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Review article

Discrimination and drinking: A systematic review of the evidence

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ABSTRACT

Although it is widely accepted that discrimination is associated with heavy and hazardous drinking, particularly within stress and coping frameworks, there has been no comprehensive review of the evidence. In response, we conducted a systematic review of the English language peer-reviewed literature to summarize studies of discrimination and alcohol-related outcomes, broadly defined. Searching six online data bases, we identified 938 non-duplicative titles published between 1980 and 2015, of which 97 met all inclusion criteria for our review and reported quantitative tests of associations between discrimination and alcohol use. We extracted key study characteristics and assessed quality based on reported methodological details. Papers generally supported a positive association; however, the quantity and quality of evidence varied considerably. The largest number of studies was of racial/ethnic discrimination among African Americans in the United States, followed by sexual orientation and gender discrimination. Studies of racial/ethnic discrimination were notable for their frequent use of complex modeling (i.e., mediation, moderation) but focused nearly exclusively on interpersonal discrimination. In contrast, studies of sexual orientation discrimination (i.e., heterosexism, homophobia) examined both internalized and interpersonal aspects; however, the literature largely relied on global tests of association using cross-sectional data. Some populations (e.g., Native Americans, Asian and Pacific Islanders) and types of discrimination (e.g., systemic/structural racism; ageism) received scant attention. This review extends our knowledge of a key social determinant of health through alcohol use. We identified gaps in the evidence base and suggest directions for future research related to discrimination and alcohol misuse.

1. Background

From the late 1980s onward, studies began reporting an association between racism and poorer cardiovascular health among African Americans in the United States (Armstead et al., 1989; Krieger and Sidney, 1996; McNeilly et al., 1995). Over subsequent decades, researchers across multiple disciplines extended this initial observation, finding associations between discrimination and negative health outcomes in a variety of populations. With recent, growing recognition of health inequities, discrimination has been identified as a social mechanism responsible, at least in part, for observed health disparities among minority groups (Commission on the Social Determinants of Health, 2008; Office of Disease Prevention and Health Promotion, ND).

Several theories suggest that discrimination should be associated with alcohol use. For example, the Transactional Model of Stress and Coping (Lazarus and Folkman, 1984) has been widely used as an organizing heuristic in studies of heavy and hazardous drinking. Although the Transactional Model does not identify specific stressors, it may be self-evident that discrimination would be experienced as a stressor. Extending the basic framework, Minority Stress Models (R. Clark et al., 1999; Harrell, 2000; Meyer, 2003), which posit that members of minority groups will experience excess stress related to their minority status (i.e., above and beyond what is otherwise expected), have identified discrimination as a specific risk exposure. Most recently, the Social Resistance Framework (Factor et al., 2011) suggests that minorities may engage in health compromising behaviors, such as substance use, as conscious or unconscious acts of resistance against a majority group. Specifically, the social forces responsible for majority-minority distinctions, including experiences of discrimination, may trigger alienation or lack of attachment to the dominant culture, which in turn could lead to behaviors in opposition to

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dominant norms. In each of these theoretical frameworks, discrimination may be associated with mal-adaptive coping responses, including heavy drinking.

As studies of discrimination and health outcomes have accumulated, a number of previous reviews have attempted to make sense of the literature. In 1999, Krieger (1999) published the first review, arguing for the importance of an epidemiological analysis of discrimination, outlining key methods, and summarizing the early evidence. Among 20 papers dealing predominantly with racial/ethnic discrimination, a wide variety of physical and mental health outcomes were studied; however, alcohol use was absent. Following closely in 2000, Williams and Williams-Morris (2000) reviewed 15 studies of mental health outcomes in community samples, devoting considerable attention to conceptualizing how discrimination might operate and proposing future areas of research. The papers included in that review reported associations between racial/ethnic discrimination and psychological distress, depression, and anxiety. Yet again, no study examined alcohol use. Shortly thereafter, Williams et al. (2003) conducted a subsequent review that included physical, mental, and behavioral health outcomes. Of 86 studies examined, only two examined alcohol use, both finding a positive association with discrimination; however, important details were lacking. For example, hazardous drinking was not distinguished from any alcohol use, and the review excluded studies done with college students, a priority population for alcohol research. That same year, two additional reviews appeared, both focused on the relationship between racial/ethnic discrimination and cardiovascular outcomes (Brondolo et al., 2003; Wyatt et al., 2003). These papers reflected the state of US health disparities research, which was driven by growing recognition of stark inequities among African Americans. Consistent with other reviews, both papers devoted considerable attention to potential mechanisms through which discrimination might exert an effect on health; however, the narrow focus on cardiovascular disease did little to extend substance abuse research.

