Expanding Our Understanding of the Psychosocial Work Environment:

A Compendium of Measures of Discrimination, Harassment and Work-Family Issues

Developed for the NORA Special Populations at Risk Team by the Center for Women & Work, University of Massachusetts Lowell

Meg A. Bond
Alketa Kalaja
Pia Markkanen
Dianne Cazeca
Sivan Daniel
Lana Tsurikova
Laura Punnett

NIOSH Editor
Sherry Baron

Technical Support
Fang Gong
Donna Pfirman

DEPARTMENT OF HEALTH AND HUMAN SERVICES
Centers for Disease Control and Prevention
National Institute for Occupational Safety and Health

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Foreword

In 1996, NIOSH created the National Occupational Research Agenda to advance occupational safety and health research for the nation. This agenda encompassed 21 priority research areas, including Special Populations at Risk. This priority area was created in recognition of the fact that the nation's increasingly diverse workforce contains many women, older workers, and racial and ethnic minorities. Disparities in the burden of disease, disability, and death are experienced by these groups, due in part to their disproportionate employment in high hazard industries and to certain social, cultural and political factors.

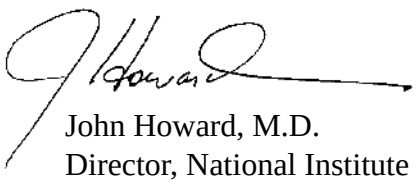
In order to advance the national research agenda, NIOSH partnered with the National Institutes of Health to fund pioneering new research to better characterize the role of environmental and occupational exposures in the development of health disparities for these populations.

The NIOSH grantee under this research initiative was the University of Massachusetts Lowell. Some of the important risk factors explored as part of this research were the role of workplace discrimination, harassment and work-family issues in the occurrence of occupational injuries and illnesses. While there is an increasing body of scientific evidence demonstrating the contribution of psychosocial stressors such as discrimination on health, these researchers found that the body of prior occupational safety and health research exploring them was limited. Occupational health studies that examine these factors will contribute to a better understanding of their role in causing or exacerbating health problems.

However, in the past, the limited availability and lack of awareness of appropriate methods of measurement of these potential workplace stressors has been a barrier. This document was developed by the investigators from the University of Massachusetts Lowell at the request of the Special Populations at Risk Team to fill that gap by disseminating to the broader occupational safety and health community a concise and accessible compendium of measures used by health researchers to assess the following domains:

- racism and racial/ethnic prejudice
- sexism and sexual harassment
- gender and racial discrimination
- work-family integration and balance
- support for diversity in the workplace/workforce

The issues, terms, and concepts addressed in the peer-reviewed studies that are cited and summarized in this document have profound emotional impact for people, individually and collectively. The nature of the document is such that the authors have to use sensitive terms and concepts frankly, so that the measures are meaningful and the document can fulfill its purpose as a research tool. While there is need for expanded research into the potential role of these stressors in the occurrence of occupational injuries and illnesses, many of the scales included in this compendium may be incomplete or inadequately tested in diverse work environments. It is NIOSH's hope that making these existing measures available will assist occupational safety and health researchers in the design of studies that further contribute to our understanding of their role and encourage further development of improved methods for occupational safety and health research to address this important gap. With improved understanding of the role of these stressors, occupational safety and health practitioners can also more successfully design and measure the impact of workplace intervention programs.



John Howard, M.D.
Director, National Institute for
Occupational Safety and Health
Centers for Disease Control and Prevention

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Introduction

Expanding our Understanding of the Psychosocial Work Environment

Meg A. Bond and Laura Punnett

There is broad recognition that the psychosocial environment at work can affect physical and mental health as well as organizational outcomes such as work performance and effectiveness. There is a substantial literature linking "job strain" and cardiovascular disease (Karasek & Theorell, 1990; Schnall, 1994; Belkic, Landsbergis, Schnall & Baker, 2004). The economic costs of job strain and job stress in general are related to absenteeism, turnover, and lost productivity, and, although difficult to estimate, could be as high as several hundred billion dollars per year (Karasek & Theorell, 1990). Thus for social as well as economic reasons, research aimed at understanding the conditions of work that contribute to physical and mental health concerns is well worth an intensified focus.

