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ORIGINAL ARTICLE

Embodied Discrimination: The Relation of Sexism and Distress to Women's Drinking and Smoking Behaviors

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Abstract Discrimination has been conceptualized as a stressor that may be more negative than generic stress because it is tied to valued and unchangeable social identities. As with other stressful events, the experience of sexism has been related to poorer mental health and some physical health outcomes. This study of 179 female college students (79% of whom were White) showed that the relation between perceived sexism and binge drinking and smoking was mediated by psychological distress. In addition, there was a direct relation between sexism and smoking for weight control. Given the large toll that tobacco and excessive alcohol use exact on the U.S. population, we suggest that policy makers aim to reduce discrimination as one method to improve overall health.

Keywords Sexism · Discrimination · Distress · Binge drinking · Smoking

The experience of mistreatment on the basis of one's sex, race, or other ascribed identities can be a distressing event with negative psychological and physiological sequelae (Bowen-Reid & Harrell, 2002; R. Clark, Anderson, V. R. Clark, & Williams, 1999; Guyll, Matthews, & Bromberger, 2001; Krieger, 1999; Landrine & Klonoff, 1996, 1997; Wallace, 1999; Whittle & Inhorn, 2001; Williams, Neighbors, & Jackson, 2003). Krieger (2005) argued that discrimination becomes embodied; that is, all living organisms "literally incorporate, biologically, the world in which we live, including our societal and ecological circumstances" (p. 351). From a psychological perspective, much of the research on the embodiment of discrimination is based on the general stress-and-coping literature (e.g., Lazarus & Folkman, 1984). According to the transactional model of stress, stress occurs when there is a "relationship between the person and the environment that is appraised by the person as taxing or exceeding his or her resources and endangering his or her well-being" (Lazarus & Folkman, 1984, p. 21). Such stress, in the form of both major life events and daily hassles, has been shown to be related to negative health outcomes (see Krieger, 1999 and Landrine & Klonoff, 1997, for reviews).

Discriminatory acts are often viewed as a particular category of stressor. For instance, Landrine and Klonoff (1997) argued that sexist events differ from generic stressors (e.g., moving or losing one's keys) in that they are inherently demeaning and personal, and thus they have a greater negative impact on physical and mental health than generic stressors do. Much of the emerging literature on the relation between discrimination and negative health outcomes posits that discrimination is a type of stressor that may increase health-damaging behaviors, tax individuals' abilities to engage in health sustaining behaviors, and compromise immune function, thus contributing to a variety of health problems (e.g., Landrine & Klonoff, 1997).

Clark et al. (1999) suggested that "the perception of an environmental stimulus as racist results in exaggerated psychological and physiological stress responses that are influenced by constitutional factors, sociodemographic factors, psychological and behavioral factors, and coping responses. Over time these stress responses are posited to influence health outcomes" (p. 806). For example, Clark et al.

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suggested that perceptions of racism may lead to feelings of anger in an individual, who may then use alcohol or other substances for emotion management. In this way, living in a racist environment is a stressor that becomes a potential risk factor for substance use. Research in this vein has linked perceived racism to cigarette smoking (Gurthrie, Young, Williams, Boyd, & Kintner, 2002; Kwate, Valdimarsdottir, Guevarra, & Bovbjerg, 2003; Landrine & Klonoff, 1996; Williams et al., 2003) and alcohol consumption (Kwate et al., 2003; Williams et al., 2003; Yen, Ragland, Greiner, & Fisher, 1999).

Most research on the health effects of discrimination has focused on the impact of racism on African Americans (Cain & Kington, 2003). Some literature shows parallel effects of heterosexist discrimination on psychological distress and substance use for lesbian, gay, and bisexual populations (e.g., Diaz, Ayala, Bein, Henne, & Marin, 2001; Rosario, Rotheram-Borus, & Reid, 1996; Szymanski, 2005). A very small body of research concerns the relation between sexism and women's health, and has focused largely on women's psychological distress. Studies that employ the Schedule of Sexist Events (SSE; Landrine & Klonoff, 1997), which assesses exposure to sexism in a variety of life domains, have shown that the more women report having experienced sexism, the more they report psychological distress, and that sexism contributes to distress above and beyond the effects of generic stressors (Landrine & Klonoff, 1997; Landrine, Klonoff, Gibbs, Manning, & Lund, 1995; Moradi & Subich, 2002, 2004).

