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Sensitivity to disgust, but not increased disgust, is associated with disapproval of gays: Experimental evidence from Turkey

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Abstract

Previous research indicated that exposure to disgusting stimuli often leads to more negative attitudes toward gays. However, these findings primarily stemmed from Western cultures and were inconsistent. It remained uncertain whether the impact of disgust would apply to diverse cultural contexts. This study aimed to fill this gap by investigating whether the influence of disgust, previously observed, extended to an unexplored non-Western setting, Turkey. In Study 1, an online experiment was conducted to explore the connection between disgust and attitudes toward gays. Study 2 aimed to replicate these findings in a laboratory setting and examined the role of political attitudes. Study 1 found no significant link between disgust and disapproval of gays. However, in Study 2, there were significant correlations between political conservatism, disgust sensitivity, and negative attitudes toward gays. Notably, disgust did not significantly affect negativity toward gays in either study. Moreover, while political conservatism would lead to negative attitudes, it did not moderate the relationship between disgust and negativity toward gay individuals in Study 2. Present findings expand the ongoing debate about the causal role of disgust in disapproval of gays, providing original insights into a non-Western cultural context.

Keywords

disgust, prejudice toward gay men, conservatism, disgust sensitivity, Turkey

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Over the past two decades, social psychological research has made significant strides in uncovering how and why disgust affects guiding avoidance behaviors toward marginalized out-groups within society (Rozin et al., 2008). In this manner, the pathogen avoidance strategy and behavioral immune system (BIS) have been proposed as a fundamental evolutionary mechanism underlying conservative political ideology, acknowledged for the role of disgust in in-group favoritism and the creation of social divisions (Schaller & Duncan, 2007; Thornhill et al., 2009). Given that prejudice has generally been conceptualized as negative beliefs about others coupled with emotional reactions (Allport, 1954), and affect appears as a strong predictor of negative attitudes as well or better than cognitive determinants (Stangor et al., 1991), relevant research has attempted to observe the role of different emotions in prejudicial attitudes toward various marginalized out-groups.

Consistent with this conceptualization of prejudice, BIS has approached negativity toward out-groups by considering the roles of emotions, with a particular emphasis on disgust (Schaller & Park, 2011). According to the BIS, perceiving certain groups as socially deviant leads individuals to display protective mechanisms toward those groups to avoid potential disease contamination (Duncan et al., 2009; Kiss et al., 2020). The benefits of the emotion of disgust in social relationships, therefore, lie in inhibiting contact with out-groups that might harbor novel pathogens for members of the in-group (Park & Schaller, 2009), in line with the main assumptions of evolutionary psychology regarding the protective role of core disgust against pathogens (Rozin et al., 1997). This, in turn, decreases the risk of disease contamination through avoidance strategies toward marginalized groups. Therefore, it

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would align with the assumptions of the BIS to expect that the groups perceived as either violating normative expectations regarding hygiene or having norms differing from society's traditional hygiene norms would be more negatively perceived (Kiss et al., 2020).

In this context, gay men appear as a potential target group of prejudice in many ways. Gay men have generally been stigmatized due to HIV and AIDS (Lawrence & Husfeldt, 1990; Vincent et al., 2016), perceived lack of purity (Kang et al., 2019; Terrizzi et al., 2012), or engagement in anal intercourse, which is seen as contrary to heteronormative values and perceived as risky for disease transmission. In line with this, sexual disgust was found as a mediator of the link between heteronormative values and hostility toward gay men (Ray & Parkhill, 2021).

In the last two decades, previous research has tested the correlational link between sensitivity to disgust, as a trait, and prejudice toward gays. Inbar et al. (2009a, 2009b), for instance, showed that people with higher sensitivity to disgust intuitively exhibit greater negative evaluations toward encouraging gays to kiss in public, relative to heterosexuals. In another research, sexually unconventional behaviors—often viewed as deviations from societal norms—were found to be associated with greater negativity in individuals with higher levels of disgust sensitivity (Heerdink et al., 2019). Besides, Crawford et al. (2014) found that negative attitudes toward out-groups that challenge traditional sexual norms were associated with disgust sensitivity (Crawford et al., 2014). In addition to these findings, the relationship between conservatism and disgust is particularly pronounced regarding issues related to purity, such as abortion and gay marriage (Crawford et al., 2014; Inbar et al., 2009a, 2009b).

Since correlational findings are not sufficient to demonstrate the causal role of disgust and prejudice toward gays, relevant research has also attempted to observe the impact of increased disgust on this link with an experimental approach. To examine the causal link between disgust and homonegativity, the inducement of disgusting scenarios (Inbar et al., 2009a, 2009b), exposing participants to unpleasant odors (Cunningham et al., 2013; Inbar et al., 2012), and showing disgusting videos (Horberg et al., 2009) were used. For instance, Eskine et al. (2011) found that gustatory disgust intensified the perception of moral wrongness. In addition to this, some of these findings showing the significant impact of disgust on revealing prejudicial attitudes toward gays also highlighted the role of political orientation (Inbar et al., 2012; Terrizzi et al., 2010). Inbar et al. (2012), for instance, showed that liberal individuals induced with disgust exhibited fewer negative attitudes, while disgusted conservatives revealed more negativity toward gay people. Therefore, this evidence suggests that prejudice toward gays and disgust sensitivity might be moderated by the liberal (or conservative) political orientations of individuals.