The first systematic review appeared in 2006, in which Paradies (2006) continued the focus on racial/ethnic discrimination as the risk exposure but extended the sample to include studies with a variety of health outcomes. Of 138 studies reviewed, 14 addressed alcohol use, presenting mixed findings. Eight found positive associations but six reported no association. Despite a more rigorous approach than previous reviews, important details were lacking. Notably, hazardous drinking was not distinguished from any alcohol use. Subsequently, Pascoe and Richman (2009) conducted a systematic review and meta-analysis of 134 papers. Among the review's strengths, it included multiple forms of discrimination and proposed a conceptual model of the relationship between discrimination and mental and physical health outcomes. Alcohol was included as a search term, however, it was collapsed with tobacco use and illicit drug use to model the latent construct of health damaging coping behaviors, thus obscuring the relationship between discrimination and drinking. Most recently, Paradies et al. (2015) reviewed 333 papers, representing the most ambitious summary to date. They conducted a meta-analysis of racial ethnic discrimination on general, physical, and mental health outcomes. Although the study described in detail the inverse relationship between racism and health, it did not include substance use as a potential outcome. Thus, it did little to advance our understanding of the relationship between discrimination and alcohol-related outcomes.

Although a positive association with alcohol use is widely accepted, particularly within stress and coping frameworks, there have been few attempts to assess its support. Previous reviews have combined drinking with other substance use or neglected to examine it at all. Thus, the degree to which our received wisdom corresponds to empirical findings remains unknown. Compounding the challenge, multiple drinking outcomes have been studied, ranging from any alcohol consumption to various types of hazardous drinking, such as binge episodes (defined in the United States as four/five or more drinks on a single occasion for women and men, respectively), drinking-related problems (e.g., failure to fulfill work, family, or social obligations), and symptoms of dependence (e.g., craving, tolerance, delirium tremens). Seeking a rigorous assessment of the evidence, we conducted a systematic review to summarize empirical findings about discrimination and alcohol-related outcomes, broadly defined. Additionally, we assessed characteristics of studies, such as the types of discrimination studied, measures used, sampling methods, and analytic strategies, among others. In effect, this review sought to provide both a summary of the evidence (i.e., what is known) and an overview of methods (i.e., how that knowledge was produced).

2. Methods

We utilized standard procedures for systematic reviews (Egger et al., 2001; Glasziou, 2001), following the PRISMA guidelines (http://www.prisma-statement.org/Default.aspx) and registering this project in the PROSPERO database (www.crd.york.ac.uk/prospero). As it did not constitute human subjects research, ethics board approval was not required. We searched six online databases (e.g., PubMed) using combinations of controlled vocabulary (e.g., MeSH terms such as "alcohol-related disorders") and free text to identify potentially relevant papers (search details in Appendix A). Following Jones' typology (2000), we accepted studies of discrimination at multiple social-ecological levels, such as systemic/structural, interpersonal, and internalized discrimination. To be included in this review, papers must have reported quantitative findings in a peer-reviewed journal between January 1, 1980 and December 31, 2015. Qualitative and non-empirical works, such as commentaries or book reviews, were excluded. Likewise, manuscripts that had not undergone peer review, such as dissertations or conference abstracts, were not included. After removing duplicate citations, we screened titles and abstracts, excluding papers if they did not report findings from human research, if discrimination was not a risk exposure, if there was no alcohol outcome, if the paper did not test the relationship between discrimination and an alcohol-related outcome, or if the paper was not written in English. Next, the full text of eligible papers was retrieved for a second, detailed review to confirm eligibility. Screenings were completed by the first author and a research assistant. Periodic reliability checks of sub-sets of papers that included the second author showed almost perfect agreement among screeners (all $\kappa > 0.90$). Any discrepancy about inclusion of papers was resolved through discussion of each case. We reviewed bibliographies and conducted several targeted searches by investigator name to identify other potential papers. Of 938 non-duplicative titles, 398 were retrieved for full text review, of which 97 met all inclusion criteria and were included in this analysis (Fig. 1).

Key study characteristics were identified using a data extraction form and entered into a spreadsheet for analysis by the first author and a research assistant. If papers included sequential or hierarchical models, we took findings from the final, fully adjusted model. We derived a quality index from six characteristics (study design, sampling strategy, use of established measures for the exposure and outcome, appropriate analytic procedures, and attention to threats to internal validity) categorizing papers as low, moderately good, or high quality. We analyzed the extracted data by discrimination type, looking for patterns and themes across studies using matrix displays, a common data reduction technique in qualitative research (Miles and Huberman, 1994). Because of the great heterogeneity of study designs, populations, and measures, we did not perform a meta-analysis.