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Doolaard, F.T.; Lelieveld, G. -J.; Noordewier, M.K.; Beest, I. van; Dijk, E. van

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How information on sexism may increase women's perceptions of being excluded, threaten fundamental needs, and lower career motivation

Frank T. Doolaard[1] | Gert-Jan Lelieveld[1] | Marret K. Noordewier[1] | Ilja van Beest[2] | Eric van Dijk[1]

[1] Institute of Psychology, Leiden University, Leiden, the Netherlands

[2] Department of Social Psychology, Tilburg University, Tilburg, Noord-Brabant, the Netherlands

Correspondence
Frank Doolaard, Institute of Psychology, Leiden University, P.O. Box 9555, 2300 RB Leiden, the Netherlands.
Email: f.t.doolaard@fsw.leidenuniv.nl

Abstract

The current research investigates the effects of exposure to information about the prevalence of sexism in society on women's perceptions, needs, expectations, and career motivation. We propose that such exposure to sexism prevalence may threaten women's fundamental need to belong, and induces perceptions of social exclusion. Study 1 provided correlational evidence that perceiving society as sexist relates to increased perceptions of being excluded. Three experimental studies demonstrated that exposure to information about sexism in the form of fictional research results (Study 2), or actual newspaper articles (Studies 3 and 4), increased women's experiences of social exclusion. Exposure to such information also lowered women's gender-related expectations of achieving their preferred position in society, and reduced career motivation. Together, the article provides insight into the experiential and motivational reactions to sexism in society.

KEYWORDS
gender inequality, ostracism, sexism information, social exclusion

1 | INTRODUCTION

Gender inequality remains a pervasive problem in society. Although hostile and openly sexist ideas and attitudes towards women have been on the decline for a long time (Glick & Fiske, 2011; Swim & Cohen, 1997), gender inequality in society remains. This suggests that although sexism is less visible, women are still structurally disadvantaged (Barreto & Ellemers, 2005; Swim et al., 1995; Vinnicombe et al., 2019). Indeed, women often hold less powerful positions in society compared to men, and tend to get paid less for the same jobs (European Commission, 2019; Petersen & Morgan, 1995), for example in academia (De Goede et al., 2016).

The prevalence of inequality and sexism are often discussed in the media. This increases awareness of the problem (i.e., it improves "bias literacy"; Pietri et al., 2017) and can be a prerequisite to change things for the better in the long run. Still, the initial impact that exposure to such information may have on women's perceptions, feelings, and motivation has received relatively little attention. From the social exclusion literature we predict that such information about discrimination against one's group could induce or intensify perceptions of being socially excluded, and threaten the fulfillment of people's fundamental needs of belonging, self-esteem, control, and purpose in life (Williams, 2007). Being made aware or reminded of the prevalence of sexism, gender inequality, or the gender pay gap may thus raise awareness of the problem, but also increase immediate perceptions of being socially excluded and threaten fundamental needs. This is important, because these factors may eventually impact women's career motivations.

1.1 | Social exclusion and fundamental needs

When people are excluded (i.e., rejected, neglected, or not fully accepted), this may threaten their fundamental needs (Wesselmann & Williams, 2017; Williams & Nida, 2017). People have a fundamental need to belong to groups and form relationships with others (Baumeister & Leary, 1995). When these ties with others are threatened, people experience a reduced sense of belonging, but also their self-esteem, sense of control, and their idea of purpose in life are negatively affected (Leary, 2001; Williams, 2007). Being excluded also comes with negative affect (Williams, 2009; Williams & Nida, 2017), and immediately triggers hurt feelings, a reaction that has been likened to physical pain (Eisenberger et al., 2006).

For women, exposure to information about the prevalence of sexism may activate the perception that they are personally more likely to experience rejection in society. This threat of rejection is likely to be registered, as research has shown that people constantly monitor their social environments for signs that they may be excluded, to be able to avoid this (Kerr & Levine, 2008; Wesselmann et al., 2009; Williams, 2009). Even rather minimal and ambiguous signs that threaten inclusion (e.g., a brief silence in a conversation, someone not making eye contact) are quickly attended to, and immediately trigger the negative state of exclusion (Koudenburg et al., 2011; Williams, 2009; Wirth et al., 2010). If even such minimal signs elicit exclusion, explicit information about the prevalence of sexism, which is indicative of possible personal rejection in society, is very likely to induce a sense of exclusion as well, along with the associated threatened fundamental needs and negative feelings.

Interestingly, even though theoretical perspectives on interpersonal rejection posit that (gender) discrimination and social exclusion elicit similar negative reactions (for an overview, see Smart Richman & Leary, 2009), the connection between exposure to information on sexism and social exclusion has not been addressed empirically. Some research suggests, however, that information that affirms the prevalence of sexism may negatively affect women in other ways. For example, it has been shown that the more information female participants received about discrimination being the cause of rejection in a job selection procedure, the more negative they felt (Stroebe et al., 2010b). Other research has highlighted threats to women's social identities as a negative outcome of watching a video intervention that aimed to increase awareness of gender discrimination in technical professions (Pietri et al., 2019). Finally, general well-being has been documented as being negatively impacted after a manipulation that increased beliefs about the pervasiveness of sexism (detectable even one year later among those with inactive coping styles; Foster, 2009; see also Foster et al., 2004).

Instead of testing the impact of exposure to information that one has personally been discriminated against (Stroebe et al., 2010b) or about sexism in specific professions (Pietri et al., 2019), the current article tests the impact of exposure to information about the overall prevalence of gender discrimination in society. In doing so, we did not study well-being but rather—in line with the literature on social exclusion—the possible immediate negative effects on perceptions of being socially excluded, and associated fundamental needs of belonging, control, self-esteem, and purpose in life (Williams, 2009).

Moreover, the current study investigated whether information about sexism could reinforce the expectation to be treated unequally (see Stroebe et al., 2010a) and discourage women to strive for equal positions. Among members of stigmatized groups, career expectations and motivations have previously been shown to be reduced by discrimination, or perceptions that others have negative stereotypes about them (Stangor & Sechrist, 1998; Van Laar et al., 2010, 2013). By activating the perception that women are discriminated against in society, information about sexism may similarly reduce gender-related career expectations and motivations. In the current study, we also test whether perceptions of being excluded, negative feelings, and the reduced need fulfillment that women may experience after exposure to information on sexism, may in part explain demotivation in the job market (see Lustenberger & Jagacinski, 2010). Finally, we test whether reduced gender-related career expectations also contribute to the lowered career motivation, as we reasoned that low expectations of success could undermine the motivation to achieve higher positions, which would be consistent with expectancy-based motivation models (e.g., Vroom, 1964; Wanous et al., 1983) that postulate that motivation for a given behavior or action is determined mostly by people's expectations that a preferred outcome is achieved.

To summarize, the current article tests women's immediate reactions to exposure to information on sexism in society. Because we were not only interested in women's perceptions of being excluded, threatened fundamental needs, and negative feelings, but also in women's gender-related career expectations and motivation in the job market, our four studies focused specifically on women who were relatively ambitious to achieve high positions in the job market. Using findings from the social exclusion literature, we predict that being informed or made aware of sexism in society can induce perceptions of being excluded, and consequently harm the fundamental needs and evoke negative feelings. In addition, we test whether women's gender-related career expectations and motivation in the job market are negatively affected by information about sexism, and explore if women's perceptions of exclusion, need threats, feelings, and/or gender-related career expectations to be treated unequally mediate the effect on career motivation. First, a correlational study (Study 1) tests whether women with stronger perceptions that sexism is present in society also experience stronger personal perceptions of being excluded and lowered gender-related career expectations and motivation in the job market. Next, in Studies 2, 3, and 4, we manipulate the information that participants are exposed to, and so test experimentally whether exposure to information about the prevalence of sexism, in the form of fictitious research results (Study 2) or actual newspaper articles (Studies 3 and 4), directly induces exclusion perceptions, and the negative career effects. In all studies, all exclusion criteria, measures, and conditions (where applicable) are reported, and no analyses were made before data collection was terminated. Without a clear benchmark or prior studies to go on, we decided to collect data using a sample size of 250 for the correlational study. In the experimental studies, at least 50 participants were recruited per cell. For each study,

we report a sensitivity power analysis. All studies were approved by the Psychology Research Ethics Committee of Leiden University.

2 | STUDY 1

Being informed or aware about the prevalence of sexism in society may intensify the perception of being socially excluded. As a first step of testing this possible impact of awareness of sexism, Study 1 tested whether female participants who currently had a stronger perception that women are discriminated against in society, also experienced a stronger sense of personal exclusion, negative feelings, and threats to their fundamental needs. Moreover, we tested whether this perception was negatively related to gender-related expectations of success and motivation in the job market.

2.1 | Methods

2.1.1 | Participants and design

Through the online Prolific network, 256 British female participants between 18 and 50 years old were recruited. As this study also assessed career expectations and motivations, only participants with at least a Bachelor's degree were selected to participate, to increase the possibility of obtaining a sample that would be relatively ambitious to achieve high positions in the job market. Career ambition turned out to be reasonably high in the sample ($M = 4.9$, $SD = 1.6$, on a seven-point scale).[1] Seven respondents were removed from the data set, because they did not finish the entire survey ($n = 5$), or did not identify as female ($n = 2$). A sensitivity power analysis with $\beta = .80$ and $\alpha = .05$ showed that with this remaining sample of $N = 249$ (mean age 32.9, $SD = 7.5$), the minimum effect size to consider the observed effect as relevant is $\rho = .18$. The preregistration for Study 1 can be found at https://osf.io/gqw7s.