The psychosocial domains studied by occupational health researchers typically include psychological job demands, job control (decision latitude), social support, and intrinsic and extrinsic rewards (e.g., Karasek & Theorell, 1990; Siegrist, 1996). These factors, reflecting the organization of the work process, are often used to define the "psychosocial work environment." However, health and well-being are also affected by other features of the psychosocial work climate, such as unfair or inequitable treatment of employees, sexual harassment, and discrimination. Differential treatment, whether in terms of gender, age, race/ethnicity, sexual orientation, or disabilities, is increasingly recognized as a chronic stressor that can affect both psychological and physical health (Clark, Anderson, Clark, & Williams, 1999; Kessler, Mickelson, & Williams, 1999; Schulz, Israel, Williams, Parker, Becker, Becker, & James, 2000; Krieger, 2003). Experiences of discrimination can operate either in a cumulative way or in combination with each other (Swim, Hyers, Cohen & Ferguson, 2001; Essed, 1991). Furthermore, they are inherently likely to be distributed differentially by socioeconomic position (Kessler, Mickelson, & Williams, 1999).

Although it appears that discrimination experienced by members of target social groups has detrimental consequences, conceptual approaches and strength of findings vary, methodological problems with the literature have been noted (Meyer, 2003; Piotrkowski, 1997; Williams, Neighbors, & Jackson, 2003), and the evidence regarding *long-term* health outcomes is limited to date. Direct links to "upstream" organizational practices (e.g., workplace policies, programs, climate) have rarely been made empirically. Relevant literature is explored in more detail below, to summarize both our knowledge to date and the gaps in the empirical research, as well as to motivate inclusion of these work environment features in future studies. One barrier to such research is the lack of awareness of appropriate measurement instruments (Meyer, 2003). Thus the primary purpose of the current project has been to identify measures of gender and race-related dynamics in the workplace and to make them more easily accessible. Following the brief introduction and literature summary, this document catalogues 46 measures of biases, discrimination, and harassment that may be useful to occupational health researchers who wish to explore these issues further.

Discrimination, Harassment, Workplace Biases, and Health

Race-Related Dynamics

Racism occurs on many levels, from the interpersonal to the institutional. It has been defined as "an ideology of superiority that categorizes and ranks various groups, negative attitudes and beliefs about outgroups, and differential treatment of outgroups by individuals and societal institutions" (Williams, Yu, Jackson & Anderson, 1997, p. 338). At work, it can manifest in stereotypes and pigeonholing attitudes and assumptions, blocked opportunities, and limited access to resources needed to do one's work well. In addition, researchers are increasingly recognizing a more subtle form of racism, termed *aversive racism* (Dovidio & Gaertner 1996; Gaertner & Dovidio 1986), which involves underlying racially biased attitudes and behaviors of people who may not even be aware that their actions might be discriminatory. Aversive racism describes the scenario where people do not directly express more negative feelings about minorities or have lower expectations of any specific racial or ethnic group members; rather, they express fewer positive reactions to minorities and tend to favor majority group members (e.g., white men continue to receive more positive evaluations when all else is considered equal, Messick & Mackie 1989).

An increasing number of scholars are investigating the impact of racism, specifically in terms of its association with psychological well-being (Harrell, 1997; Klonoff, Landrine & Ullman, 1999; Neighbors, Jackson, Broman, & Thompson, 1996; Utsey & Ponterotto, 1996) and physical health (Jackson, Brown, Williams, Torres, Sellers, & Brown, 1996; Krieger, 2003; Krieger & Sidney, 1996; Rowley, 1994; Williams et al., 1997). The experience of racism is often both cumulative (i.e., daily and repeated) and additive across a variety of settings, such as the workplace, academia, and public places (Essed, 1991). Because of this pervasiveness and continuity over time, racism has been recognized as a chronic stressor (Utsey & Ponterotto, 1996; Green, 1995; Landrine & Klonoff, 1996). Increasingly scholars have identified racism as accounting directly for some of the differences in psychological and physical health between whites and people of color (Clark, et al., 1999; Landrine & Klonoff, 1996; Krieger, Rowley, Herman, Avery, & Phillips, 1993; Nazroo, 2003; Williams, et al., 1997; Utsey, Chae, Brown, & Kelly, 2002). For example, a thirteen-year panel study conducted by Jackson and colleagues (1996) demonstrated that experiences and perceptions of racial discrimination affected both the physical and mental health of African Americans. Krieger and Sidney (1996) showed that experiences of racial discrimination, as well as acceptance of unfair treatment as inevitable, were associated with higher levels of blood pressure in African American participants. However, much of this literature is cross-sectional, meaning that interpretation of the findings should proceed with the caveat that the directionality of the associations remains ambiguous.