However, some studies have failed to replicate the significant link between conservatism, disapproval of gays, and disgust sensitivity. For instance, Tybur et al. (2010) found no significant association between disgust sensitivity and political conservatism. Contrary to the study of Eskine et al. (2011), Johnson et al. (2016) showed no support for the impact of gustatory disgust on moral judgments. Białek et al. (2021) found no impact of disgust on moral judgments. Yet, they showed that participants with higher self-reported disgust tend to lower acceptability for moral transgressions. Their results implied that relying on individuals' subjective reports of disgust might offer a more delicate gauge of how disgust influences moral judgment than analyzing the mere presence of disgusting stimuli.

Landy and Goodwin (2015) conducted a comprehensive meta-analysis of published and unpublished studies involving the manipulation of incidental disgust during moral judgment tasks; they found a slight amplification effect, particularly prominent with gustatory/olfactory methods. However, the impact of disgust inducement was found to have a medium effect. They noted that adjusting for potential publication bias eliminated the observed effect. Thus, the roles of disgust on moral judgments were found to be small or near zero when publication bias was controlled. Another meta-analysis by Kiss et al. (2020) confirmed a significant relationship between disgust sensitivity and prejudice against gay men, with a moderate to large effect size. Overall, the effects of disgust on socio-moral decision-making have become the subject of controversy. Considering that previous research has been mostly conducted in Western cultural contexts, these mixed findings, in turn, lead us to question whether the similar effect of disgust induction would be pronounced in diverse cultural backgrounds.

Specifically, as a limitation of the previous research, the evidence mentioned above was primarily derived from Western, Educated, Industrialized, Rich, and Democratic (WEIRD) cultural contexts (Henrich et al., 2010). Even though the advocacy for homosexual rights is gaining traction worldwide, negative attitudes persist at alarming levels, resulting in labeling and psychological and physical violence, particularly in non-Western communities (Sakalli, 2002). Turkey represents a cultural context where gender norms are predominantly manifested through heteronormative discourse, and LGBTI+-affirming narratives have long been met with discriminatory attitudes on social media (Doğan et al., 2023). In Turkey, considered a culture of honor (Uskul et al., 2019), debates related to gender have been ongoing for a long time, and LGBTI+ individuals, especially, face violence and discrimination, particularly from the far-right and religious segments (Anderson & Koc, 2015; Eslen-Ziya & Koç, 2016; Metin-Orta, 2021; Yavuz & Byrne, 2021). Considering the specific target group of prejudicial attitudes, gay men, and the diverse responses to normative violations of heteronormative sexual orientation, obtaining data from participants in

non-WEIRD regions of the world would be worth pursuing to enrich the existing research by allowing broader generalizations of the findings.

Turkey stands out among non-Western countries due to its unique cultural context, shaped by a blend of collectivistic and honor-based cultural values (Uskul et al., 2019) where heterosexual norms often dominate (e.g., Bilgehan Ozturk, 2011; Gezgin, 2022). Proving its distinct cultural context, a sample tested in Turkey was evaluated as non-WEIRD, having the lowest "WEIRDness" score among other countries (Klein et al., 2018). Thus, we deem Turkey to be a suitable and original cultural context for testing the impact of disgust on displaying prejudice toward gay people. Disgust sensitivity and prejudice toward gay men have been studied across cultures in only one study, which included Turkey (Van Leeuwen et al., 2022) and supported the expected positive associations among conservatism, negative attitudes toward homosexuals, and disgust sensitivity across diverse cultures, including Turkish population.

To the best of our knowledge, there is no prior research examining the causal role of disgust in displaying prejudice toward gay people in the Turkish cultural context. The present investigation, therefore, aims to investigate the role of disgust in displaying prejudice against gay men in Turkey. In the first study, we hypothesized that the attitudes toward homosexuals would be more negative in the disgust-induced group compared to the control group.[1] In the second study, we tested the moderator role of conservatism in the link between disgust and attitudes toward homosexuals, acknowledging the significance of politically conservative attitudes in clarifying the relationship between disgust sensitivity and prejudice against gay men (Inbar et al., 2012). Specifically, prior research demonstrated that higher levels of conservatism might increase prejudicial attitudes toward gays (Choe et al., 2019; Pacilli et al., 2011), and the impact of disgust in negative attitudes toward gays might be more pronounced among conservative individuals (Adams et al., 2014; Inbar et al., 2012). Given that disgust is a predictor of conservatism (Adams et al., 2014; Inbar et al., 2009a, 2009b) and prejudice toward gays (Kiss et al., 2020), conservatism appears as a potential moderator of the link between disgust inducement and prejudice toward gays. In the context of Turkish culture, traditional normative expectations regarding gender and social dominance orientation are found to be significantly correlated (Metin-Orta, 2021). Given that both social dominance orientation and adherence to traditional gender norms are strongly linked with conservative attitudes (Choe et al., 2019; Christopher & Mull, 2006; Harnish et al., 2008), it has been specifically predicted that participants in the experimental group (those induced with disgust) with higher levels of conservatism would exhibit more negative attitudes toward gay people. Participants' sensitivity to disgust, age, gender, and education levels were statistically controlled based on prior research (Van Leeuwen et al., 2022).