This relation between perceived sexism and distress holds when sexism is operationalized in other ways, including as workplace sexual harassment and discrimination (Goldenhar, Swanson, Hurrell, Ruder, & Deddens, 1998; Gutek & Done, 2001; Pavalko, Mossakowski, & Hamilton, 2003). In addition, daily diary studies of sexist experiences, which correct for possible limitations of retrospective reporting inherent in the measures described previously, show that women who reported more sexist events in daily life also experienced more feelings of anger and depression (Swim, Hyers, Cohen, & Ferguson, 2001). Thus, across a variety of methods and samples, there appears to be a robust relation between reports of sexism in women's lives and greater psychological distress. In fact, some scholars have suggested that the very strong finding that women experience, or are diagnosed with, depression at least twice as often as men may be accounted for, at least in part, by women's greater exposure to sexist discrimination (Klonoff, Landrine, & Campbell, 2000; see also Swim et al., 2001).

Only a few researchers have examined the relation of sexism to health outcomes other than distress. This literature shows that perceived sexism is related to hypertension (Krieger, 1990), premenstrual symptoms (Landrine & Klonoff, 1997), functional limitations that may lead to physical disabilities (Pavalko et al., 2003), and physical symptoms including nausea and headaches (Goldenhar et al., 1998). Sexism has also been implicated in women's smoking behavior (Krieger, Rowley, Herman, Avery, & Phillips, 1993). Krieger et al.'s work, however, relied on theoretical arguments about the promotion of women's smoking in order to be thin and sexy rather than on empirical measures of sexism and their correlation with smoking. Thus, although there is mounting evidence that sexism is related to psychological distress, the relation of sexism to other aspects of health has been examined only rarely.

Coping with Sexism via Drinking and Smoking

It seems particularly important to examine whether sexism is related to health-damaging behaviors that may be used as mechanisms to cope with the distress engendered by discrimination. Excessive alcohol use and cigarette smoking are good examples of such behaviors. Both alcohol and tobacco use are popularly associated with stress reduction, although there is mixed empirical support for this relation, particularly when generic stressors are examined (see Bray, Fairbank, & Marsden, 1999, and Ng & Jeffery, 2003, for reviews).

In terms of sexist stress, MacDonald and Wright (2002) found that girls who experience powerlessness at school and at home were more likely to smoke. MacDonald and Wright attributed much of the girls' powerlessness to sexist practices that dictate hegemonic femininity and masculinity; thus, such smoking may be seen as one response to sexism in the environment. In addition, Jacobson (1986) argued that women smoke to cope with underpaid and undervalued "women's work" because they are afraid of losing control and expressing hostility in an unfeminine manner and because of the stress of working a second shift of domestic labor or toiling as homemakers with little support. Even though these researchers did not assess sexism directly, they demonstrated that smoking is tied to gender both in terms of the social power of women relative to men and with respect to social norms regarding women's behavior. This suggests that when women experience subordination because of their gender, they are more likely to smoke.

Although no researchers have examined the relation between perceived sexist events and substance use directly, the literature on childhood sexual assault and adult sexual victimization can offer some insight. Certainly sexual abuse can be conceptualized as an egregious form of sexism. Numerous studies have linked childhood sexual abuse with alcohol and nicotine use in adulthood (e.g., Figueroa-Moseley, Landrine, & Klonoff, 2004; Moran, Vuchinich, & Hall, 2004; Nelson et al., 2002; Thompson, Arias, Basile, & Desai, 2002), which suggests that certain very extreme forms of sexism may lead to numbing behaviors. Similarly,

a number of studies have demonstrated an association between sexual harassment and substance use in general (Davis & Wood, 1999) and alcohol use in particular (Rospenda, 2002). In another indirect measure of sexism, Bray et al. (1999) found that, although perceived stress at work or in the family was unrelated to use of alcohol or cigarettes for enlisted women, perceived stress specifically associated with being women in the military was associated with cigarette use. When we looked across the various studies reviewed above, it appeared that, similar to the effects of racist stress for People of Color, sexist stress in particular may leave women vulnerable to substance use. Thus, we expected that perceiving greater quantities of sexism in one's life would be related to increased quantity of alcohol and tobacco use among women, as people may use these substances to cope with the negative feelings engendered by discrimination.