The literature is still rather sparse on the specific health effects of racial discrimination in the work environment. Mays, Coleman, & Jackson (1996) examined the impact of perceived race-based discrimination on labor force participation and job-related stress among African American women. They found that perceived racism in the labor market affected advancement, skill development, and interpersonal relationships with co-workers. Similarly, Hughes and Dodge (1997) found that both interpersonal and institutional racism at work, especially interpersonal prejudice, were significant predictors of job satisfaction.

People of color are often relegated to jobs with less control, high stress, and low influence (Blau, Ferber & Winkler, 2002). In addition, the racial make-up of the workplace can play a role, and some studies have explored how employees' racial background is associated with perceptions and experiences of the work climate. White employees often display a sort of blindness to racial dynamics and racist events, while people of color are more keenly aware of inequities and report higher levels of racial discrimination than whites (Watts & Carter, 1991; Weber & Higginbotham, 1997). Thus, it is perhaps not surprising that racial bias has been more frequently reported by people of color employed in predominantly white work settings (Hughes & Dodge, 1997).

Gender Dynamics

Like racial dynamics, gender-related stereotypes, prejudice, and discrimination operate as distinct sources of occupational stress (Korabik, McDonald, & Rosin, 1993; Swanson, 2000). Interpersonal manifestations range from sexist and racist jokes, demeaning comments, and harassment to team dynamics of avoidance and exclusion as well as lower expectations about women's competence and performance (Gutek, 2001; Swim et al., 2001; Pogrebin & Poole, 1997). Women's experience of sexist treatment – e.g., discrimination, negative sex stereotyping, isolation, and sexual objectification -- has been associated with mental heath concerns such as depression, anxiety, somatization and low self esteem (Klonoff, Landrine & Campbell, 2000; Landrine, Klonoff, Gibbs, Manning, & Lund, 1995; Swim et al., 2001) as well as with lower levels of physical health (including high blood pressure, ulcers, tension, and sleeplessness) (Nelson, Quick, & Hitt, 1989; Goldenhar, Swanson, Hurrell, Ruder & Deddens, 1998; Klonoff, Landrine & Campbell, 2000; Pavalko, 2003). Women who reported gender discrimination in their workplaces were found to have lower levels of job satisfaction and organizational commitment, as well as more negative relations with co-workers and supervisors, than those who did not experience gender discrimination (Murrell, Olson, & Hanson-Frieze, 1995). With regard to work outcomes, perceived sexism is associated with lower expectations and career aspirations and consequent choices for women (Evans & Herr, 1991). Furthermore, there is evidence that the negative impact of these gender-related stressors on health and well-being is above and beyond the effects of general job stressors such as overload (Swanson, 2000).

A related workplace stressor that affects the lives of many women employees is sexual harassment. The effects of sexual harassment in terms of work and health outcomes are similar to those of other forms of gender discrimination that occur in the workplace. Considerable research has found that sexual harassment is associated with negative psychological outcomes for women such as anxiety, depression, alienation, lower self-esteem, tension, and nervousness (Barling et al, 1996; Lenhart, 1996; Parker & Griffin, 2002), and negative somatic outcomes such as gastrointestinal disturbances, nausea, headaches, and insomnia (Gutek & Koss, 1993; Dansky & Kilpatrick, 1997; Goldenhar et al., 1998; Gutek & Done, 2001; Hesson-McInnis & Fitzgerald, 1997; Piotrkowski 1998). The experience of sexual harassment in the workplace has also been positively correlated with smoking and alcohol abuse (Richman, et al., 1999). In terms of work outcomes, sexual harassment was associated with loss of work motivation and higher levels of distraction that ultimately led to poor work performance, absenteeism, lateness, and turnover (Barling et al., 1996; Hanisch, 1996; Schneider, Swan, & Fitzgerald, 1997). Glomb and colleagues (1997) investigated the impact of indirect exposure to sexual harassment – i.e., being aware of negative treatment of women at work – and found that even harassment