Study 1

Method

Participants. Having been approved by the Human Research Ethics Committee (protocol number is 023-ODTU-2021), 182 people were recruited through social media announcements. Before starting the procedure, informed consent was presented to the participants (research materials regarding measures and all procedures in Study 1 and Study 2 were provided in the Supplemental Materials).

Participants who quit the survey halfway through ($N = 57$) without completing the measures were excluded. Participants ($N = 13$) who failed to respond correctly to the attention check question were also excluded. The final sample consisted of 112 participants ($N_{woman} = 83$; $N_{experimental} = 62$; $N_{control} = 50$) aged 18–42 ($M_{age} = 24.53$, $SD = 4.39$). The majority of participants were university students [1 = University student (53.6%), 2 = University degree (24.1%), 3 = Graduate student (13.4%), 4 = Graduate degree (8.9%)]. Participants were Turkish native speakers.

Results

An independent samples t-test was conducted to examine the disgust level reported by the participants in the experimental and control groups after exposing the videos to assess whether the manipulation achieved its purpose. Findings showed that the disgust level reported by the participants in the experimental group ($M = 4.44$, $SD = 1.75$) was significantly greater than the participants in the neutral group ($M = 1.20$, $S = 0.73$), $t(85.08) = -13.20$, $p < .001$.[2] Thus, we concluded that the manipulation worked. Bivariate relationships among the variables are shown in Table 1.

A two-step hierarchical regression analysis was conducted where the grouping variable (i.e., experimental group vs. neutral group) was the focal predictor, and gender, age, education, DS-R scores, and disgust level after completing the DS-R form were included as control variables on attitudes toward homosexuals. In the first step, the control variables were included. As shown in Table 2, none of the variables significantly predicted attitudes toward homosexuals. In the second step, the grouping variable was included in the analysis; however, the findings remained statistically the same: none of the variables was associated with attitudes toward homosexual individuals ($ps > .05$).

Study 2

Method

Participants. Relying on the commitment to the preregistration, data collection ended when 100 participants for the current study were reached. Participants who quit the survey halfway through ($N = 18$) without completing

Table 1. Bivariate correlations among variables in Study 1

		1	2	3	4	5	6
1	ATG						
2	Gender	−0.128					
3	Age	−0.189*	0.125				
4	Education	−0.194*	0.092	0.671***			
5	Disgust sensitivity	0.205*	−0.419***	−0.148	−0.109		
6	DA_DS-R	0.229*	−0.262**	−0.107	−0.072	0.460***	
7	Condition	0.124	−0.043	−0.130	−0.094	0.078	0.124

Notes: *$p < 0.05$, **$p < 0.01$, ***$p < 0.001$, two-tailed. ATH = Attitude toward gays; Gender: 0 = woman, 1 = man; DA_DS-R = Disgust level after the revised disgust scale; Condition = Control (0) vs. experimental (1).

Table 2. Two-step hierarchical regression on attitudes toward gays

		Attitude toward Gays				
		B	*SE*	*p*	*LLCI*	*ULCI*
Step 1						
	Gender	−0.052	0.755	0.805	−0.464	0.360
	Age	−0.015	0.208	0.556	−0.066	0.036
	Education	−0.108	0.026	0.337	−0.330	0.114
	Disgust sensitivity	0.138	0.160	0.389	−0.179	0.455
	DA_DS-R	0.147	0.095	0.124	−0.041	0.334
$R^2 = 0.097$						
Step 2						
	Gender	−0.055	0.208	0.792	−0.468	0.358
	Age	−0.013	0.026	0.605	−0.064	0.038
	Education	−0.107	0.112	0.341	−0.330	0.115
	Disgust sensitivity	0.126	0.161	0.434	−0.192	0.455
	DA_DS-R	0.145	0.095	0.128	−0.043	0.333
	Condition	0.143	0.168	0.398	−0.190	0.476
$\Delta R^2 = 0.007$						

Notes: Gender: 0 = woman, 1 = man; Education was measured from 1 to 7. DA_DS-R = Disgust level after the revised disgust scale; Condition = Control (0) vs. experimental (1). Unstandardized regression coefficients were reported.

the measures were excluded. Participants ($N = 4$) who failed to respond correctly to the attention check question were also excluded. The final sample consisted of 78 participants ($N_{woman} = 66$; $N_{experimental} = 40$; $N_{control} = 38$) aged 18–41 ($M_{age} = 20.92$, $SD = 2.80$). The majority of participants were university students [1 = High school degree (12.8%), 2 = University student (%80.8), 3 = University degree (%2.6), 4 = Graduate student (%3.8)]. All participants were Turkish native speakers, and all questionnaires were prepared in Turkish (for more information on the method section, please see the Supplemental Materials).

Results

An independent samples t-test was conducted to examine whether the manipulation influenced the disgust level of the participants assigned to the disgust-induced group. Findings showed that the disgust level of participants in the experimental group ($M = 3.75$, $SD = 0.62$) was significantly higher than the participants in the control group ($M = 1.21$, $SD = 1.34$), $t(55.69) = -13.72$, $p < .001$.[3] Thus, it seems that the manipulation used in the study achieved its purpose. Bivariate relationships among the variables are shown in Table 3.