It is possible that relations between sexism and binge drinking and smoking, if they exist, may be accounted for by psychological distress. There is a high correlation between depression and alcohol use and abuse, particularly among women, and depression appears to precede alcohol problems in these cases (Dixit & Crum, 2000). A number of large national and longitudinal studies support the contention that heavy drinking is a form of self-medication for depression (Dixit & Crum, 2000; C. J. Holahan, Moos, C. K. Holahan, Cronkite, & Randall, 2004; Weitzman, 2004). In particular, Holahan et al. demonstrated that depressed patients indicated that they engaged in more drinking to cope with their problems than did community controls and that the more negative events the participants reported, the more they indicated drinking to cope.

The relation between depression and cigarette smoking is robust, particularly among women (e.g., Pomerleau, Zucker, & Stewart, 2003). Large twin-based and longitudinal studies have produced equivocal results on the causal nature and direction of the relation between depression and smoking, which suggests that other (confounding) factors may cause both (Fergusson, Goodwin, & Horwood, 2003; Kendler et al., 1993). Despite this lack of clarity, many studies, with some limitations, suggest that smoking may be used as a form of self-medication for depression (Fergusson et al., 2003). Thus, we expected that the path from sexist events to both binge drinking and cigarette smoking would be mediated by psychological distress.

Coping with Sexism via Internalized Sexist Health Behaviors

Although some health-damaging behaviors may be enacted to cope with the distress engendered by discrimination, others may be the outward sign that the oppression in the environment has been internalized and that a discriminatory stance has been adopted by the individual toward herself (e.g., when women themselves believe thinness is one of their most important attributes). Pharr (1997) argued that victims of oppression live "in an environment of negative images (stereotypes) and messages, backed up by violence, victim-hating and blaming, all of which lead to low self-esteem and self-blame in the victim. The oppression thus becomes internalized" (p. 59). Kilbourne (1994) captured the idea of such internalization when she suggested that there is literally an internal voice raging at women within their minds, making critical comments such as "You are fat. You are ugly" (p. 393). Both Pharr and Kilbourne have stated that such internalized sexism, or self-hatred as a woman, takes an enormous toll on women's psychological and physical well-being. Scholars have argued that internalized sexism is implicated in the development of eating problems (Fredrickson & Roberts, 1997; Kilbourne; Pharr; Neath, 1997; Thompson, 1994). When internalized sexism is operationalized as internalization of sociocultural attitudes toward thinness, it is found to be related to symptoms of eating disorders (Moradi, Dirks, & Matteson, 2005). Following this line of thinking, we suggest that some health-damaging behaviors, particularly those associated with thinness or beauty, should be conceptualized as internalized sexist health behaviors.

Some women engage in cigarette smoking not just for its affective properties, or because of physiological addiction, but specifically to promote thinness (e.g., Zucker et al., 2001). We suggest that when women use thinness as a motive for smoking, they are engaging in bodily practices that symbolize internalized sexism. Women who are willing to engage in risky behaviors in order to be slim are—consciously or not—deciding that it is more important to fit idealized images of women's beauty than to promote their own health and longevity (Zucker et al.). We expected that there would be an association between higher levels of sexism in the environment (which can trigger internalized sexist messages within women) and internalized sexist health behavior. That is, the experience of sexist degradation and unfair treatment may reinforce messages about traditional feminine norms (including thinness) that could result in self-harming behaviors in order to be thin. Thus, we expected to find a direct relation between having experienced sexist events and smoking for weight control among women smokers.

We suggest that the pathway from sexist events to internalized sexist behaviors need not be mediated by psychological distress in the same way that smoking frequency and binge drinking are. As argued above, smoking and drinking can be conceptualized as numbing behaviors that help a woman to cope with distress; smoking for weight control, however, seems to help less with reducing sexism-related psychological distress (unless that distress was caused particularly by anti-fat attitudes or other objectification of women). Instead, it seems there could be a direct path between

experiencing sexism in one's environment and enacting sexism in one's life.

Hypotheses

Based on the literature on discrimination and health generally, we sought to replicate and expand specific predictions about the relation of sexism and women's health with the following hypotheses:

1) Higher frequency of past year sexism would be related to higher levels of psychological distress, binge drinking, and cigarette smoking;
2) Psychological distress would mediate the relation between past year sexism and binge drinking and smoking;
3) Higher frequency of sexism would be related to higher levels of internalized sexist behavior as evidenced by smoking for weight control.