directed at someone else was associated with lower job satisfaction and increased work and job withdrawal, as well as with symptoms of psychological distress and somatization.

Sexual harassment is problematic not only in its own right but also because it seems to coexist with (stem from and/or result in) other gendered manifestations of negative work climates (Bond, 2003; Shrier, 1996; Gutek & Koss, 1993; Bingham & Scherer, 1993). For example, sexual harassment is more likely to occur in work climates characterized by high levels of sexist stereotypes and attitudes, and "everyday sexism" increases concerns about future provocation (Fitzgerald & Omerod, 1993; Murrell, Olsen & Hanson-Frieze, 1995; Pogrebin & Poole, 1997; Swim et al, 2001). Sexual harassment has been found to be more common in "sexualized" work environments and contexts where sex between colleagues is tolerated or condoned (Bond, 1995; Gutek, 2001). Fitzgerald and associates found that perceptions of an organization's responsiveness to employee concerns about harassment affected the frequency of sexual harassment (Fitzgerald, Drasgow, Hulin, Gelfand & Magley, 1997; Hesson-McInnis & Fitzgerald, 1997).

Gendered patterns also show up in the considerable occupational segregation that occurs across occupations and within general occupational categories (Blau et al., 2002; Wooton, 1997). *De facto* occupational segregation is not necessarily related to overt gender or race discrimination in a given workplace. Nevertheless, it is of great interest as a potential predictor of health status because "men's jobs" and "women's jobs" often have qualitatively and quantitatively different occupational exposures, whether physical work load, psychosocial strain, or even chemical exposures (Hall, 1992; Messing, 1995, 1997; Punnett & Herbert, 2000; Quinn, Woskie, & Rosenberg, 2000). Psychological job demands, decision latitude ("job control"), social support, and rewards affect both men and women, but they are unevenly distributed in the working population. For instance, jobs in which women predominate generally have lower decision latitude, on average, than men's jobs (Josephson et al., 1999; Karasek & Theorell, 1990; Matthews, Hertzman, Ostry, & Power, 1998; Nordander et al., 1999; Vermeulen & Mustard, 2000). There is evidence that the "job gender context" of work, conceptualized as the gender ratio of the workgroup and the gender traditionality of the work role, is related to the likelihood of experiencing sexual harassment, which, in turn, is subsequently associated with lower job satisfaction and psychological distress (Fitzgerald, Drasgow, Hulin, Gelfand & Maglev, 1997). In light of these findings, an intriguing observation is the report of increased sick leave for all causes, by both men and women, in jobs with high gender segregation – with the most problematic outcomes being for females in male-dominated groups (Alexanderson, Leijon, Akerlind, Rydh, & Bjurulk, 1994). It remains to be clarified whether gender segregation acts as a stressor *per se*, possibly as a source of psychosocial strain. Alternatively, it could be a determinant of, confounded by, or a proxy for gender differences in physical working conditions or other exposures, including harassment and discrimination.

Work-Life Integration and Health

Over the last couple of decades, there has been a dramatic increase in the labor force participation of married women with young children (Cohen & Bianchi, 1999; Hayghe & Bianchi, 1994) and in the percentage of married couples that are dual-earner families (Blau et al, 2002). The changing nature of the workforce has meant that an increasing portion of the workforce is facing the burden of combining work and family responsibilities, and many feel the stress.