To test the moderation hypothesis, a multiple regression analysis was conducted in a model where attitudes toward homosexual individuals were the outcome variable. The grouping variable, including the two conditions (i.e., experimental group vs. control group), was a focal predictor, and political ideology was included as the moderator. The same control variables were also included in the model. As seen from Table 4, disgust sensitivity significantly predicted negative attitudes toward gays ($B = 0.567$, $SE = 0.279$, 95% CI [0.010, 1.123], $p = 0.046$). Therefore, participants with more disgust sensitivity were likelier to have negative attitudes toward gays. Another significant finding showed an association between political ideology and attitudes toward gays ($B =$

Table 3. Bivariate correlations among variables in Study 2

		1	2	3	4	5	6	7
1	ATG							
2	Gender	0.167						
3	Age	−0.06	−0.127					
4	Education	−0.155	−0.084	0.306**				
5	Political ideology	0.447***	0.235*	−0.084	−0.112			
6	Disgust sensitivity	0.274*	0.022	−0.156	−0.146	0.100		
7	DA_DS-R	0.096	0.045	0.063	−0.032	0.050	0.391***	
8	Condition	0.089	0.011	−0.110	−0.045	0.108	0.006	−0.028

Notes: *$p < 0.05$, **$p < 0.01$, ***$p < 0.001$, two-tailed. ATG = Attitude toward gays; Gender: 0 = woman, 1 = man; DA_DS-R = Disgust level after the revised disgust scale; Condition = Control (0) vs. experimental (1).

Table 4. Multiple regression on attitudes toward gays

		Attitude toward Gays				
		B	*SE*	*p*	*LLCI*	*ULCI*
$R^2 = 0.267$*						
	Gender	0.237	0.370	0.524	−0.502	0.976
	Age	0.023	0.049	0.642	−0.075	0.121
	Education	−0.186	0.241	0.442	−0.668	0.294
	Political ideology	0.592	0.240	0.016	0.113	1.071
	Disgust sensitivity	0.567	0.279	0.046	0.010	1.123
	DA_DS-R	−0.039	0.169	0.817	−0.375	0.297
	Condition	0.109	0.255	0.670	−0.400	0.618
	Interaction	−0.021	0.325	0.949	−0.669	0.628

Notes: *$p < 0.01$. Gender: 0 = woman, 1 = man; education was measured from 1 (primary school) to 7 (master's/doctoral degree); political ideology was measured from 1 (extremely left-wing) to 7 (extremely right-wing). DA_DS-R = Disgust level after the revised disgust scale; Condition = Control (0) vs. experimental (1). Unstandardized regression coefficients were reported.

0.592, $SE = 0.240$, 95% CI [0.113, 1.071], $p = 0.016$). Namely, participants scoring higher on right-wing ideology were more likely to report negative attitudes toward gays. However, the interaction effect between the grouping variable (i.e., experimental group vs. control group) and political ideology was not significant ($p = 0.949$).

Sensitivity analyses were conducted for both studies to see minimum effect sizes that could be detected in the current samples. For the first study, the analysis with $N = 112$ had sensitivity power, at an 80% power level and alpha 0.05, to detect an effect size as low as $f^2 = 0.07$ with G*Power's "Linear multiple regression: Fixed model, R^2 increase" procedure (Faul et al., 2009). That finding was consistent with the meta-analytical finding reported by Kiss et al. (2020). They reported that the effect sizes in similar studies ranged from medium effect to large effect. It could be concluded that the sample size could be sensitive enough to detect the smallest effect size of interest in Study 1. For the second study, the analysis with $N = 78$ had sensitivity power, at an 80% power level and alpha 0.05, to detect an effect size as low as $f^2 = 0.10$ with G*Power's "Linear multiple regression: Fixed model, R^2 increase" procedure. We could not find a resource reflecting some insights regarding the expected effect size for the interaction effect in Study 2. At the least we argue that the current sample size was sensitive enough to detect even such small effects in Study 2.[4]

Discussion

The main aim of the present research was to examine the causal role of disgust on explicit attitudes toward gay men in the Turkish cultural context throughout two experimental studies. We also investigated the moderator role of political orientation on the link between induced disgust and negative attitudes toward gays in the second study. Even though people reported greater disgust after watching a disgusting scene, the findings showed that induced disgust did not affect participants' evaluations toward gays across two studies. Study 2 revealed significant relationships between conservatism, disgust sensitivity, and prejudice toward gay people; however, the moderator role of conservatism was nonsignificant.

There might be several reasons behind the nonsignificant impact of disgust on prejudice toward gays. First, the

characteristics of the participant group were divergent from the previous research, revealing the significant impact of disgust on explicit negative attitudes toward gay men (Inbar et al., 2012). As a strength of this research, the information was gained from a non-Western culture, Turkey, which has a distinct cultural climate from the previously tested contexts, by including a predominantly Muslim population with the salient norms of traditional heteronormative sexual attitudes (Bakacak & Öktem, 2014). In Turkey, gays reported that they experience a considerable amount of risk of minority stress and violence (Ayhan Balik & Bilgin, 2021). Recent research comparing Turkish and Belgian samples showed that Muslim Turkish participants were more sexist and homophobic than Belgians (Çetiner & Van Assche, 2021). The strict religious and traditional rules for homosexuality in Muslim populations might explain the discrepancy between our results and the previous findings. Further research is needed to examine this possibility.