Method

Participants

Initial participants were 192 female undergraduate students at George Washington University, a private university located in Washington, D.C. Of those, 179 provided valid data on all predictor and criterion variables and are included in the analyses below. Participants ranged in age from 18 to 24 years (M=19.42, SD=1.16). Seventy-six participants (43%) indicated their current year in school (i.e., the highest level of education they had obtained) was Freshman year of college, 72 participants (40%) were Sophomores, 20 (11%) were Juniors, 10 (6%) were Seniors, and one did not provide class information. The majority of participants identified themselves as European American (N=141, 79%). Fifteen participants (8%) identified as Asian, seven (4%) identified as Latina, three (2%) identified as Middle Eastern, two (1%) identified as African American, seven (4%) identified as being of mixed heritage or selected "other", and four were missing these data. The majority of participants identified as heterosexual (N=165, 92%); while 13 participants (7%) identified as lesbian, gay, bisexual, or queer (LGBQ); one participant did not provide this information.

Procedure

Participants were recruited through the psychology department's on-line research forum. All research studies at this university that involve undergraduate psychology students are posted on this web-site for participant recruitment purposes. After participants signed up for the study they completed a web-based questionnaire and were granted partial course credit.

Research has revealed various strengths and weaknesses in on-line data collection (e.g., Dillman, 2000). For example, an advantage of on-line data collection is that web-based questionnaires are cost-effective and efficient, eliminating the time required for implementation and the need for and errors associated with data entry (Dillman). A limitation of on-line data collection is that the researcher lacks control over the survey environment. In general, researchers have found that web-based questionnaires can be used effectively in collecting data for psychological study (e.g., Buchanan & Smith, 1999; Gosling, Vazire, Srivastava, & John, 2003; Knapp & Kirk, 2003; McCabe, 2004; McCabe, Boyd, Couper, Crawford, & D'Arcy, 2002), and may even be preferable to paper surveys when the questions are of a sensitive nature, such as questions regarding discriminatory experiences and smoking and drinking behaviors (Schonlau, Fricker, & Elliott, 2002).

Measures

Experiences with sexism We used the Schedule of Sexist Events (SSE; Landrine & Klonoff, 1997) to assess experiences with sexism. This scale consists of 20 items that assess four different aspects of sexist experiences, including sexist degradation and its consequences (e.g., "How many times have you been called a sexist name?"), sexist discrimination in distant relationships (e.g., "How many times have you been treated unfairly by neighbors because of your gender?"), sexism in close relationships (e.g., "How many times have you been treated unfairly by your family because you are a woman?"), and sexist discrimination in the workplace (e.g., "How many times have you been treated unfairly by your employers, bosses, and supervisors because of your gender?"). All items are rated on a 6-point scale [1=never happened, 2=once in a while (less than 10% of the time), 3=sometimes (10–25% of the time), 4=a lot (26–49%), 5=most of the time (50–70%), 6=almost all of the time (more than 70% of the time.)].

Participants rated each question for how frequently it had occurred in the past year. Although the full SSE includes additional assessments of lifetime occurrence and stressfulness of sexism, we chose to restrict analyses to past year sexism only. In previous work, Moradi and Subich (2002) demonstrated that, after controlling for key factors such as social desirability, age, and SES, recent sexism accounted for unique variance in distress. Furthermore, Matteson and Moradi (2005) argued that given Landrine et al.'s (1995) original conceptualization of recent sexism as a more proximal predictor of psychological distress, and given the high intercorrelations of the subscales, researchers may not

wish to use all the subscales simultaneously. Thus, a composite score was created for recent sexist events by summing the scores for all 20 items. In past research, Landrine and Klonoff (1997) found scores on the SSE-recent to be internally consistent (α=.90) and valid, positively correlated with other measures of stress such as the PERI-Life Events Scale (B. S. Dohrenwend, Krasnoff, Askenasy, & B. P. Dohrenwend, 1978). We found high internal consistency in our sample as well (α=.94).