2.1.2 | Procedure

After agreeing with the consent form, participants answered a series of questions (full questions can be found in the preregistration for this study). All items were answered on a 7-point scale with 1 = *Totally disagree*, 7 = *Totally agree*, unless noted otherwise. First, participants indicated their agreement with five statements, measuring the extent to which they perceived society to be sexist (e.g., "Discrimination against women is still a problem", $\alpha = .85$, adapted from the modern sexism scale, Swim, et al., 1995; as in Barreto & Ellemers, 2005).

Then, two items measured participants' perception of exclusion (e.g., "As a woman, I am excluded by society", $\alpha = .93$). With two items each, threats to the four needs were measured (adapted from Lelieveld et al., 2013): belonging (e.g., "As a woman, I do not really feel like I belong in society"), control (e.g., "As a woman, I experience personal control over where I end up in society"), self-esteem (e.g., "Being a woman in this

society makes me feel good about myself"), and meaningful existence (e.g., "Being a woman, I feel invisible in society"[2]). As commonly done in social exclusion research, all items were collapsed into one measure of need threats ($\alpha = .90$; see Gerber et al., 2017).[3] Feelings were measured by agreeing to the statement: "My position as a woman in society makes me feel…", "sad", "angry", "hurt", "happy", "elated", "cheerful", with the last three items reverse coded ($\alpha = .90$, adapted from Van Beest & Williams, 2006).[4]

Next, participants' expectations and motivation in their careers were measured. In an open-ended question, participants were asked to indicate the highest position they would like to hold in working life or society, to ensure that they had their own preferred positions in mind when reflecting on their expectations and motivations.[5] They proceeded to indicate their expectations of achieving this position considering gender discrimination (e.g., "Personally, I think that compared to an equally skilled male candidate, my chances of achieving this position are much smaller", $\alpha = .74$), and the extent to which they were motivated about achieving this position ("As a woman, how do you feel about trying to acquire this position?" answer options 1 = *Demotivated*, 7 = *Motivated*, and 1 = *Discouraged*, 7 = *Encouraged*, $\alpha = .77$). To check whether the participants who were collected through the Prolific panel were at least moderately ambitious in their career, participants indicated their career ambition ("In general, how ambitious do you see yourself with regards to your career?"). Finally, participants indicated their age and gender, and were thanked, debriefed, and paid for participating.

2.2 | Results

2.2.1 | Perceptions of society as sexist

As predicted, perceiving society as more sexist was strongly and positively correlated with perceptions of being excluded from society,

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[1] Career ambition was not significantly related to perceptions of society as sexist, $r = .06$, $p = .337$.

[2] This particular scale item (aimed to measure meaningful existence) was adapted from previous work (Lelieveld et al., 2013). Because (young) women tend to be objectified more than men, one may wonder whether women may in general provide a relatively high score on this item. We do, however, expect that the score would be higher when learning that one's group is discriminated against than when this information is not provided. It is this latter effect that is crucial for the current purposes. Moreover, we also used a second item to assess meaningful existence, which was "Being a woman in this society gives me the feeling that my life is meaningful". The fact that scores on both measures consistently correlated negatively in all four studies (Study 1; −0.50, $p < .001$; Study 2; −0.42, $p < .001$; Study 3; −0.43; $p < .001$; Study 4; −0.36, $p < .001$—i.e., higher scores on feeling invisible came with lower scores on feeling life was meaningful) substantiates this view.

[3] Across all four studies, we also analyzed the effects on all four needs separately. In Study 1, we found similar correlations between perceived sexism and the four needs. In Studies 2–4, we found similar and significant effects of the information on sexism condition (compared to the other conditions) on all four needs, except for the need for meaningful existence in Study 3.

[4] The reason for treating need threat and feelings as separate constructs is that these constructs are considered theoretically distinct. Theoretically, the perceptions of threats should not be equated with the feelings that people experience. This is why most studies on social exclusion measure and report these concepts separately (e.g., Lelieveld et al., 2013; Van Beest & Williams; for an overview see the meta-analysis of Hartgerink et al., 2015). To stay close to this large body of research on social exclusion, and to be able to compare our findings to that literature, we therefore also chose to measure the concepts separately. Moreover, Gerber et al. (2017) studied the construct validity of the Need Threat scale, and showed that the scale is a valid measure on its own.

[5] In the open answers, 14 of 249 participants said they did not want to achieve any position higher up in the workplace/society. These participants were still included in the analyses. Excluding them yielded similar or even stronger effects, but did not lead to different conclusions.

TABLE 1   Pearson correlations (Study 1)

	1	2	3	4	5
1. Perceived Sexism					
2. Perceived exclusion	.53				
3. Need threats	59	.78			
4. Negative feelings	.55	.61	.80		
5. Expectations	−.55	−.47	−.55	−.50	
6. Motivation	−.36	−.51	−.58	−.52	.51

Note. All correlations are significant with $p < .001$.
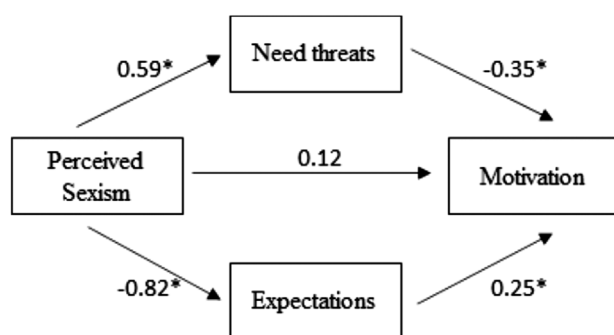
Note. Significant beta-weights ($p < .05$) are indicated with an *

FIGURE 1   Significant mediators of the relation between perceived sexism and motivation (Study 1). Significant beta-weights ($p < .05$) are indicated with an *

increased need threats, and negative feelings. Increased perceptions of society as being sexist were strongly and negatively correlated with expectations of acquiring a high job position despite gender discrimination, and motivation to acquire this position. All correlations between these variables can be found in Table 1.

2.2.2 | Exploratory mediation analysis

In addition to our preregistered analyses, we also tested whether the relation between perceiving society as sexist and participants' lower motivation in the job market was mediated by their perceptions of being excluded, need threats, feelings, and gender-related expectations of success in the job market. When all these factors were simultaneously added in a mediation analysis with 10.000 bootstrap resamples, two indirect pathways were significant (see Figure 1): Both participants' expectations, $b = −0.20$, 95% CI [−0.31, −0.11], and their need threats, $b = −0.20$, 95% CI [−0.40, −0.03], significantly mediated the relationship between perceiving society as sexist, and motivation in the job market. The indirect effects through exclusion, $b = −0.09$, 95% CI [−0.22, 0.03], and negative feelings, $b = −0.09$, 95% CI [−0.23, 0.04], were not significant.

2.3 | Discussion

A first correlational study shows that perceiving society as a sexist environment was associated with an increased perception of being excluded from society, negative feelings, and threatened fundamental needs. Moreover, perceiving society as sexist was related to lower gender-related expectations of career achievement and reduced career motivation. An exploratory mediation analysis further showed that both participants' threatened fundamental needs and their lowered gender-related expectations of success contributed to why they felt less motivated about their careers. Exclusion and negative feelings did not mediate these effects. Note that the mediation analyses for this and the subsequent studies were exploratory and, therefore, they were not taken into account when deciding on the sample size. Inclusion of additional factors in mediation analyses may reduce power to detect all modeled effects. The results for the mediation analyses should therefore be interpreted with caution; future research may benefit from including confirmatory mediation analyses, with larger samples.

It is important to emphasize that the correlational nature of this study does not allow the inference of any causal order of the effects. It showed that increased perceptions of the prevalence of sexism in society are associated with increased experiences of social exclusion, and reduced gender-related career expectations and motivations. While increased perceptions that women are discriminated against in society may cause part of the reported negative effects, the reverse may also be true. Perceptions of being excluded may contribute to the perception that women as a group are discriminated against in society. Study 2 manipulated the information that participants received, to determine whether being informed about sexism in society directly resulted in these negative effects.

3 | STUDY 2

The main objective of Study 2 was to test whether exposure to information on sexism in society would directly induce the perception of being socially excluded, threatened needs, negative feelings, and reduced gender-related career expectations and motivation, compared to a control condition in which no information was provided. However, additionally, exposure to information on sexism was compared to a condition in which participants received information that denied sexism in society. Exposure to information that denies sexism was a relevant comparison, because this denial (i.e., the idea that sexism is a thing of the past, that is no longer relevant in today's society) is an idea that is directly opposed by information about the prevalence of sexism.