Research has indicated that about 40% of employed parents experience some level of conflict between their job demands and the demands of family life (Galinsky, Bond & Friedman, 1993). Although women in heterosexual marriages still take on the majority of the family-related responsibilities even when both spouses work (Blau, 1998), men's average weekly hours of housework have increased over the last 25 years (Blau, 1998; Bianchi, Milkie, Sayer & Robinson, 2000), and findings generally indicate that both mothers and fathers are affected by work-family conflict (Barnett & Brennan, 1995). For instance, Burden and Googins (1987) found that 36% of the fathers and 37% of the mothers in dual-wage families reported "a lot of stress" in balancing work and family responsibilities. Additionally, as more and more people's work schedules diverge from the traditional one of five 8-hour shifts per week, issues such as involuntary overtime and the spillover of work demands into unpaid, supposedly leisure time are intensifying conflict between work and family or personal life. Nevertheless, since women continue to have primary responsibility for childcare arrangements in many families, irregular schedules and involuntary overtime would be likely to cause particular problems for women workers (Büssing, 1996).

Health outcomes of work-family conflict can be physical, such as fatigue, sleep deprivation, or increased susceptibility to infections (Ironson, 1992; Frone, Russell & Barnes, 1996; Frone & Russell, 1995; Frone & Russell, 1997; Goldsmith, 1989), or psychological, such as burnout, stress, and frustration (Wethington & Kessler, 1989; Warp, 1990; Repetti, Matthews & Waldron, 1989; Klitzman, House, Izrael, & Mero, 1990; Barnett, Marshall, Raudenbush & Brennan, 1993; Dekker & Schaufeli, 1995). Researchers now distinguish between work-to-family conflict (WFC when work demands interfere with or take a toll on the family) and family-to-work conflict (FWC when family demands interfere with work) and have paid particular attention to the impact of work-to-family interference (e.g., Frone et al., 1992; Kossek & Ozeki, 1998; Netemeyer et al., 1996; Thomas & Ganster, 1995). Allen, Herst, Bruck, and Sutton (2000) provided a comprehensive review of the consequences associated with work interference with family; they categorized potential outcomes as work-related, non-work-related, and stress-related. In terms of work-related outcomes, most studies find that job satisfaction goes down as WFC goes up (see also review by Kossek & Ozeki, 1998). Intention to turn over was the work-related issue most clearly related to WFC. Relationships have also been reported between WFC and job burnout, work alienation, job tension, and organizational commitment. In terms of non-work-related outcomes, life satisfaction, marital adjustment and satisfaction, and family satisfaction all appear to be negatively affected by work interference with family. WFC was also related to a variety of stress-related outcomes such as general mental health, feeling of self-worth, depression, anxiety and irritability, and life strain. Physical problems associated with WFC include poor appetite, elevated blood pressure, fatigue, nervous tension, and several overall measures of physical health and energy.

Sexual Orientation

Discrimination and harassment based on sexual orientation, although not directly connected to gender, are related to beliefs about gender roles in society. As part of a larger, multi-site, longitudinal health study, Krieger and Sidney (1997) found that among those participants who indicated that they had had sex with a same-sex partner, 33% of the black women, 39% of the black men, 55% of the white women, and 56% of the white men reported experiencing discrimination based on sexual orientation. They found some health-related consequences

correlated with this discrimination; however, it was difficult to isolate the effects of sexual orientation-related discrimination since the vast majority of black participants had also experienced racial discrimination and over 80% of the women had also experienced gender discrimination. Research on specifically physical health effects of discrimination based on sexual orientation are somewhat mixed and seem to vary by race and educational status (Huebner, 2002; Krieger & Sidney, 1997); some severe mental health effects have been highly related to experiences of discrimination. Huebner (2002) found that, in a racially diverse sample of 361 gay men, perceived discrimination was associated with depressive symptoms, including suicidal ideation. In a sample of gay and bisexual Latino men, Diaz, Ayala, & Bein (2001) found that discrimination was a strong predictor of psychological symptoms such as suicidal ideation, anxiety, and depression. More specific to the workplace, Waldo (1999) found that people who were "out" at work experienced more discrimination based on sexual orientation and experienced more physical symptoms. Interestingly, he also found that those who chose to hide their sexual orientation experienced what he called "indirect discriminatory events" (e.g., feeling that it is necessary to "act straight") and that experiencing this indirect discrimination was also associated with more symptoms.