Psychological distress There is evidence that emerging adulthood is a period with considerable general distress (Pals, 1999; Veroff & Feld, 1970; Zucker, Ostrove, & Stewart, 2002), which is relevant to our college sample. Therefore, psychological distress was assessed with the *personal distress* subscale of the expanded Feelings About Life Scale (Zucker et al., 2002). This subscale is intended to capture some of the more difficult elements of this life stage, including isolation, constraint, and negative affect. This subscale score consists of the mean rating of nine items (e.g., "depression and resentment or disillusionment") that are rated on a 3-point scale that ranges from 1 (*not at all descriptive of me*) to 3 (*very descriptive of me*). Alpha in the present study=.72. Zucker and colleagues found similar reliability (alpha coefficients ranging from .71 to .77) and argued for the discriminant validity of the measure, noting its correlation of −.57 with the Satisfaction with Life Scale (Diener, Emmons, Larsen, & Griffin, 1985).

Binge drinking Binge drinking was measured with Wechsler, Dowdall, Davenport, and Rimm's (1995) question for women: "Over the past 2 weeks how many times have you had four drinks or more in a row?" According to Wechsler and Nelson (2001), most major national databases of college students use a version of this measure and find that it predicts alcohol-related problems. For example, in one large national sample of US colleges, this measure was predictive of drinking-related problems such as becoming injured and engaging in unplanned sex (Wechsler, Davenport, Dowdall, Moeykens, & Castillo, 1994).

Nicotine use Nicotine use was measured as the quantity of cigarette smoking in the past month. Participants rated their use on a scale that ranges from 0 (*none*) to 10 (*38 or more cigarettes per day*) (Monitoring the Future project, personal communication, October 03, 2003; O'Malley, Johnston, & Bachman, 1999). This particular measure of nicotine use is widely used in survey research, and many studies have shown that self-reported nicotine use is nearly as effective a way to measure smoking behavior as physiological assessments of smoking (e.g., serum cotinine level) (Assaf, Parker, Lapane, McKenney, & Carleton, 2002; Dolcini, Adler, & Bauman, 2003; Vartiainen, Seppala, Lillsunde, & Puska, 2002).

Internalized sexist health behavior We used the *Weight Control Smoking Scale* (WCSS; Pomerleau et al., 1993) to measure internalized sexist health behavior. This scale consists of the sum of the ratings of three items (i.e., "I smoke to keep from gaining weight," "Smoking helps me control my appetite," and "I don't get so hungry when I smoke") rated on a 4-point scale that ranges from 0 (*not at all*) to 3 (*very much so*). Pomerleau et al. found scores on this scale to be reliable (α=.86) in a large sample of smokers and predictive of increased eating among a subset of the sample undergoing withdrawal from nicotine. In the present study α=.93. We suggest that high scores on this measure are a good indicator of internalized sexism because they represent motivation for smoking that is based on meeting society's unrealistic standards of beauty rather than smoking for enjoyment, relaxation, or other pleasure-based motives.

Results

Means and standard deviations for all variables are presented in Table 1. The average score on the SSE was lower than that reported by Klonoff et al. (2000) in their sample of undergraduate women. The average personal distress score was somewhat lower than that of the

Table 1 Intercorrelations and summary statistics for all variables.

	1	2	3	4	5	*M*	*SD*	α
1. SSE recent (20–102)	–					35.22	13.02	.94
2. Personal distress (1–2.89)	.38***	–				1.52	.36	.72
3. Binge drinking episodes-past two weeks (0–15)	.21**	.27***	–			2.08	2.38	–
4. Smoking quantity-past 30 days (0–10)	.20**	.26**	.35***	–		1.16	2.28	–
5. WCSS (0–8) (among smokers, *N*=62)	.33**	.07	−.06	.25*	–	1.15	1.86	.93

SSE=Schedule of Sexist Events; *WCSS*=Weight Control Smoking Scale.
* p<.05. ** p<.01. *** p<.001.