Participants' reactions to denials of sexism could go two ways. First, denials of sexism may affect women as negatively as information on sexism. Denying the occurrence of sexism in society is considered a form of *modern sexism* (Swim et al., 1995) that implies that women themselves are somehow responsible and/or deserving of an inferior position in society (Crocker & Major, 1989). Denials of sexism also

challenge the necessity to improve women's position (Barreto & Ellemers, 2015; Becker & Swim, 2011). These implications may make women feel excluded from society, resulting in threatened needs, negative feelings, and lowered gender-related career expectations and motivation. In line with this possibility, previous research has shown that exposure to denials of sexism can induce fear and insecurity in women (Barreto & Ellemers, 2005).

Alternatively, however, denials of sexism may not affect women negatively. There is some empirical evidence that members of marginalized groups have higher overall well-being when they deny (vs. acknowledge) the occurrence of discrimination, because it satisfies their need to believe in a just world (Bahamondes et al., 2019; Napier et al., 2020). Moreover, denials of sexism explicitly communicate that women are *not* discriminated against in society, and may thus signal an inclusive environment that does not trigger the exclusion response. From this perspective, results in the denial of sexism condition would be similar to those in the control condition.

3.1 | Method

3.1.1 | Participants and design

The between-subjects study with three conditions (information on sexism vs. denial of sexism vs. control condition) was conducted in the Leiden University lab, among 159 female participants. Two participants were removed from the analyses for not completing the survey, or not identifying as female. A sensitivity power analysis with $\beta = .80$ and $\alpha = .05$ showed that with the remaining sample of $N = 157$ (mean age 20.6, $SD = 3.1$), the minimum effect size to consider the observed effect as relevant is $f = 0.25$, or $\eta_p^2 = 0.06$. The preregistration for this study can be found at https://osf.io/pckz9.

3.1.2 | Procedure and materials

After entering the lab and agreeing with the consent form, participants in the information on sexism and denial of sexism conditions read the results of a fictional prior study. In these conditions, participants read, respectively, that the study showed that (a) men and women have unequal/equal chances of achievement, (b) discrimination against women is still/no longer a problem, (c) the fact that few women hold high positions in organizations is due to discrimination/other factors than discrimination, (d) in Dutch society men and women are generally treated unequally/equally, and (e) women are often/almost never treated in a sexist manner. This method was adapted from Barreto and Ellemers (2005), who presented these modern sexist statements as the opinion of most men/women, according to a previous study. As the ingroup/outgroup source of these ideas was less relevant in this study, the statements were simply presented as findings from a study here. To strengthen the manipulation, participants were asked to summarize in a couple of sentences what the results of the study were, and additionally were given 30 s to think of what the results meant for them per-

sonally.[6] Participants in the control condition answered the questions below without receiving any information about the fictitious study, so women's baseline state could be assessed in the absence of exposure to any information or mention of sexism.

All participants indicated their perception of being excluded ($\alpha = .90$), need threats ($\alpha = .86$), and feelings ($\alpha = .93$). Questions were largely the same as in Study 1, except that the phrase "as a woman" was removed from the questions in all conditions, to avoid salience of participants' gender identity in the control condition. When necessary for the understanding of the question, this phrase was replaced with the more general "(given) my position in society". The exact formulation of each of the questions can be found in the preregistration of this study. Finally, participants were asked to think of the highest possible job they would want to achieve after graduating, and answered the same questions on gender-related expectations ($\alpha = .71$), and motivation ($\alpha = .72$), that were used in Study 1. At the end of the study, participants were thanked, debriefed, and paid for participation.

3.2 | Results

Results of a series of One-way ANOVAs (Table 2) and contrast analyses (Table 3) support all hypotheses. First, the manipulation consistently impacted participants' sense of exclusion, need threats, and feelings. It also changed their gender-related expectations of success in the job market, and their motivation to achieve high positions in the job market. More importantly, the simple contrasts demonstrate that in the information on sexism condition, exclusion, need threats, and negative feelings were increased relative to the control condition, and also relative to the denial of sexism condition. Moreover, gender-related expectations of success in the job market and motivation towards achieving a high position were decreased. Note, though, that the effect size for expectations and motivation are lower (i.e., $\eta_p^2 = 0.05$ for both) than the value obtained in the sensitivity power analysis (i.e., $\eta_p^2 = 0.06$). Therefore, it is important to replicate these effects (see also Studies 3–4). There were no significant differences on any of these factors between the denial of sexism and the control condition. Finally, all correlations between the variables can be found in Table 4.

3.2.1 | Exploratory analysis

An exploratory mediation analysis tested whether lower career motivation in the information on sexism condition, was mediated by perceived exclusion, need fulfillment, negative feelings, and/or gender-related career expectations. As there were three conditions, the indirect pathways were tested for the information on sexism versus denial of sexism contrast, and the information on sexism versus control

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[6] These instructions were added, after the same manipulation without these instructions yielded only null effects among a Prolific sample (preregistered here https://osf.io/anfh8/?view_only=8e6257674bf14254a8ac1844c6242d1f). Without these instructions, the participants possibly clicked through without seriously attending to the information in the manipulation.

TABLE 2 One-way ANOVA and simple contrast results, including means and SDs (Study 2)

	M (SD)			Statistics		
	Information on sexism	Denial of sexism	Control	F (2, 154)	p	η_p^2
Perceived exclusion	3.4[a] (1.2)	1.8[b] (1.2)	1.6[b] (1.0)	39.15	<.001	.34
Need threats	3.4[a] (0.9)	2.5[b] (0.9)	2.7[b] (0.9)	14.78	<.001	.16
Negative feelings	3.9[a] (1.4)	2.5[b] (1.2)	2.4[b] (0.9)	27.28	<.001	.26
Expectations	4.2[a] (1.4)	4.8[b] (1.6)	5.0[b] (1.5)	3.76	.026	.05
Motivation	4.8[a] (1.3)	5.4[b] (1.2)	5.4[b] (1.1)	4.10	.019	.05

Note: Different superscripts within rows indicate significant differences at $p < .05$.

TABLE 3 Statistics for the Contrasts Between Conditions: 1 = Information on Sexism, 2 = Denial of Sexism, and 3 = Control (Study 2)

		Statistics		
		F (1, 154)	p	d
Perceived exclusion	Contrast 1–2	64.47	<.001	-1.61
	Contrast 1–3	52.54	<.001	-1.33
	Contrast 2–3	0.67	.414	-0.17
Need threats	Contrast 1–2	18.22	<.001	-0.85
	Contrast 1–3	25.58	<.001	-0.99
	Contrast 2–3	0.59	.433	0.15
Negative feelings	Contrast 1–2	43.07	<.001	−1.30
	Contrast 1–3	38.79	<.001	−1.09
	Contrast 2–3	0.13	.715	−0.08
Expectations	Contrast 1–2	6.86	.010	0.53
	Contrast 1–3	4.05	.046	0.39
	Contrast 2–3	0.38	.537	0.12
Motivation	Contrast 1–2	6.00	.015	−0.48
	Contrast 1–3	6.30	.013	−0.47
	Contrast 2–3	0.00	.961	0.01

TABLE 4 Pearson correlations (Study 2)

	1	2	3	4
1. Perceived exclusion				
2. Need threats	.65			
3. Negative feelings	.78	.77		
4. Expectations	−.43	−.49	−.44	
5. Motivation	−.23	−.40	−.31	.30

Note. All correlations are significant with $p < .001$.

condition contrast. The PROCESS macro was used to dummy code these contrasts to fit in one model (see Hayes & Preacher, 2014) with 10,000 bootstrap resamples, and all mediators added simultaneously. Women's gender-related career expectations did not mediate the effect of information about sexism on career motivation, either compared to the denial of sexism, $b = 0.07$, 95% CI [−0.01, –0.24], or the control condition, $b = 0.09$, 95% CI [−0.01, –0.29]. Neither perceived exclusion, $b = −0.21$, 95% CI [−0.58, –0.19] and $b = −0.24$, 95% CI [−0.64, –0.21], respectively, or negative feelings, $b = 0.03$, 95% CI [−0.41, –0.45] and $b = 0.03$, 95% CI [−0.44, –0.45], respectively. However, the indirect effect of sexism information on career motivation was significant through need threats (see Figure 2), both compared to the denial of sexism, $b = 0.40$, 95% CI [0.10, –0.82], and the control condition, $b = 0.34$, 95% CI [0.07, –0.73]. This suggests that information on sexism lowers women's career motivation in part because it threatens their basic needs.

3.3 | Discussion

Results from Study 2 demonstrated that exposure to information about the occurrence of sexism in society increased women's perception of being excluded from society. This exposure also resulted in threatened fundamental needs and more negative feelings. Moreover, it reduced gender-related expectations to acquire high positions in the

FIGURE 2 Significant mediators of the relation between conditions and motivation (Study 2). Significant beta-weights ($p < .05$) are indicated with an *

job market despite gender inequality, and lowered motivation to attain such positions. An exploratory mediation analysis did not support the idea that the negative effect of exposure to information about sexism on career motivation was caused by reduced gender-related expectations of what was achievable in the job market. Instead, the negative effect on motivation could partly be explained by the experience of threats to the needs of belonging, self-esteem, control, and purpose after reading information on sexism. Denials of sexism did not induce negative effects relative to the control condition. In the General Discussion, we address how this relates to other studies that have shown harmful effects of denials of sexism.