Interacting Influences

While this document focuses primarily on issues of race and gender (and to some extent on sexual orientation and work-family issues), it is critical to recognize that these factors interact with one another and are also connected to other dimensions of diversity such as social class and disability. For example, women of color experience the negative effects of both gender- and race-related discrimination in the workplace (Evans & Herr, 1991; Piotrkowski 1998; Xu & Leffler, 1996). Moradi's (2002) study of African American women points to substantial overlap in the impacts of racist and sexist treatment on mental health, and her work supports the notion that these dimensions of discrimination are intertwined and not merely additive.

It is particularly important to acknowledge how race and gender dynamics can overlay social class (Krieger, 2003; Nazroo, 2003). A growing social epidemiology literature addresses the inverse relationship between socioeconomic position and health. The study of social disparities in health calls for the development and application of theoretical frameworks that can support data collection and analysis of the impact of social organization upon population health (Krieger, 1995, 1999; Levins & Lopez 1999).

While there is substantial agreement on the strength and direction of the relationship between socioeconomic position and health outcomes, explanations for this relationship enjoy much less unanimity of opinion. Marmot (1999), for one, has argued for the central role of low control over one's life circumstances, especially in the workplace. Paid employment is a major structural link between education and income: education is a major determinant of people's jobs, which determine their salaries as well as at least some part of the economic assets they accumulate. Employment is also a likely important mediator of socioeconomic disparities in health, because working conditions vary markedly across socioeconomic level (Borg & Kristensen, 2000). Moreover, the workplace is a prime locus for the experience of social status and of discrimination.

For example, women and people of color are not typically found in equal proportions across all levels of (job) status within an institution. Thus they may experience adverse situations at work that are actually more a function of their position within the hierarchy than directly a result of being female or minority. Traditional socioeconomic indices of occupation (Marmot 1989), education (Feldman, Makve, Kleinman, 1989) and household income (Duleep, 1986) have all been linked to general health outcomes, with lower-status individuals and families faring worse than those who are relatively advantaged. To the extent that racism and discrimination are also factors in hiring decisions, wage determination, and promotions, research showing the negative health effects of wage discrimination is also relevant here (Darity, 2003). These elements of social disadvantage rooted in race and gender issues are clearly relevant to health. These multiple dimensions undoubtedly interact; in some studies racial differences in physical and mental health are less pronounced when adjusted for income and education, although perceived racial discrimination is still a contributing factor to health status (Williams et al., 1997; Kwate, Valdimarsdottir, Guevarra, & Bovbjerg, 2003).

Measures Described in This Compendium

In sum, past research across several disciplines has revealed that gender- and race-related factors such as values, biases, harassment, discrimination, and lack of support for work-family balance can affect physical and mental health. However, these features of the work environment have rarely been included simultaneously with the study of other workplace conditions. Thus, knowledge about correlations among them is still very limited, as is knowledge about potential confounding and interactions.

One barrier to increased inclusion of these dimensions in occupational health research is the limited availability and lack of awareness of appropriate measurement instruments (Meyer, 2003). Much of the research on discrimination has been conducted by investigators in the fields of psychology and sociology, yet lack of communication among disciplines means that occupational health researchers often have little knowledge of relevant instruments developed in other fields. The primary purpose of this document is to consolidate information about relevant survey instruments that assess workplace race and gender dynamics and to bring them to the attention of occupational health scientists.

Another challenge to incorporating diversity issues into occupational health research is that differential treatment manifests itself at multiple levels, as discussed above. Measurement issues and approaches are clearly different for the varied manifestations of bias and discrimination (e.g., individual workers' beliefs versus organizational practices), and thus a wide range of strategies is required to assess relevant dimensions. For example, since workplace conditions and practices are influenced by shared beliefs about who and what is valued by an organization, both workers' attitudes and organizational values related to gender and race/ethnicity can be helpful for capturing relevant diversity dynamics. Additionally, systemic forms of bias (e.g., as evidenced by sexual and racial segregation, different job assignments, differential rates of promotion, and lower organizational responsiveness to complaints) are also important to assess (Browne, 1997; Lott, 1995; Weber & Higginbotham, 1997).