Second, previous research documented the lack of the robust effect of disgust on socio-moral judgments. A meta-analysis obtained the weak effect sizes from induced-disgust experiments (Landy & Goodwin, 2015). Therefore, in the current study, the nonsignificant impact of disgust inducement in increasing negative judgments toward gay men was consistent with the previous research (Białek et al., 2021; Ghelfi et al., 2020; Landy & Goodwin, 2015). In addition, participants might have responded as if they were experiencing increased disgust sensitivity due to COVID-19 since they felt more vulnerable to diseases. Recent studies revealed that people were more sensitive to disgust during the COVID-19 pandemic (Miłkowska et al., 2021; Stevenson et al., 2021). The second study conducted a long time after the COVID-19 lockdown showed that disgust sensitivity and political conservatism positively correlated with prejudice toward gay men. Therefore, the results of Study 1, revealing no particular negative evaluations after experiencing disgust, might be related to the specific time of the data collection.

Confirming our expectations, Study 2 demonstrated a significant relationship between political orientation, disgust sensitivity, and negativity toward gays. However, the moderator role of political orientation on the link between increased disgust and negative attitudes toward gays was not significant. One of the reasons behind the lack of a significant impact of disgust inducement might be related to our methodology involving an explicit measurement to assess evaluations toward gay men. Previous research showed the importance of social desirability in explicit assessments of prejudice toward marginalized groups (Nederhof, 1985). For instance, Inbar et al. (2009a, 2009b) showed that implicit examinations led participants to judge homosexuality more negatively, comparing explicit measures. Inbar et al. (2012) did not find any effect of smelling a disgusting odor on implicit evaluations of gay men, whereas there was a significant increase in explicit negative evaluations. Considering the varying relationship between implicit and explicit attitudes, the impact of disgust may be related to measurement type (Nosek, 2007).

The present study has several limitations. First, participants were only asked to report their political self-positioning on a one-item Likert-type question rather than using a detailed measurement of their conservative values and belief systems. For instance, Terrizzi et al. (2010) found a significant moderator role of conservative values on disgust and prejudice relation on the "contact with homosexuals" subscale but not with the morality or stereotypes subscales. Second, we did not ask any questions regarding participants' sexual orientation. Third, the current sample was a student group that was not representative of the Turkish population. Fourth, the second study could be viewed as underpowered to test the interaction hypothesis, requiring more participants than the main effects. In addition, the influence of disgust was only tested by using a visual manipulation, which has been previously evaluated as a weak elicitor (Sanyal et al., 2021). Finally, a significant limitation is that we did not account for the possibility that the manipulation might have triggered an increase in emotions other than disgust. Thus, our understanding of the impact of the emotion induction method is limited, as other emotions that were triggered may have diluted or influenced the effects of the manipulation. Considering all these limitations, further research should test the hypothesized relationships with more detailed questionnaires, representative samples, and various disgust-inducement methods.

The present results suggest that the previously established relationships between disgust sensitivity, conservatism, and prejudice toward gay men might be extended to a non-Western cultural context with a predominantly Muslim population. However, neither the influence of disgust in displaying greater negativity toward gay men nor the moderating role of conservatism in this relationship was evident in our data. In this regard, the present results failed to replicate the previously observed effects of disgust in group-directed evaluations (Inbar et al., 2012; Terrizzi et al., 2010). Therefore, whether the impact of disgust on homonegativity would be extended to non-WEIRD cultural contexts is still controversial and warrants further attention (Kiss et al., 2020; Landy & Goodwin, 2015).

Declaration of conflicting interests

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Ethical approval

The study was approved by the Ethics Committee of Middle East Technical University and was conducted following the ethical standards of the 1964 Declaration of Helsinki.

Informed consent

Informed consent was presented for all participants.

Supplemental material

Supplemental material for this article is available online.

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Notes

1. The pre-registration form and data are accessible on the following link: https://osf.io/36qtz/?view_only=6eabe2bdb23e448294469edc50c1bfc7.
2. Levene's test indicated that the assumption for homogeneity of variances was violated. Thus, corrected degrees of freedom were reported when the variance between groups was not assumed to be equal.
3. Levene's test showed that the assumption for homogeneity of variances was violated, $F(76) = 23.86$, $p < .001$. Thus, adjusted degrees of freedom were reported for the t-test results.
4. In the first study, the sample size was based on a priori power analysis, suggesting that 98 was the *N* adequate to achieve an 80% power level in the multiple regression analysis with six predictors in the current study. The analysis used alpha = 0.05 and a medium effect size $f^2 = 0.15$ based on a meta-analysis of similar effects (Kiss et al., 2020). For that power analysis, we used the "Linear multiple regression: Fixed model, R^2 deviation from zero" procedure. In the second study, the sample size was based on a priori power analyses suggesting 77 as the *N* adequate to achieve an 80% level of power in the moderated multiple regression analysis with three tested predictors (i.e., grouping variable, political ideology, and interaction term between those two variables), and eight total predictors (including the tested predictors) in the current study. The analysis used alpha = 0.05 and a medium effect size $f^2 = 0.15$ parallel to the first study. We used the "Linear multiple regression: Fixed model, R2 increase" procedure for this design. However, different procedures were followed in prior power analyses and post hoc sensitivity analyses in the current study. The reason is that through the comments during the revision process, the authors realized that some power analysis steps were inappropriate considering the main hypotheses. Having all other options remain the same, the appropriate procedure should have been "*Linear multiple regression: Fixed model, R^2 increase*" in the two studies, including one *tested predictor* (i.e., condition variable in Study 1 and an interaction effect in Study 2). The two power analyses were re-conducted using that recommended procedure. The minimum sample size was found to be 55 for both studies. Thus, it seems that we overestimated the required sample size by using inappropriate power analysis procedures. By realizing that, we at least utilized the appropriate method in the sensitivity analyses.