Although Study 2 demonstrated the impact of information about sexism on exclusion perceptions, gender-related career expectations, and motivation, it remained mute about the role that women's personal experiences as victims of sexism can play in this matter. In Study 3, these experiences were taken into account. Moreover, in Study 3 we also changed the way in which participants were exposed to information about sexism. In Study 2, the information was provided as being part of a scientific study on sexism. Such information may be regarded as objective and with high informational value. In real life, however, people are often exposed to information about sexism via other media, such as newspapers. These media may be more important to people, but it might also more easily be discounted (as being less objective). By using exposure to actual news articles in Study 3, we could test whether the findings would extend beyond exposure to scientific articles. Study 3 tested whether instead of the results of a fictional study on sexism, exposure to actual news articles about sexism would yield the same results. Finally, for Study 3 we again used a Prolific sample to make sure that we included women of different age groups, to avoid focusing only on younger university students who may also have less powerful—if any—positions in the job market.

4 | STUDY 3

Study 3 tested if the effects of information on sexism versus a control condition that were documented in Study 2 would replicate in a setting where participants read actual news articles about sexism. Again,

we predicted that perceptions of being excluded, negative feelings, and need threats would be higher among female participants who read versus those who did not read news articles about sexism. We also predicted that they would have lower gender-related expectations of success in the job market, and that they would feel more demotivated after reading news articles about the occurrence of sexism.

Moreover, Study 3 explored if the impact of exposure to information on sexism would change depending on how frequently women had personally experienced being treated in a sexist way. Previous literature supports both the possibility that the effects would be attenuated for women who had *less* frequent experiences, or attenuated for women who had *more* frequent experiences with being treated in a sexist way. First, research has demonstrated that individuals who were personally less affected by discrimination were also more likely to disregard information that suggested discrimination against them (Barreto & Ellemers, 2015; Stroebe et al., 2010b). Similarly, women who did not expect to be discriminated against have been shown to attend less to signs of sexism (Kaiser et al., 2006). For women who have been discriminated against less often, information about sexism in society may thus be disregarded to a greater extent, and as a result be less impactful. On the contrary, reduced impact of information on sexism could be typical for women who have had more frequent experiences with discrimination. After all, for women with frequent first-hand experiences with being treated in a sexist way, the threat of discrimination may generally be more active, triggering a range of negative effects (Branscombe, 1998; Schmitt & Branscombe, 2002). For these individuals, exposure to information on the prevalence of sexism may then have little additional impact beyond these effects. The study was preregistered at: https://osf.io/jkqbv.

4.1 | Methods

4.1.1 | Participants and design

The between-subjects experiment had two conditions (information on sexism vs. control condition), and was conducted on Prolific. As preregistered, we aimed to collect data of 250 participants. Data of 265 British female participants between 18 and 50 years old, with at least a Bachelor's degree, were collected. Incomplete responses of 13 participants were removed, and one participant who did not identify as female was excluded from the analyses. In line with Study 1, the participants expressed reasonable career ambition ($M = 4.5$, $SD = 1.6$). A sensitivity power analysis with $\beta = .80$ and $\alpha = .05$ showed that with the sample of $N = 251$ (mean age 31.9, $SD = 7.6$), the minimum effect size to consider the observed effect as relevant is $d = 0.31$.

#### 4.1.2 | Procedure and materials

After agreeing with the terms in the consent form, participants were informed that they would read a series of newspaper articles, and

answer a series of questions. Participants in the information on sexism condition were shown screenshots containing the opening paragraphs of six news articles,[7] for 30 s each. The articles were selected from a broad range of well-known British newspapers, and all described the prevalence of sexism in society, for example reporting that women are underrepresented in higher functions in the workplace, or are often paid less than men. After reading these articles, participants were asked to summarize the main point of the articles, and were instructed to reflect on what the articles meant for them personally. Participants in the control condition answered the questions below without reading any news article. They were not provided with a set of unrelated news articles, as the impact of reading such a set of articles would be hard to estimate.

Participants in both conditions indicated their perceptions of being excluded ($\alpha = .92$), need threats ($\alpha = .90$), and negative feelings ($\alpha = .93$) on the same questions as in Study 2. Participants continued to indicate the highest possible position that they wanted to achieve in working life, and answered the same questions about their gender-related expectations of success ($\alpha = .72$) and demotivation in the job market ($\alpha = .86$) as in Study 2. As a control, participants' ambition in the job market was measured with the same question as in Study 1. Then, participants indicated how often they experienced being treated in a sexist manner in their lives: "How often have you personally encountered a situation in which you were treated in a sexist way?" and "How often have you personally encountered a situation in which you felt discriminated against because of your gender?", 1 = *Never*, 7 = *Very often*, ($\alpha = .90$). Full questions are documented in the preregistration for this study. Finally, participants were thanked, debriefed, and paid.

4.2 | Results

A series of independent *t*-tests were conducted to compare the participants who read news articles about sexism (information on sexism condition) with participants who did not (control condition). All results can be found in Table 5. As predicted, participants who read news articles about sexism reported significantly elevated levels of exclusion, need threats, and negative feelings, and lower gender-related expectations of success and motivation in the job market. All correlations between the variables (including experienced sexism) can be found in Table 6.
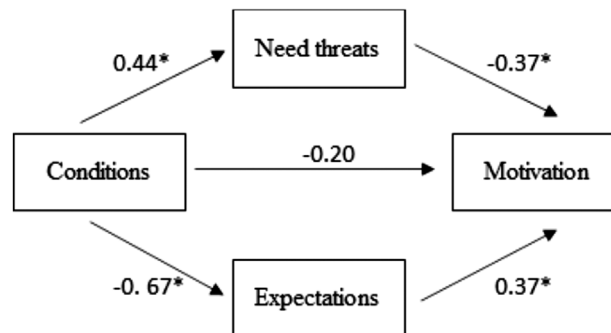
Note. Significant beta-weights ($p < .05$) are indicated with an *

FIGURE 3 Significant mediators of the relation between conditions and motivation (Study 3). Significant beta-weights ($p < .05$) are indicated with an*

4.2.1 | Exploratory analyses

A moderation analysis tested whether participants' prior experiences with having been treated in a sexist manner, would moderate the effect of the conditions (i.e., reading news articles about sexism, or not) on the dependent variables. A sensitivity power analysis (with $\beta = .80$ and $\alpha = .05$) including this additional factor showed that the minimum effect size to consider the observed effect as relevant is $f^2 = .02$. Next, the analyses showed that the frequency with which participants indicated they had been discriminated against because of their gender differed marginally between the information on sexism ($M = 4.2$, $SD = 1.5$) and the control condition ($M = 3.9$, $SD = 1.5$), $t(249) = 1.82$, $p = .070$, $d = -0.23$. A regression analysis with the centered predictors Condition, Experienced Sexism, and their interaction demonstrated that the interaction effect between the condition and the frequency with which women experienced sexism was not significant for any of the dependent variables (see Table 7 for all statistics). For each of these variables, the main effects of condition and experienced sexism were significant. Across both conditions, people who had more frequently experienced being treated in a sexist way, thus indicated increased exclusion perceptions, need threats, and negative feelings, and lower gender-related career expectations and motivation.

To test possible mediating variables that help explain the reduced career motivation in the information on sexism condition, a mediation analyses with 10,000 bootstrap resamples was conducted, in which exclusion perceptions, negative feelings, need threats, and gender-related career expectations were added simultaneously. The mediation analysis demonstrated that career expectations, $b = -0.25$, 95% CI, [-0.46, -0.10], and need threats, $b = -0.16$, 95% CI [-0.41, -0.03] mediated the effect of conditions on demotivation in the job market (see Figure 3). Exclusion, $b = 0.22$, 95% CI [-0.03, -0.51], and negative feelings, $b = -0.16$, 95% CI, [-0.41, -0.01], were not significant mediators.

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[7] https://www.dailymail.co.uk/news/article-1175800/Why-women-dont-close-glass-ceiling-workplace.html; https://www.independent.co.uk/news/business/news/graduate-recruiters-accused-of-sexism-with-less-than-42-of-jobs-offered-to-women-10492216.html; https://www.independent.co.uk/life-style/women/women-work-career-top-jobs-equality-study-fawcett-society-a9280456.html; https://www.theguardian.com/society/2019/oct/22/sexist-doctors-stark-reminder-workplaces-penalise-women; https://www.thesun.co.uk/news/4884692/gender-pay-gap-uk-companies-women-less-men/; https://www.telegraph.co.uk/women/business/revealed-almost-adults-prejudice-against-women/.

TABLE 5 T-test Results, including means and SDs (Study 3)

| | Conditions M (SD) | | Statistics | | |
	Information on sexism	Control	t	p	d
Perceived exclusion	3.6 (1.5)	2.2 (1.1)	8.51	< .001	−1.07
Need threats	3.9 (1.2)	3.4 (1.1)	3.12	.002	−0.39
Negative feelings	4.1 (1.4)	3.3 (1.2)	5.15	< .001	−0.65
Expectations	3.7 (1.8)	4.3 (1.6)	−3.17	.002	0.40
Motivation	4.0 (1.7)	4.6 (1.4)	-2.86	.005	0.36

TABLE 6 Pearson correlations (Study 3)

	1	2	3	4	5
1. Perceived exclusion					
2. Need threats	.72				
3. Negative feelings	.71	.86			
4. Expectations	.46	−.54	−.52		
5. Motivation	−.39	−.54	−.53	.59	
6. Experienced sexism	.33	.39	.37	−.45	−.22

Note. All correlations are significant with p < .001.

