsion toward the self. Physical signs of a sexually transmitted disease (STD) or the mere knowledge of being infected with an STD may similarly elicit pathogen self-disgust for those who consider this as an important violation of the (core) self. It would therefore be helpful if future studies would expand the types of sex-related scenarios when further examining the relevance of sex-related self-disgust.

Third, we restricted our sample to female participants. Women in general report higher baseline self-disgust than men (Ille et al., 2014); thus, in an attempt to optimize the sensitivity of the design we decided to first focus on women in this first test of the relevance of sex-related self-disgust. An important next step would be to examine if the current pattern of findings also holds true in men.

Fourth, research shows that self-disgust is much lower in non-clinical samples than in clinical samples. As this was a lab study with sexually asymptomatic women, implications for sexual dysfunction are hard to draw from this study (Ille et al., 2014; Overton et al., 2008). However, this does not diminish the importance of the results of this study. When self-disgust can be elicited in a non-clinical sample and in a lab study, this effect is likely to only be more extreme in a clinical population or in real-life situations.

Implications

Feelings of self-disgust and the urge to cleanse elicited by sexual experiences have two important implications. First, sex-related self-disgust has been argued to inhibit sexual arousal and to elicit avoidance of its elicitors (i.e., sex or sexual partners) to avoid the aversive feelings of disgust (Borg et al., 2019; Pawłowska et al., 2020), which both could have a negative effect on sexual functioning. When triggers of self-disgust are avoided, the association between disgust and sex cannot be adjusted (von Spreckelsen et al., 2022), whereas disgust induced inhibition of sexual arousal may render it difficult if not impossible to have pleasurable sex. When self-disgust is elicited by sexual experiences, and is therefore associated with sex, individuals are likely to get stuck in this negative loop (de Jong et al., 2013). This loop may play a role in specific sexual problems and dysfunctions, such as in Genito Pelvic Pain Penetration Disorder (Borg et al., 2020; de Jong et al., 2013). The initial ideas about the role of self-disgust in sexual dysfunctions are supported by preliminary data described by de Jong and Borg (2015). This data showed a correlation in men between self-disgust and sexual dissatisfaction due to premature ejaculation. For women, the same correlation is ascribed to unhappiness with appearance and the avoidance of sex.

Secondly, because self-disgust and the urge to wash can linger for a long time (Fairbrother & Rachman, 2004), the results hint at the possibility of obsessive cleansing behavior presenting as a consequence of sex-related self-disgust. This is in line with research that shows obsessive washing behavior related to self-disgust (Badour et al., 2012; Olatunji et al., 2015). To further study whether sex-related self-disgust can develop into OCD symptoms, a longitudinal study concerning the course of self-disgust and possible subsequent OCD symptoms would be a helpful next step.

In addition, the current findings provide preliminary support for some recommendations and point to the relevance for healthcare workers to consider the presence of self-disgust in individuals diagnosed with sexual problems related to pain, low sexual arousal, or aversion. To break the self-perpetuating cycle of (self-) disgust and sexual avoidance, Meunier and Tolin (2009) argued that it is very important to break continued avoidance behavior, for instance, with exposure therapy. More recent work by Borg et al. (2020) indicates that the treatment for aversion toward sex should contain exposure tasks of prolonged physical contact to disgust eliciting stimuli.

Conclusion

The current study showed that different sexual experiences could induce self-disgust and consequential avoidance behavior, which was measured using sex-related scenarios, aiming to elicit three proposed categories of self-disgust: pathogen, sexual, and moral self-disgust. The manipulation successfully elicited substantial levels of self-disgust and urge to wash. These findings provide support for the relevance of taking domain specific (sex-related) self-disgust into consideration in models of sexual behavior and dysfunctions.

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Disclosure Statement

No potential conflict of interest was reported by the authors.

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Data Availability Statement

The data of the study are available on Figshare (https://figshare.com/).

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