References

Adams, T. G., Stewart, P. A., & Blanchar, J. C. (2014). Disgust and the politics of sex: Exposure to a disgusting odorant increases politically conservative views on sex and decreases support for gay marriage. *PloS One*, *9*(5), e95572. https://doi.org/10.1371/journal.pone.0095572

Allport, F. H. (1954). The structuring of events: Outline of a general theory with applications to psychology. *Psychological Review*, *61*(5), 281–303. https://doi.org/10.1037/h0062678

Anderson, J., & Koc, Y. (2015). Exploring patterns of explicit and implicit anti-gay attitudes in Muslims and atheists. *European Journal of Social Psychology*, *45*(6), 687–701. https://doi.org/10.1002/ejsp.2126

Ayhan Balik, C. H., & Bilgin, H. (2021). Experiences of minority stress and intimate partner violence among homosexual women in Turkey. *Journal of Interpersonal Violence*, *36*(19–20), 8984–9007. https://doi.org/10.1177/0886260519864371

Bakacak, A. G., & Öktem, P. (2014). Homosexuality in Turkey: Strategies for managing heterosexism. *Journal of Homosexuality*, *61*(6), 817–846. https://doi.org/10.1080/00918369.2014.870453

Białek, M., Muda, R., Fugelsang, J., & Friedman, O. (2021). Disgust and moral judgment: Distinguishing between elicitors and feelings matters. *Social Psychological and Personality Science*, *12*(3), 304–313. https://doi.org/10.1177/1948550620919569

Bilgehan Ozturk, M. (2011). Sexual orientation discrimination: Exploring the experiences of lesbian, gay and bisexual employees in Turkey. *Human Relations*, *64*(8), 1099–1118. https://doi.org/10.1177/0018726710396249

Çetiner, ŞD, & Van Assche, J. (2021). Prejudice in Turkey and Belgium: The cross-cultural comparison of correlations of right-wing authoritarianism and social dominance orientation with sexism, homophobia, and racism. *Analyses of Social Issues and Public Policy*, *21*(1), 1167–1183. https://doi.org/10.1111/asap.12280

Choe, E., Srisarajivakul, E., Davis, D. E., DeBlaere, C., Van Tongeren, D. R., & Hook, J. N. (2019). Predicting attitudes towards lesbians and gay men: The effects of social conservatism, religious orientation, and cultural humility. *Journal of Psychology and Theology*, *47*(3), 175–186. https://doi.org/10.1177/009164711983701

Christopher, A. N., & Mull, M. S. (2006). Conservative ideology and ambivalent sexism. *Psychology of Women Quarterly*, *30*(2), 223–230. https://doi.org/10.1111/j.1471-6402.2006.00284.x

Crawford, J. T., Inbar, Y., & Maloney, V. (2014). Disgust sensitivity selectively predicts attitudes toward groups that threaten (or uphold) traditional sexual morality. *Personality and Individual Differences*, *70*, 218–223. https://doi.org/10.1016/j.paid.2014.07.001

Cunningham, E., Forestell, C. A., & Dickter, C. L. (2013). Induced disgust affects implicit and explicit responses toward gay men and lesbians. *European Journal of Social Psychology*, *43*(5), 362–369. https://doi.org/10.1002/ejsp.1945

Doğan, M. B., Oban, V., & Dikeç, G. (2023). Qualitative and artificial intelligence-based sentiment analyses of anti-LGBTI+ hate speech on Twitter in Turkey. *Issues in Mental Health Nursing*, *44*(2), 112–120. https://doi.org/10.1080/01612840.2022.2158407

Duncan, L. A., Schaller, M., & Park, J. H. (2009). Perceived vulnerability to disease: Development and validation of a 15-item self-report instrument. *Personality and Individual Differences*, *47*(6), 541–546. https://doi.org/10.1016/j.paid.2009.05.001

Eskine, K. J., Kacinik, N. A., & Prinz, J. J. (2011). A bad taste in the mouth: Gustatory disgust influences moral judgment. *Psychological Science*, *22*(3), 295–299. https://doi.org/10.1177/0956797611398497

Eslen-Ziya, H., & Koç, Y. (2016). Being a gay man in Turkey: Internalised sexual prejudice as a function of prevalent hegemonic masculinity perceptions. *Culture, Health & Sexuality*, *18*(7), 799–811. https://doi.org/10.1080/13691058.2015.1133846