4.3 | Discussion

Study 3 demonstrated that news articles with information on sexism (vs. not reading these articles) induced perceptions of being excluded, threats to the fundamental needs, and negative feelings. It also lowered women's gender-related expectations of success in the job market, and demotivated them to achieve higher positions. This conceptually replicated the findings from Study 2. Moreover, exploratory analyses provided evidence that lowered expectations and reduced need ful-

fillment after exposure to information about sexism both contributed to the observed career demotivation. Finally, no evidence was found that the negative effects of exposure to information that confirmed sexism were dependent on the extent to which participants felt they had experienced gender discrimination in their own lives.

Even though the results of Study 3 showed that participants' personal experience with sexism did not moderate the negative effects of exposure to sexism information, one may reason that measuring the personal experience with sexism after our manipulation may have influenced participants' recollection of the personal experience with sexism. To further verify that experienced sexism indeed does not influence the negative effects of exposure to sexism information, we conducted a fourth and final study where we measured sexism experience before participants read the news articles with sexism information.

5 | STUDY 4

In Study 4, participants read the same news articles with information on sexism and we again measured exclusion perceptions, threats to the fundamental needs, and negative feelings. Moreover, we again also

TABLE 7 Moderation analyses results for experienced sexism (S), condition (C), and the experienced sexism × condition interaction (S × C; Study 3)

| | | Statistics | | | |
		t(1, 247)	b	p	f²
Perceived exclusion	S	5.33	0.28	< .001	.45
	C	−8.31	−0.67	< .001	
	S × C	−1.61	−0.09	.110	
Need threats	S	6.51	0.29	< .001	.22
	C	−2.60	−0.17	.010	
	S × C	−1.10	−0.05	.272	
Negative feelings	S	6.04	0.30	< .001	.27
	C	−4.77	−0.36	< .001	
	S × C	−1.01	−0.05	.313	
Expectations	S	−7.80	−0.50	< .001	.30
	C	2.61	0.25	.010	
	S × C	0.72	0.05	.471	
Motivation	S	−3.29	−0.21	.001	.09
	C	2.52	0.24	.012	
	S × C	1.13	0.07	.261	

tested the effects on women's gender-related expectations of success in the job market, and the motivation to achieve higher positions. As noted above, the only difference from Study 3 was that we measured participants' experience with sexism before and not after our manipulation. The study was preregistered at: https://osf.io/z8b6r.

5.1 | Methods

5.1.1 | Participants and design

The between-subjects experiment had two conditions (information on sexism vs. control condition), and was conducted on Prolific. As preregistered, we collected data of 250 participants between 18 and 50 years old, with at least a Bachelor's degree. Three participants who did not identify as female were excluded from the analyses. In line with Studies 1 and 3, participants expressed reasonable career ambition ($M = 4.5$, $SD = 1.5$). A sensitivity power analysis with $\beta = .80$ and $\alpha = .05$ showed that with the sample of $N = 247$ (mean age 33.4, $SD = 8.4$), the minimum effect size to consider the observed effect as relevant is $d = 0.32$.

5.1.2 | Procedure and materials

After agreeing with the terms in the consent form, participants were first asked to answer the questions about how often they experienced being treated in a sexist manner in their lives, which were the same questions as in Study 3 ($\alpha = .88$). Importantly, asking participants to answer these questions could be seen as presenting participants with information about sexism, which could increase perceptions of being excluded in the control condition and the information on sexism condition alike. In an effort to minimize the effect of this potential limitation, we added filler items that asked about participants' work experience (e.g., "How often have you personally encountered a situation in which you had to work on multiple tasks at the same time?" and "How often have you personally encountered a situation in which you collaborated with others?"). Full questions are documented in the preregistration for this study.

After answering the questions, participants were informed that they would read a series of newspaper articles, and answer a series of questions. Participants in the information on sexism condition were shown the same screenshots as in Study 3. Participants in the control condition answered the questions below without reading any news article. Participants in both conditions again indicated their perceptions of being excluded ($\alpha = .93$), need threats ($\alpha = .89$), negative feelings ($\alpha = .91$), and the highest possible position that they wanted to achieve in working life. Moreover, they answered the same questions about their gender-related expectations of success ($\alpha = .73$) and demotivation in the job market ($\alpha = .84$) as in Studies 2 and 3. Participants' ambition in the job market was measured with the same question as in Studies 1 and 3. Finally, participants were thanked, debriefed, and paid.

5.2 | Results

A series of independent t-tests were conducted to compare the participants who read news articles about sexism (information on sexism condition) with participants who did not (control condition). All results can be found in Table 8. First, results showed that the frequency with which participants indicated they had prior experience of being treated in a sexist manner did not differ significantly between the information on sexism and the control condition. We then examined how information on sexism affected exclusion perceptions, needs threats, and negative feelings. As predicted, participants who read news articles about sexism reported significantly higher levels of exclusion, need threats, and negative feelings. Finally, unlike Study 3, we did not find support for our hypothesis that information on sexism leads to lower gender-related expectations of success or a lower motivation in the job market. All correlations between the variables (including experienced sexism) can be found in Table 9.

With a moderation analysis we again tested whether participants' prior experiences of having been treated in a sexist manner would moderate the effect of the dependent variables. A sensitivity power analysis (with $\beta = .80$ and $\alpha = .05$) including this additional factor showed that the minimum effect size to consider the observed effect as relevant is $f^2 = 0.04$. A regression analysis with the centered predictors Condition, Experienced Sexism, and their interaction demonstrated that the interaction effect between the condition and the frequency with which women experienced sexism was not significant for any of the dependent variables (see Table 10 for all statistics).

5.3 | Discussion

Replicating the findings of Study 3, we observed that news articles with information on sexism (vs. not reading these articles) induced perceptions of being excluded, threats to the fundamental needs, and negative feelings, supporting our main hypotheses. Also, we found no evidence that these negative effects of exposure to sexism information were dependent on prior experience with sexism, as indicated by the moderation analyses. Study 4, however, also showed that information on sexism did not lower women's gender-related expectations of success in the job market, and did not demotivate them to achieve higher positions. Possibly, the subsequent manipulation of being reminded of sexism versus not being reminded of it did not produce differential effects, because women in both conditions were already reminded of sexism. While Study 4 may thus have more adequately measured prior experience with sexism, assessing the concept before our sexism information manipulation may have reduced the influence of the sexism information on participants' expectations and motivations. Future research could measure prior experience with sexism a couple of days or weeks prior to the sexism information manipulation (see e.g., Ramati-Ziber et al., 2020) to reduce possible effects of being reminded.

TABLE 8 T-test results, including means and SDs (Study 4)

| | Conditions M (SD) | | Statistics | | |
	Information on sexism	Control	t	p	d
Experienced sexism	3.5 (1.5)	3.5 (1.4)	0.20	.841	0.03
Perceived exclusion	3.6 (1.5)	2.0 (1.0)	10.09	<.001	1.29
Need threats	3.9 (1.1)	3.3 (1.0)	4.59	<.001	0.58
Negative feelings	4.2 (1.4)	3.3 (1.1)	5.47	<.001	0.70
Expectations	4.1 (1.5)	3.9 (1.7)	1.08	.297	0.14
Motivation	4.3 (1.6)	4.3 (1.4)	0.51	.613	0.07

TABLE 9 Pearson correlations (Study 4)

	1	2	3	4	5
1. Perceived exclusion					
2. Need threats	.70*				
3. Negative feelings	.70*	.83*			
4. Expectations	−.27*	−.42*	−.41*		
5. Motivation	−.21*	−.44*	−.42*	.51*	
6. Experienced sexism	.20*	.24*	.27*	−.29*	−.10

Note. All correlations with an
*are significant with $p < .001$.

TABLE 10 Moderation analyses results for experienced sexism (S), condition (C), and the experienced sexism × condition interaction (S × C; Study 4)

| | | Statistics | | | |
		t(1, 247)	b	p	f²
Perceived exclusion	S	3.93	0.22	<.001	.52
	C	10.47	0.83	<.001	
	S × C	1.47	0.08	.144	
Need threats	S	3.97	0.18	<.001	.18
	C	4.80	0.32	<.001	
	S × C	1.58	0.07	.115	
Negative feelings	S	4.60	0.25	<.001	.23
	C	5.78	0.44	<.001	
	S × C	1.65	0.09	.101	
Expectations	S	−4.82	−0.33	<.001	.10
	C	−1.19	−0.12	.237	
	S × C	0.32	0.02	.752	
Motivation	S	−1.44	−0.10	.151	.01
	C	0.49	0.05	.626	
	S × C	−0.49	-0.03	.626	

6 | GENERAL DISCUSSION

Raising awareness of sexism can be seen as an important step, prompting society to take action against gender inequality (Stroebe et al., 2010a) and countering the harmful idea that sexism is a thing of the past (Swim et al., 1995). Raising awareness of sexism is therefore essential to reduce inequality in the longer term. To understand the negative effects of sexism, it is then also important to document the immediate effect of such awareness. In line with the idea from the social exclusion literature that people are very attentive and sensitive to signs that they are devalued by others (Leary, 2001; Wesselmann et al., 2009; Williams, 2009), we show that being informed or made aware of the prevalence of sexism can directly induce the negative experience of being socially excluded.