youngest group reported in Zucker et al. (2002), but this may be attributable to the differences in age/life stage or other regional factors. Only 63 women (33%) reported no binge drinking in the past 2 weeks. Twenty-eight women (15%) reported one episode, 37 women (20%) reported two episodes, and the remaining one-third of the sample reported between 3 and 15 episodes. These rates are markedly higher than those reported by Johnston, O'Malley, Bachman, and Schulenberg (2005), who found that 38% of female college students in their national study reported binge drinking in the past 2 weeks. However, Johnston and colleagues did not use the women's binge drinking standard (four or more drinks in a row) recommended by Wechsler et al. (1995). Instead they included the men's standard (five or more drinks in a row); this difference may partially explain our higher rates of binge drinking. Our data were much more in line with those of Vickers et al. (2004), who reported a binge drinking prevalence of 61% in their sample of Midwestern public university female students. In addition, Young, Morales, McCabe, Boyd, and D'Arcy (2005) reported that 53% of women binge drank in the past 2 weeks, almost one-half of them frequently, in another sample of Midwestern students. Thus, it seems possible that drinking rates vary dramatically by university. In our sample 117 women (65%) were never smokers, 31 women (17%) had smoked in the past month but were not daily smokers, and 31 women (17%) were daily smokers. These rates are slightly higher than those reported by Johnston et al. The rate of smoking for weight control was slightly lower than that in another sample of female students (Zucker et al., 2001).

A preliminary examination of stem-and-leaf plots revealed that both binge drinking and cigarette smoking were positively skewed; this was confirmed by significant Shapiro–Wilk statistics. To adjust for this non-normality, we performed a square root transformation for each variable. These transformed variables were included in all analyses below.

Intercorrelations of all items are presented in Table 1. As predicted in Hypothesis 1, having experienced more sexism in the past year was related to higher levels of personal distress, greater frequency of binge drinking in the past 2 weeks, and smoking more cigarettes in the past month.

We followed the steps outlined by Baron and Kenny (1986) to examine whether personal distress mediated the relation between sexism and the two health-damaging behaviors: binge drinking and smoking quantity. To demonstrate mediation, one must show that: (a) the independent variable is a significant predictor of the dependent variable in the absence of the mediator, (b) the independent variable is a significant predictor of the mediator; (c) the mediator is a significant predictor of the dependent variable after controlling for the effects of the independent variable, and (d) the strength of the relation between the independent and dependent variable decreases after the mediator is added into the model. The relations among sexism, personal distress, and binge drinking met these criteria (see Fig. 1). Specifically, in separate bivariate regressions, sexism was significantly positively related to binge drinking, R^2=.04, p<.01, and to personal distress, R^2=.14, p<.001. When we regressed binge drinking on sexism and personal distress simultaneously, distress was a significant predictor of binge drinking, and the standardized regression coefficient for sexism was no longer significant, total equation R^2=.09, p<.01. We used the SPSS macro developed by Preacher and Hayes (2004) to test for the significance of this test of mediation. The Sobel test was significant, z=2.51, p<.05, which offers further evidence that the relation of sexism to binge drinking is mediated by personal distress.

Similarly, the relations among sexism, personal distress, and cigarette smoking quantity met the criteria for mediation (see Fig. 2). Specifically, in separate bivariate regressions, sexism was significantly related to smoking, R^2=.04, p<.01, and to personal distress, R^2=.14, p<.001. When we regressed smoking on sexism and personal distress simultaneously, distress was a significant predictor of smoking, and the standardized regression coefficient for sexism was no longer significant, total equation R^2=.08, p<.01. The Sobel test for this set of relations was significant, z=2.40, p<.05, which offers further evidence that the relation of sexism to smoking is mediated by personal distress.

Despite the evidence above for distress as a mediator of sexism and binge drinking and smoking, the data are cross-sectional, and thus other causal directions are plausible. Specifically, it is possible that sexism could relate to psychological distress via substance use. Instead of drinking or smoking to reduce negative affect, women could engage in heavy substance use in order to cope with sexism directly; such substance use could in turn result in negative feelings. Alternatively, women who experience distress may engage in substance use behaviors which might then lead to more sexist experiences if others perceive them as sexually available, as

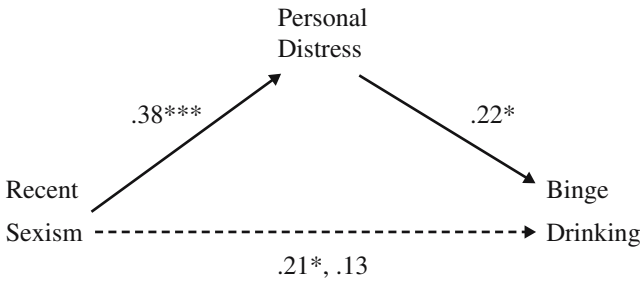

Fig. 1 The relation between past year perceived sexism and binge drinking is mediated by personal distress. In the path from sexism to binge drinking, the *first number* reflects the standardized regression coefficient when only those two variables are in the model; the *second* reflects the standardized regression coefficient with the inclusion of an indirect path through distress.