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*, 1149–1160. https://doi.org/10.3758/brm.41.4.1149

Gezgin, E. (2022). Between privileges and sacrifices: Heteronormativity and Turkish nationalism in urban Turkey. *Journal of Homosexuality*, 1–24. https://doi.org/10.1080/00918369.2022.2048161

Ghelfi, E., Christopherson, C. D., Urry, H. L., Lenne, R. L., Legate, N., Ann Fischer, M., … Sullivan, D. (2020). Reexamining the effect of gustatory disgust on moral judgment: A multilab direct replication of Eskine, Kacinik, and Prinz (2011). *Advances in Methods and Practices in Psychological Science*, *3*(1), 3–23. https://doi.org/10.1177/2515245919881152

Harnish, R. J., Bridges, K. R., & Gump, J. T. (2018). Predicting economic, social, and foreign policy conservatism: The role of right-wing authoritarianism, social dominance orientation, moral foundations orientation, and religious fundamentalism. *Current Psychology*, *37*, 668–679. https://doi.org/10.1007/s12144-016-9552-x

Heerdink, M. W., Koning, L. F., Van Doorn, E. A., & Van Kleef, G. A. (2019). Emotions as guardians of group norms: Expressions of anger and disgust drive inferences about autonomy and purity violations. *Cognition and Emotion*, *33*(3), 563–578. https://doi.org/10.1080/02699931.2018.1476324

Henrich, J., Heine, S. J., & Norenzayan, A. (2010). Most people are not WEIRD. *Nature*, *466*(7302), 29. https://doi.org/10.1038/466029a

Horberg, E. J., Oveis, C., Keltner, D., & Cohen, A. B. (2009). Disgust and the moralization of purity. *Journal of Personality and Social Psychology*, *97*(6), 963–976. https://doi.org/10.1037/a0017423

Inbar, Y., Pizarro, D. A., & Bloom, P. (2009a). Conservatives are more easily disgusted than liberals. *Cognition and Emotion*, *23*(4), 714–725. https://doi.org/10.1080/02699930802110007

Inbar, Y., Pizarro, D. A., & Bloom, P. (2012). Disgusting smells cause decreased liking of gay men. *Emotion (Washington, DC)*, *12*, 23–27. https://doi.org/10.1037/a0023984

Inbar, Y., Pizarro, D. A., Knobe, J., & Bloom, P. (2009b). Disgust sensitivity predicts intuitive disapproval of gays. *Emotion (Washington, DC)*, *9*, 435–439. https://doi.org/10.1037/a0015960

Johnson, D. J., Wortman, J., Cheung, F., Hein, M., Lucas, R. E., & Donnellan, M. B., … Narr, R. K. (2016). The effects of disgust on moral judgments: Testing moderators. *Social Psychological and Personality Science*, *7*(7), 640–647. https://doi.org/10.1177/1948550616654211

Kang, E., Hosaka, K., Andrews, P., & Duomai, S. (2019). Conservative Protestants and engagement with sexual minorities living with HIV: The role of disgust and recategorizing contact. *Mental Health, Religion & Culture*, *22*(2), 195–207. https://doi.org/10.1080/13674676.2019.1598344

Kiss, M. J., Morrison, M. A., & Morrison, T. G. (2020). A meta-analytic review of the association between disgust and prejudice toward gay men. *Journal of Homosexuality*, *67*(5), 674–696. https://doi.org/10.1080/00918369.2018.1553349

Klein, R. A., Vianello, M., Hasselman, F., Adams, B. G., Adams, R. B., Alper, S., Aveyard, M., Axt, J. R., Babalola, M. T., Bahník, Š., Batra, R., Berkics, M., Bernstein, M. J., Berry, D. R., Bialobrzeska, O., Binan, E. D., Bocian, K., Brandt, M. J., Busching, R., … Nosek, B. A. (2018). Many labs 2: Investigating variation in replicability across samples and settings. *Advances in Methods and Practices in Psychological Science*, *1*(4), 443–490. https://doi.org/10.1177/2515245918810225

Landy, J. F., & Goodwin, G. P. (2015). Does incidental disgust amplify moral judgment? A meta-analytic review of experimental evidence. *Perspectives on Psychological Science*, *10*(4), 518–536. https://doi.org/10.1177/1745691615583128

Lawrence, J. S., & Husfeldt, B. A. (1990). The stigma of AIDS: Fears of the disease and prejudice towards gay men. *Journal of Homosexuality*, *19*(3), 85–102. https://doi.org/10.1300/J082v19n03_05

Metin-Orta, I. (2021). The relationship between social dominance orientation, gender role orientation and attitudes toward gay men and lesbians in a Turkish sample. *Current Psychology*, *40*(7), 3425–3439. https://doi.org/10.1007/s12144-019-00293-y

Miłkowska, K., Galbarczyk, A., Mijas, M., & Jasienska, G. (2021). Disgust sensitivity among women during the COVID-19 outbreak. *Frontiers in Psychology*, *12*, 622634. https://doi.org/10.3389/fpsyg.2021.622634

Nederhof, A. J. (1985). Methods of coping with social desirability bias: A review. *European Journal of Social Psychology*, *15*(3), 263–280. https://doi.org/10.1002/ejsp.2420150303

Nosek, B. A. (2007). Implicit-explicit relations. *Current Directions in Psychological Science*, *16*, 65–69. https://doi.org/10.1111/j.1467-8721.2007.00477.x

Pacilli, M. G., Taurino, A., Jost, J. T., & van der Toorn, J. (2011). System justification, right-wing conservatism, and internalized homophobia: Gay and lesbian attitudes toward same-sex parenting in Italy. *Sex Roles*, *65*, 580–595. https://doi.org/10.1007/s11199-011-9969-5

Park, J. H., & Schaller, M. (2009). Parasites, minds and cultures. *The Psychologist*, *22*(11), 942–945.