Study 1 demonstrated that the more women perceived society to be sexist, the more they felt excluded from society, and the lower were their career expectations and motivation. Next, using an experimental approach, we showed that reading fictional research outcomes (Study 2), and newspaper articles (Studies 3 and 4), that addressed the prevalence of sexism in society induced these exclusion perceptions, need threats, and negative feelings. It also decreased gender-related expectations of being likely to achieve higher career positions, and motivation to achieve such positions.

Our finding that information on sexism reduced career motivation mirrors findings that discrimination can negatively affect motivation in educational programs and the workplace (Van Laar et al., 2010, 2013). It also shows that simple reminders of sexism in society may already induce these effects. Exploratory analyses across the first three studies demonstrated that this demotivation could partly be explained by lowered expectations of what was achievable in the workplace (Studies 1 and 3), and partly by the reduced need fulfillment that participants experienced as a result of information about sexism (Studies 1, 2, 3, but not 4). It thus seems that expectations and need fulfillment that are negatively impacted by exposure to sexism information may play a more important role in explaining subsequent motivation than the perception of being excluded or the feelings that are evoked. The relation between expectations and motivation is consistent with expectancy-value models (e.g., Vroom, 1964; Wanous et al., 1983). The relation between fundamental needs also accords with previous insights (Lustenberger & Jagacinski, 2010). Interestingly, it was not the perception of being excluded itself, but how information on sexism affected the fundamental needs, that appeared to explain the negative impact on motivation. Indeed, belonging (Korpershoek et al., 2019), control (Fisher, 1978), self-esteem (Bénabou & Tirole, 2002), and purpose in life (Martela & Steger, 2016) have individually all been documented as important prerequisites for motivation.

Note, however, that because these analyses were exploratory, additional replication would be important before drawing strong conclusions on these effects. Because all mediators were measured at the same time, it is difficult to establish order effects. For example, consistent with expectancy-value models, we reasoned that gender-related expectations of success mediate the effect of information about sexism on career motivations, such that the causal order would run from expectations to motivation. One could also wonder whether the reverse order might be possible (i.e., that motivations could predict expectations). Empirically, we cannot refute this possibility, which adds to our cautionary note to not overinterpret the findings of our exploratory mediation analyses. Future research could investigate the role of the different mediators, by measuring these variables at different time points or manipulating women's expectations and/or motivations.

Besides highlighting the effects of being informed about sexism, it is notable that Study 2 did not provide evidence that exposure to denials of sexism (an important component of modern sexism) was any more harmful than reading no information about sexism at all. Although denying being personally discriminated against can protect people's well-being (Bahamondes et al., 2019; Napier et al., 2020), being directly exposed to information that denies sexism has previously been found to induce insecurity and fear (Barreto & Ellemers, 2005). Contrary to these findings, in Study 2 women's need fulfillment and feelings were not affected negatively after exposure to denials of sexism. Possibly, these effects were absent because the denials were not recognized as threatening by participants. Expressions of modern sexism can be hard to detect, and are often not recognized as harmful (Barreto & Ellemers, 2005; Swim et al., 1995). Especially since the absence of sexism in society was presented as a research finding in Study 2, and not as an opinion that denies a reality of inequality, the denials may not have been recognized as harmful, and may have failed to trigger the negative effects documented in previous studies (e.g., Barreto & Ellemers, 2005). The current results, then, suggest that, in itself, the message that women are not discriminated against in society can also signal an inclusive environment, which does not induce perceptions of being excluded from society. Such positive interpretations may also be what allows modern sexist ideas to remain unchallenged and contribute to perpetuating the unequal status quo.

The current article has shown that information about discrimination against one's group can affect individuals' immediate well-being. This effect was found, even though it has consistently been shown that members of marginalized groups tend to underestimate how much they are personally affected by discrimination, relative to their group (Bourguignon et al., 2006; Leshner et al., 2018; Ruggiero & Taylor, 1997; Schmitt & Branscombe, 2002; Taylor et al., 1996). Even though, on the basis of the information about sexism that they received, women in our studies may thus have underestimated how much they would personally be affected by discrimination, the threat was still sufficient to trigger or intensify exclusion perceptions. This fits with the idea that even signs that indicate a small chance of future exclusion can trigger the negative experience associated with exclusion (Williams, 2009).

Given that information about the prevalence of gender discrimination in society induced the perception of being excluded, it appears that not only direct and personal experiences with discrimination can be impactful for people's well-being. Rather, information about how one's group is generally treated can also negatively affect individuals. This fits with literature on the phenomenology of being discriminated against. There, it is often stressed that it is people's subjective *perception* of being discriminated against, and the associated *expectation* to be mistreated again in the future, that is predictive of how negative people feel (Banerjee, 2008; Bourguignon et al., 2006; Branscombe, 1998; Dion, 2002; Foster, 2009; Foster et al., 2004; Kobrynowicz & Branscombe, 1997; Schmitt & Branscombe, 2002; Szalacha et al., 2003). Such perceptions and expectations may be activated or shaped by information about the prevalence of discrimination in society (e.g., in the media; see Taylor et al., 1996). That media representations have the potential to shape people's perceptions of their social reality, including gender roles, has been shown previously (Gerbner, 1998; Grau & Zotos, 2016). Future research could address how repeated exposure to information on sexism may activate or shape women's perceptions of sexism, and how this influences their sense of inclusion and exclusion in society in the longer term.

Future research could also study potential moderators of our findings. Building on a logic of shattered assumptions (Janoff-Bulman, 1992), previous research for example showed that sexism has stronger effects on self-esteem and intergroup anxiety in women with high meritocracy beliefs (Foster et al., 2006). Following this, the social exclusion effects observed here may be particularly pronounced for women with positive worldviews on equality. In addition, previous research suggests that negative effects of sexism on well-being may last longer when women engage in inactive coping (e.g., regulate emotions, inaction) as compared to active coping (e.g., confront, demand explanation; Foster, 2009). Following this, it would be interesting to test more long-term effects of information on sexism and test the moderating impact of coping styles. One final moderator that may be of interest for future research is women's education level. As explained in the procedure of Study 1, in order to increase the possibility of studying women who would be relatively ambitious to achieve high positions in the job market, only highly educated women were included in our studies. The findings of the current studies are thus relevant for interventions aimed at highly educated women. Future research could also include women with more diverse educational backgrounds to examine whether our findings are indeed specific to highly educated women, or whether the results hold up for women of all levels of education.

The finding that exposure to information about the prevalence of sexism can induce immediate perceptions of being excluded is in line with previous research demonstrating reduced well-being among individuals who learned that they were discriminated against in a job selection process (Stroebe et al., 2010b), among individuals with increased awareness of gender inequality in technical professions (Pietri et al., 2019), and among those who report gender discrimination to be prevalent after learning that a test-setting may be discriminatory (Foster et al., 2004; see also Foster, 2009). However, such negative effects of receiving information about sexism in society should not

be interpreted as suggesting that information about sexism has a net negative effect (Smart Richman & Leary, 2009). Not attending to or denying sexism is considered a form of sexism (Swim et al., 1995) that obstructs attempts to reduce the current inequality (comparable critiques are found on the colorblindness approach in racial discrimination, see for example Fryberg & Stephens, 2010). Raising awareness of problematic gender inequality, then, is essential in inspiring women to identify with the female ingroup (see Branscombe & Ellemers, 1998), which can be important because this identification can partially alleviate negative well-being effects of gender discrimination (Branscombe et al., 1999; Schmitt et al., 2002). Moreover, raising awareness is key for prompting society and individuals to take action against inequality (Barreto & Ellemers, 2015; Cameron, 2001; Ellemers & Barreto, 2009; Schmitt & Branscombe, 2002; Stroebe et al., 2010a; Van Zomeren et al., 2008b), as perceived injustice not only leads to individual action, but is also a strong predictor of collective action (Van Zomeren et al., 2008a), especially when sexism is seen as a societal rather than an individual problem (Foster et al., 1994). Collective action against gender discrimination may have psychological benefits for those who engage in it (Foster, 2015), which again supports the reasoning that when people take (individual or collective) action, being made aware of sexism can also have positive consequences.

Although the current article focused on how women respond to information about sexism in society, the mechanisms and outcomes discussed here may also be informative for how members of other marginalized groups respond to information about discrimination against their group. Future research could test if, for example, individuals of ethnic, cultural, or sexual and gender minority groups show a similar pattern of exclusion, need threats, and negative feelings, when they are exposed to information about the prevalence of discrimination against their groups. Thereby, the current article can contribute to a better understanding of how awareness of discrimination in society can impact immediate and longer-term social exclusion and inclusion.

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CONFLICT OF INTEREST

The Authors declare that there is no conflict of interest.