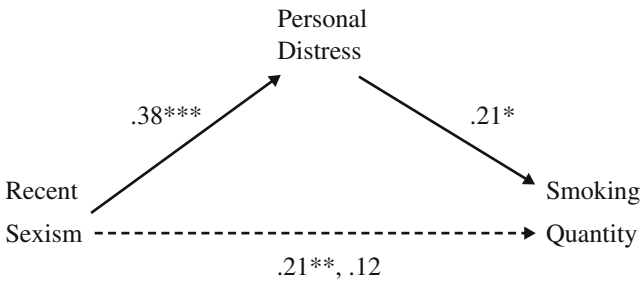

Fig. 2 The relation between past year perceived sexism and smoking quantity is mediated by personal distress. In the path from sexism to smoking quantity, the *first number* reflects the standardized regression coefficient when only those two variables are in the model; the *second* reflects the standardized regression coefficient with the inclusion of an indirect path through distress.

unfeminine, or as incapacitated and unable to prevent unwanted sexual advances. We tested these two alternate models. There was no evidence that binge drinking or smoking mediated the relation between sexism and distress; in fact, the relation between sexism and distress increased in the presence of these mediators. When binge drinking and smoking were included as mediators of the distress–sexism relation, that relation remained unchanged. Thus we are confident that these alternate models were not supported.

We also examined the relation between sexism and smoking for weight control among women who had smoked in the past month. As Table 1 shows, these variables are significantly, positively correlated. We did not expect this relation to be mediated by distress, and our expectation was confirmed by the non-significant relation between distress and smoking for weight control.

Discussion

As expected, and consistent with others in the field (e.g., Landrine & Klonoff, 1997; Moradi & Subich, 2003), we found in our sample of college women that the experience of sexist events is related to personal psychological distress. It is not surprising that perceiving that one has been discriminated against on the basis of sex would be distressing. Biological sex is an ascribed identity—one that women cannot easily "exit." Given the permanence of this status and the continuing widespread existence of sexist policies and practices (e.g., the wage gap in salaries, the high rates of sexual violence on college campuses), it seems reasonable that those women who notice sexism—in the absence of organized social change movements—would have lower levels of mental health.

In addition, researchers have long noted that women are diagnosed with depression more often than men, but have failed to account completely for the causes of this gender difference (e.g., Sparks, 2002). Some scholars have noted that sexist discrimination in general (Klonoff et al., 2000), and sexual victimization in particular (Cutler & Nolen-Hoeksema, 1991; Wise, Zierler, Krieger, & Harlow, 2001), may in part be responsible. Although our study is correlational and we cannot assess causality, we agree with the assertion that sexist experiences broadly construed may be important predictors of gender differences in psychological distress.

We have added to the literature on the embodied health correlates of sexist discrimination by demonstrating that sexism is related to alcohol and tobacco use. We believe that this is the first evidence that sexism is related to these physical health behaviors. Alcohol and nicotine use can be conceptualized as direct coping behaviors. Although the empirical literature on the actual stress-reducing uses of those substances is mixed (Bray et al., 1999; Ng & Jeffery, 2003), our data are consistent with the few studies that have demonstrated increased substance use in situations that were not generically stressful, but were stressful in some way that can be connected to sexism or to women's low status (Bray et al., 1999; Jacobson, 1986; MacDonald & Wright, 2002). Our data also parallel some of the findings that racism is a stressor (e.g., Gurthrie et al., 2002; Williams et al., 2003). Perhaps, as Landrine and Klonoff (1996) suggested, stress that is tied to an identity status has a more deleterious effect on an individual's self-concept and related health behaviors than does generic stress, which is not perceived as inherently personal and demeaning.

Our mediational models offer preliminary support for the idea that, parallel to the mechanism Clark et al. (1999) offered for racism's health effects, the women in our sample smoked and drank excessively to cope with the psychological distress triggered by experiences of sexism in their lives. We found these relations despite the fact that rates of sexism and distress were lower in our sample than in others, which suggests that even low levels of negative experiences may be significant in women's lives. In future research it would be useful to assess motives for engaging in health-damaging behaviors and to relate these motives directly to sexist experiences and associated distress.