Ray, T. N., & Parkhill, M. R. (2021). Heteronormativity, disgust sensitivity, and hostile attitudes toward gay men: Potential mechanisms to maintain social hierarchies. *Sex Roles*, *84*, 49–60. https://doi.org/10.1007/s11199-020-01146-w

Rozin, P., Haidt, J., & McCauley, C. R. (2008). Disgust. In M. Lewis, J. M. Haviland-Jones, & L. F. Barrett (Eds.), *Handbook of emotions* (pp. 757–776). The Guilford Press.

Rozin, P., Haidt, J., McCauley, C. R., & Imada, S. (1997). The cultural evolution of disgust. In H. M. Macbeth (Ed.), *Food preferences and taste: Continuity and change* (pp. 65–82). Berghahn.

Sakalli, N. (2002). Application of the attribution-value model of prejudice to homosexuality. *The Journal of Social*

Psychology, *142*(2), 264–271. https://doi.org/10.1080/00224540209603899

Sanyal, M., McAuliffe, W. H. B., & Curry, O. S. (2023). Gross values: Investigating the role of disgust in bioethics. *Current Psychology*, *42*(4), 2888–2895. https://doi.org/10.1007/s12144-021-01609-7

Schaller, M., & Duncan, L. A. (2007). The behavioral immune system: Its evolution and social psychological implications. In J. P. Forgas, M. G. Haselton, & W. von Hippel (Eds.), *Evolution and the social mind: Evolutionary psychology and social cognition* (pp. 293–307). Routledge/Taylor & Francis Group.

Schaller, M., & Park, J. H. (2011). The behavioral immune system (and why it matters). *Current Directions in Psychological Science*, *20*(2), 99–103. https://doi.org/10.1177/0963721411402596

Stangor, C., Sullivan, L. A., & Ford, T. E. (1991). Affective and cognitive determinants of prejudice. *Social Cognition*, *9*(4), 359–380. https://doi.org/10.1521/soco.1991.9.4.359

Stevenson, R. J., Saluja, S., & Case, T. I. (2021). The impact of the COVID-19 pandemic on disgust sensitivity. *Frontiers in Psychology*, *11*, 3895. https://doi.org/10.3389/fpsyg.2020.600761

Terrizzi, J. A., Jr., Shook, N. J., & Ventis, W. L. (2010). Disgust: A predictor of social conservatism and prejudicial attitudes toward homosexuals. *Personality and Individual Differences*, *49*(6), 587–592. https://doi.org/10.1016/j.paid.2010.05.024

Terrizzi, J. A., Jr., Shook, N. J., & Ventis, W. L. (2012). Religious conservatism: An evolutionarily evoked disease-avoidance strategy. *Religion, Brain & Behavior*, *2*(2), 105–120. https://doi.org/10.1080/2153599X.2012.695514

Thornhill, R., Fincher, C. L., & Aran, D. (2009). Parasites, democratization, and the liberalization of values across contemporary countries. *Biological Reviews*, *84*(1), 113–131. https://doi.org/10.1111/j.1469-185X.2008.00062.x

Tybur, J. M., Merriman, L. A., Hooper, A. E. C., McDonald, M. M., & Navarrete, C. D. (2010). Extending the behavioral immune system to political psychology: Are political conservatism and disgust sensitivity really related? *Evolutionary Psychology*, *8*(4). https://doi.org/10.1177/147470491000800406

Uskul, A. K., Cross, S. E., Günsoy, C., & Gul, P. (2019). Cultures of honor. In D. Cohen & S. Kitayama (Eds.), *Handbook of cultural psychology* (pp. 793–821). The Guilford Press.

Van Leeuwen, F., Inbar, Y., Petersen, M. B., Aarøe, L., Barclay, P., Barlow, F. K., … Tybur, J.M. (2022). Disgust sensitivity relates to attitudes toward gay men and lesbian women across 31 nations. *Group Processes & Intergroup Relations*. https://doi.org/10.1177/13684302211067151

Vincent, W., Peterson, J. L., & Parrott, D. J. (2016). The association between AIDS-related stigma and aggression toward gay men and lesbians. *Aggressive Behavior*, *42*(6), 542–554. https://doi.org/10.1002/ab.21649

Yavuz, M., & Byrne, S. (2021). Violence against the queer community in Turkey: Implications for peacebuilding and social justice. *Journal for Peace and Justice Studies*, *30*(1/2), 102–125. https://doi.org/10.5840/peacejustice2021301/26