ETHICS STATEMENT

All participants provided consent for participation in the studies. The studies were approved by the Psychology Research Ethics Committee of Leiden University.

DATA AVAILABILITY STATEMENT

A data package with anonymised raw data, stimulus materials and analyses syntax is available on DataVerse: https://dataverse.nl/dataverse/SocPsy.

ORCID

Frank T. Doolaard https://orcid.org/0000-0003-3281-9443

REFERENCES

Bahamondes, J., Sibley, C. G., & Osborne, D. (2019). "We look (and feel) better through system-justifying lenses": System-justifying beliefs attenuate the well-being gap between the advantaged and disadvantaged by reducing perceptions of discrimination. *Personality and Social Psychology Bulletin*, 45, 1391–1408. https://doi.org/10.1177/0146167219829178

Banerjee, R. (2008). An examination of factors affecting perception of workplace discrimination. *Journal of Labor Research*, 29, 380–401. https://doi.org/10.1007/s12122-008-9047-0

Barreto, M., & Ellemers, N. (2005). The perils of political correctness: Men's and women's responses to old-fashioned and modern sexist views. *Social Psychology Quarterly*, 68, 75–88. https://doi.org/10.1177/019027250506800106

Barreto, M., & Ellemers, N. (2015). Detecting and experiencing prejudice: New answers to old questions. In J. M. Olson, & M. P. Zanna (Eds.), *Advances in Experimental Social Psychology* (pp. 139–219). Elsevier.

Baumeister, R. F., & Leary, M. R. (1995). The need to belong – desire for interpersonal attachments as a fundamental human motivation. *Psychological Bulletin*, 117, 497–529. https://doi.org/10.1037/0033-2909.117.3.497

Becker, J. C., & Swim, J. K. (2011). Seeing the unseen: Attention to daily encounters with sexism as way to reduce sexist beliefs. *Psychology of Women Quarterly*, 35, 227–242. https://doi.org/10.1177/0361684310397509

Bénabou, R., & Tirole, J. (2002). Self-confidence and personal motivation. *Quarterly Journal of Economics*, 117, 871–915. https://doi.org/10.1162/003355302760193913

Bourguignon, D., Seron, E., Yzerbyt, V., & Herman, G. (2006). Perceived group and personal discrimination: Differential effects on personal self-esteem. *European Journal of Social Psychology*, 36, 773–789. https://doi.org/10.1002/ejsp.326

Branscombe, N. R. (1998). Thinking about one's gender group's privileges or disadvantages: Consequences for well-being in women and men. *British Journal of Social Psychology*, 37, 167–184. https://doi.org/10.1111/j.2044-8309.1998.tb01163.x

Branscombe, N. R., & Ellemers, N. (1998). Coping with group-based discrimination: Individualistic versus group-level strategies. In J. K. Swim & C. Stangor (Eds.), *Prejudice: The target's perspective* (pp. 243–266). Academic Press. https://doi.org/10.1016/B978-012679130-3/50046-6

Branscombe, N. R., Schmitt, M. T., & Harvey, R. D. (1999). Perceiving pervasive discrimination among African Americans: Implications for group identification and well-being. *Journal of Personality and Social Psychology*, 77, 135–149. https://doi.org/10.1037/0022-3514.77.1.135

Cameron, J. E. (2001). Social identity, modern sexism, and perceptions of personal and group discrimination by women and men. *Sex Roles*, 45, 743–766. https://doi.org/10.1023/a:1015636318953

Crocker, J., & Major, B. (1989). Social stigma and self-esteem: The self-protective properties of stigma. *Psychological Review*, 96, 608–630. https://doi.org/10.1037/0033-295x.96.4.608

Dion, K. L. (2002). The social psychology of perceived prejudice and discrimination. *Canadian Psychology-Psychologie Canadienne*, 43, 1–10. https://doi.org/10.1037/h0086899

De Goede, M., Van Veelen, R., & Derks, B. (2016). *Financiële beloning van mannen en vrouwen in de wetenschap*. Retrieved from: https://dspace.library.uu.nl/handle/1874/347142

Eisenberger, N. I., Jarcho, J. M., Lieberman, M. D., & Naliboff, B. D. (2006). An experimental study of shared sensitivity to physical pain and social rejection. *Pain*, 126, 132–138. https://doi.org/10.1016/j.pain.2006.06.024

Ellemers, N., & Barreto, M. (2009). Collective action in modern times: How modern expressions of prejudice prevent collective action. *Journal of Social Issues*, 65, 749–768. https://doi.org/10.1111/j.1540-4560.2009.01621.x

European Commission (2019). *2019 report on equality between women and men*. Retrieved from: https://ec.europa.eu/info/sites/info/files/aid_development_cooperation_fundamental_rights/annual_report_ge_2019_en.pdf

Fisher, C. D. (1978). The effects of personal control, competence, and extrinsic reward systems on intrinsic motivation. *Organizational Behavior and Human Performance*, *21*, 273–288. https://doi.org/10.1016/0030-5073(78)90054-5

Foster, M. D. (2009). Perceiving pervasive discrimination over time: Implications for coping. *Psychology of Women Quarterly*, *33*, 172–182. https://doi.org/10.1111/%2Fj.1471-6402.2009.01487.x

Foster, M. D. (2015). Tweeting about sexism: The well-being benefits of a social media collective action. *British Journal of Social Psychology*, *54*, 629–647. https://doi.org/10.1111/bjso.12101

Foster, M. D., Jackson, L. C., Hartmann, R., & Woulfe, S. (2004). Minimizing the pervasiveness of women's personal experiences of gender discrimination. *Psychology of Women Quarterly*, *28*, 224–232. https://doi.org/10.1111/%2Fj.1471-6402.2004.00139.x

Foster, M. D., Matheson, K., & Poole, M. (1994). Responding to sexual discrimination: The effects of societal versus self-blame. *The Journal of Social Psychology*, *134*, 743–754. https://doi.org/10.1080/00224545.1994.9923009

Foster, M. D., Sloto, L., & Ruby, R. (2006). Responding to discrimination as a function of meritocracy beliefs and personal experiences: Testing the model of shattered assumptions. *Group Processes and Intergroup Relations*, *9*, 401–411. https://doi.org/10.1177/%2F1368430206064641

Fryberg, S. A., & Stephens, N. M. (2010). When the world is colorblind, American Indians are invisible: A diversity science approach. *Psychological Inquiry*, *21*, 115–119. https://doi.org/10.1080/1047840x.2010.483847

Gerber, J. P., Chang, S. H., & Reimel, H. (2017). Construct validity of Williams' ostracism needs threat scale. *Personality and Individual Differences*, *115*, 50–53. https://doi.org/10.1016/j.paid.2016.07.008

Gerbner, G. (1998). Cultivation analysis: An overview. *Mass Communication and Society*, *1*, 175–194. https://doi.org/10.1080/15205436.1998.9677855

Glick, P., & Fiske, S. T. (2011). Ambivalent sexism revisited. *Psychology of Women Quarterly*, *35*, 530–535. https://doi.org/10.1177/0361684311414832

Grau, S. L., & Zotos, Y. C. (2016). Gender stereotypes in advertising: A review of current research. *International Journal of Advertising*, *35*, 761–770. https://doi.org/10.1080/02650487.2016.1203556

Hartgerink, C. H. J., Van Beest, I., Wicherts, J. M., & Williams, K. D. (2015). The ordinal effects of ostracism: A meta-analysis of 120 cyberball studies. *Plos One*, *10*, e0127002. https://doi.org/10.1371/journal.pone.0127002

Hayes, A. F., & Preacher, K. J. (2014). Statistical mediation analysis with a multicategorical independent variable. *British Journal of Mathematical & Statistical Psychology*, *67*, 451–470. https://doi-org.ezproxy.leidenuniv.nl:2443/10.1111/bmsp.12028

Janoff-Bulman, R. (1992). *Shattered assumptions: Towards a new psychology of trauma*. Free Press.

Kaiser, C. R., Vick, S. B., & Major, B. (2006). Prejudice expectations moderate preconscious attention to cues that are threatening to social identity. *Psychological Science*, *17*, 332–338. https://doi.org/10.1111/j.1467-9280.2006.01707.x. https://doi.org/10.1111/j.1467-9280.2006.01707.x

Kerr, N. L., & Levine, J. M. (2008). The detection of social exclusion: Evolution and beyond. *Group Dynamics-Theory Research and Practice*, *12*, 39–52. https://doi.org/10.1037/1089-2699.12.1.39

Kobrynowicz, D., & Branscombe, N. R. (1997). Who considers themselves victims of discrimination? Individual difference predictors of perceived gender discrimination in women and men. *Psychology of Women Quarterly*, *21*, 347–363. https://doi.org/10.1111/j.1471-6402.1997.tb00118.x

Korpershoek, H., Canrinus, E. T., Fokkens-Bruinsma, M., & De Boer, H. (2019). The relationships between school belonging and students' motivational, social-emotional, behavioural, and academic outcomes in secondary education: A meta-analytic review. *Research Papers in Education*, *35*, 641–680. https://doi.org/10.1080/02671522.2019.1615116

Koudenburg, N., Postmes, T., & Gordijn, E. H. (2011). Disrupting the flow: How brief silences in group conversations affect social needs. *Journal of Experimental Social Psychology*, *47*, 512–515. https://doi.org/10.1016/j.jesp.2010.12.006

Leary, M. R. (2001). *Interpersonal rejection*. Oxford University Press.