It is particularly noteworthy that sexism was related to a health behavior that is tied to internalizing sexism—smoking for weight control. It is well established that women in US society are exposed to a multitude of extremely thin models and are under pressure to achieve a similar look (e.g., Kilbourne, 1994). Furthermore, women who deviate from beauty standards by being overweight have lower levels of achievement in academic, economic, and relationship domains (Crawford & Unger, 2000). Thus it is not surprising that many women internalize these standards and strive to meet them through diet, exercise, and more extreme means. Smoking for weight control, in particular, is an example of a woman's willingness to engage in a behavior that will

harm her overall health in the long term in order to be thin in the short term (Zucker et al., 2001). Willingness to take such a risk with one's health to be thin is an example of internalizing society's sexist standards and applying them to one's own body. It was noteworthy, though not predicted a priori, that the more women reported smoking for weight control, the more cigarettes they had consumed in the past month. This suggests a particularly vicious element of this aspect of internalized sexist behavior.

Both cigarette smoking and excessive alcohol consumption are health-damaging behaviors that exact a large psychological, physical, and financial toll on the US public each year (Centers for Disease Control and Prevention, 2004; National Institute on Drug Abuse, 2002). The data from the current study suggest that one way to reduce problematic substance use may be to reduce sources of stressful discrimination, particularly sexism, in women's lives. Thus, arguments against sexist policies and in favor of affirmative action may be strengthened by noting the potential harm-reducing effects these policies may have.

There are a number of limitations to the current study. First, there are some weaknesses associated with the measures used in this study. The SSE measures perceived sexism, not "actual" sexism. Matteson and Moradi (2005) suggested that it is difficult (if not impossible) to distinguish between perceptions and "reality" in this case because attributions to sexism are prone to individual differences. One possible way to supplement individual women's ratings of sexism would be to collect data on levels of sexist attitudes from a number of key people in a participant's life (e.g., parents, partner, close friends). In that way, researchers would have an indicator of potential exposure to sexism that could be examined, along with the target participant's own ratings, in relation to a woman's health behaviors. In addition, the instructions for the SSE ask participants to recall sexist events that occurred in the last year. Longitudinal data collection of sexist experiences via daily diary methodology would help address problems with recall associated with the current methodology. With regard to the dependent variables, both binge drinking and smoking were measured with single items. Although these items are widely used, multi-dimensional inventories and/or physiological measurements may provide a more accurate assessment in future studies.

Second, because the data were collected at one time point, we cannot examine the temporal ordering of events and causality. It is possible that women who experience higher levels of personal distress are more likely to attribute mistreatment to sexism than to other factors; in such a case distress could not logically mediate the relation between sexism and binge drinking or smoking. In addition, just as Dixit and Crum (2000) suggested that unmeasured factors (e.g., personality traits, genetics, environmental experiences) could drive the relation between depression and alcohol use in women, so could unmeasured factors affect the more extended relations examined here. Longitudinal studies are necessary to begin to assess issues of causality in this domain.

Third, we recruited a sample of college students who were relatively young and privileged (in terms of race and education). The stressful effects of sexism may be compounded by exposure to other forms of discrimination (e.g., racism, classism, ageism). It would be fruitful to examine the intersection of multiple identities, experiences with discrimination, and health behaviors in a more diverse sample. Some scholars have suggested that women's exposure to sexism increases once they enter the workforce fulltime (e.g., Lips, 2005); thus, we might expect that the current sample will encounter more and different forms of sexism in the coming years. It will be important to assess experiences of sexism in an older adult sample, both to examine whether conditions improve or worsen and to assess whether the connections between sexism and health behaviors are similar for women at different ages and life stages.

Although the relations between perceived sexism and health behaviors were modest in the present study, the cumulative effects of sexism on women's health should not be underestimated. Given that exposure to sexism is related to a number of health-damaging behaviors, as well as to overall mental and physical health deficits, we should be very concerned indeed. In the decades since the second wave of the women's movement reached its peak, some people have suggested that we are living in a post-feminist era or that the major gains for women's rights have been won (see Zucker, 2004, for an overview). Although there has been much improvement, sexism clearly still exists and is correlated with behaviors that in turn cause major health problems. This should be a rallying point for both feminists and public health officials alike.

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