Lelieveld, G. -J., Moor, B. G., Crone, E. A., Karremans, J. C., & Van Beest, I. (2013). A penny for your pain? The financial compensation of social pain after exclusion. *Social Psychological and Personality Science*, *4*, 206–214. https://doi.org/10.1177/1948550612446661

Leshner, C., Reysen, S., Plante, C. N., Chadborn, D., Roberts, S., & Gerbasi, K. (2018). "My group is discriminated against, but I'm not": Denial of personal discrimination in furry, brony, anime, and general interest fan groups. *The Phoenix Papers*, *4*, 130–142. https://doi.org/10.31234/osf.io/8xvzr

Lustenberger, D. E., & Jagacinski, C. M. (2010). Exploring the effects of ostracism on performance and intrinsic motivation. *Human Performance*, *23*, 283–304. https://doi.org/10.1080/08959285.2010.501046

Martela, F., & Steger, M. F. (2016). The three meanings of meaning in life: Distinguishing coherence, purpose, and significance. *Journal of Positive Psychology*, *11*, 531–545. https://doi.org/10.1080/17439760.2015.1137623

Napier, J. L., Suppes, A., & Bettinsoli, M. L. (2020). Denial of gender discrimination is associated with better subjective well-being among women: A system justification account. *European Journal of Social Psychology*, Advance online publication. *50*, 1191–1209. https://doi.org/10.1002/ejsp.2702

Petersen, T., & Morgan, L. A. (1995). Separate and unequal – Occupation establishment, sex segregation, and the gender wage gap. *American Journal of Sociology*, *101*, 329–365. https://doi.org/10.1086/230727

Pietri, E. S., Hennes, E. P., Dovidio, J. F., Brescoll, V. L., Bailey, A. H., Moss-Racusin, C. A., & Handelsman, J. (2019). Addressing unintended consequences of gender diversity interventions on women's sense of belonging in STEM. *Sex Roles*, *80*, 527–547. https://doi-org.ezproxy.leidenuniv.nl:2443/10.1007/s11199-018-0952-2

Pietri, E. S., Moss-Racusin, C. A., Dovidio, J. F., Guha, D., Roussos, G., Brescoll, V. L., & Handelsman, J. (2017). Using video to increase gender bias literacy toward women in science. *Psychology of Women Quarterly*, *41*, 175–196. https://doi.org/10.1177/0361684316674721

Ramati-Ziber, L., Shnabel, N., & Glick, P. (2020). The beauty myth: Prescriptive beauty norms for women reflect hierarchy-enhancing motivations leading to discriminatory employment practices. *Journal of Personality and Social Psychology*, *119*, 317–343. https://doi.org/10.1037/pspi0000209

Ruggiero, K. M., & Taylor, D. M. (1997). Why minority group members perceive or do not perceive the discrimination that confronts them: The role of self-esteem and perceived control. *Journal of Personality and Social Psychology*, *72*, 373–389. https://doi.org/10.1037/0022-3514.72.2.373

Schmitt, M. T., & Branscombe, N. R. (2002). The meaning and consequences of perceived discrimination in disadvantaged and privileged social groups. *European Review of Social Psychology*, *12*, 167–199. https://doi.org/10.1080/14792772143000058

Schmitt, M. T., Branscombe, N. R., Kobrynowicz, D., & Owen, S. (2002). Perceiving discrimination against one's gender group has different implications for well-being in women and men. *Personality and Social Psychology Bulletin*, *28*, 197–210. https://doi.org/10.1177/0146167202282006

Smart Richman, L., & Leary, M. R. (2009). Reactions to discrimination, stigmatization, ostracism, and other forms of interpersonal rejection: A multimotive model. *Psychological Review*, *116*, 365–383. https://psycnet.apa.org/doi/10.1037/a0015250

Stangor, C., & Sechrist, G. B. (1998). Conceptualizing the determinants of academic choice and task performance across social groups. In J. Swim, & C. Stangor (Eds.), *Prejudice: The target's perspective* (pp. 105–124). Academic Press. https://doi.org/10.1016/B978-012679130-3/50040-5

Stroebe, K., Barreto, M., & Ellemers, N. (2010a). Experiencing discrimination: How members of disadvantaged groups can be helped to cope with

discrimination. *Social Issues and Policy Review*, 4, 181–213. https://doi.org/10.1111/j.1751-2409.2010.01021.x

Stroebe, K., Barreto, M., & Ellemers, N. (2010b). When searching hurts: The role of information search in reactions to gender discrimination. *Sex Roles*, 62, 60–76. https://doi.org/10.1007/s11199-009-9700-y

Swim, J. K., Aikin, K. J., Hall, W. S., & Hunter, B. A. (1995). Sexism and racism: Old-fashioned and modern prejudices. *Journal of Personality and Social Psychology*, 68, 199–214. https://doi.org/10.1037/0022-3514.68.2.199

Swim, J. K., & Cohen, L. L. (1997). Overt, covert, and subtle sexism - A comparison between the attitudes toward women and modern sexism scales. *Psychology of Women Quarterly*, 21, 103–118. https://doi.org/10.1111/j.1471-6402.1997.tb00103.x

Szalacha, L., Erkut, S., Coll, C., Fields, J., Alarón, O., & Ceder, I. (2003). Perceived discrimination and resilience. In S. Luthar (Ed.), *Resilience and vulnerability: Adaptation in the context of childhood adversities* (pp. 414–435). Cambridge University Press. https://doi.org/10.1017/CBO9780511615788.019

Taylor, D. M., Ruggiero, K. M., & Louis, W. R. (1996). Personal/group discrimination discrepancy: Towards a two-factor explanation. *Canadian Journal of Behavioural Science-Revue Canadienne des Sciences du Comportement*, 28, 193–202. https://doi.org/10.1037/0008-400x.28.3.193

Van Beest, I., & Williams, K. D. (2006). When inclusion costs and ostracism pays, ostracism still hurts. *Journal of Personality and Social Psychology*, 91, 918–928. https://doi.org/10.1037/0022-3514.91.5.918

Van Laar, C., Derks, B., & Ellemers, N. (2013). Motivation for education and work in young Muslim women: The importance of value for ingroup domains. *Basic and Applied Psychology*, 35, 64–74. https://doi.org/10.1080/01973533.2012.746609

Van Laar, C., Derks, B., Ellemers, N., & Bleeker, D. (2010). Valuing social identity: Consequences for motivation and performance in low status groups. *Journal of Social Issues*, 66, 602–617. https://doi.org/10.1111/j.1540-4560.2010.01665.x

Van Zomeren, M., Postmes, T., & Spears, R. (2008a). Toward an integrative social identity model of collective action: A quantitative research synthesis of three socio-psychological perspectives. *Psychological Bulletin*, 134, 504–535. https://doi.org/10.1037/0033-2909.134.4.504

Van Zomeren, M., Spears, R., & Leach, C. W. (2008b). Exploring psychological mechanisms of collective action: Does relevance of group identity influence how people cope with collective disadvantage? *British Journal of Social Psychology*, 47, 353–372. https://doi.org/10.1348/014466607x231091

Vinnicombe, S., Atewologun, D., & Battista, V. (2019). *The female FTSE board report 2019: Moving beyond the numbers*. Retrieved from: https://www.iwforumuk.org/news/2019/07/12/female-ftse-board-report

Vroom, V. H. (1964). *Work and motivation*. Wiley.

Wanous, J. P., Keon, T. L., & Latack, J. C. (1983). Expectancy theory and occupational/organizational choices: A review and test. *Organizational Behavior and Human Performance*, 32, 66–86. https://doi.org/10.1016/0030-5073(83)90140-X

Wesselmann, E. D., Bagg, D., & Williams, K. D. (2009). "I feel your pain": The effects of observing ostracism on the ostracism detection system. *Journal of Experimental Social Psychology*, 45, 1308–1311. https://doi.org/10.1016/j.jesp.2009.08.003

Wesselmann, E. D., & Williams, K. D. (2017). Social life and social death: Inclusion, ostracism, and rejection in groups. *Group Processes & Intergroup Relations*, 20, 693–706. https://doi.org/10.1177/1368430217708861

Williams, K. D. (2007). Ostracism. *Annual Review of Psychology*, 58, 425–452. https://doi.org/10.1146/annurev.psych.58.110405.085641

Williams, K. D. (2009). Ostracism: A temporal need-threat model. *Advances in Experimental Social Psychology*, 41, 275–314. https://doi.org/10.1016/s0065-2601(08)00406-1

Williams, K. D., & Nida, S. A. (2017). *Ostracism, exclusion, and rejection*. Routledge.

Wirth, J. H., Sacco, D. F., Hugenberg, K., & Williams, K. D. (2010). Eye gaze as relational evaluation: Averted eye gaze leads to feelings of ostracism and relational devaluation. *Personality and Social Psychology Bulletin*, 36, 869–882. https://doi.org/10.1177/0146167210370032