Introduction

This compendium includes measures at multiple levels. However, instruments that assess perceptions and personal descriptions of experiences from individual workers are far more common than more systemic indicators. In reviewing these measures, it is also apparent that samples used to assess psychometric strengths are often not diverse in terms of race, ethnicity, gender or sexual orientation, thus limiting our knowledge of their usefulness with exactly the populations we wish to reach. Thus while a major goal is to emphasize the availability of useful measures, it is also hoped that this collection will demonstrate a need for a wider range and variety of approaches and will stimulate the development of new instruments for assessing employer attitudes and workplace practices and policies.

The criteria for inclusion of measures in this compendium were 1) topical relevance, 2) at least some evidence of psychometric strengths, and 3) use in at least one published study. Our search for candidate measures was done using a snowball approach following up on leads identified through studies on related topics and soliciting suggestions from researchers associated with relevant organizations. We searched the formal social science research literature for articles about measures assessing the following domains: 1) racism and racial/ethnic prejudice, 2) sexism and sexual harassment, 3) gender and racial discrimination, 4) work-family integration and balance, and 5) support for diversity in the workplace/workforce. We reexamined the studies included in our literature review and followed leads to the measures used. We included some measures that we were aware of from our own past research on related topics. In addition, we put out an open call for colleagues to nominate measures by posting the request on lists for the Society for the Psychological Study of Social Issues and the Society for Community Research and Action. We also consulted with the Centers for Disease Control and Prevention's Measure of Racism Working Group to identify any gaps.

We were able to identify 46 measures in the literature that met our criteria. There were two additional dilemmas that shaped some of our choices about which measures to include. First, we found that a very common approach to measuring experiences of discrimination is to ask a straightforward question, essentially, "Did you experience discrimination or not?" In some cases, a single question is used; in others, a few variations are included (e.g., asking "experienced it ever?" then "experienced it in this job?" Participants may also be asked to indicate whether they have been discriminated against in each of several contexts). We have included a few such measures, primarily those that had undergone some psychometric analysis; however, we chose not to include all the variations we saw adapted by individual researchers. Second, many reasonable discrimination and harassment measures have not been developed or ever used in work settings. Some of these are very specific to other settings (most typically academic settings). We did not completely restrict our search or our entries to workplace-specific measures, in part because this would have produced a very short list of instruments. On the contrary, we have included a number of scales that were developed and used in other types of settings but could be adapted for use in occupational health research.

Each entry includes a general description of the measure, sample items, and information about various psychometric strengths and limitations. We first summarized the information we were able to locate in the literature and then sent our draft entries to the scale's authors, requesting their assistance in both checking the entry and providing additional information. We received comments back from about half of the authors. We have included the primary references for

each scale and, when available, information about how to obtain it. We have tried to include enough detail to help researchers make informed choices, even though we do not make explicit recommendations for use of one measure over another. Actual copies of measures are not included.

In collecting these measures, it became apparent that there are three main types: 1) ratings of attitudes or beliefs about race, gender, work-life, or sexual orientation (could be general or one's own beliefs or observations) 2) assessments of one's own experiences of bias, harassment, or discrimination (including frequency, severity, and stressfulness), and 3) ratings of the climate or general practices within an organization or group. In this compendium, each measure was assessed by validity and reliability, which are two important standards to consider in constructing and evaluation survey instruments. We assessed three types of validity for each measure: content, construct, and concurrent validity. The next page presents definitions of validity and reliability applied in this document. Following the list of definitions is a section on "Summary of Measures" indicating which of these three types of assessments are incorporated within each measure. We have also noted here which scales include items specifically designed for workplace studies.

Validity and Reliability: Definitions Applied in This Document

Content Validity

- The extent to which the scale has appropriate coverage of the subject matter – i.e., does it adequately sample the universe of possible items?
- Includes actions taken to ensure adequate sampling of possible items for the desired content area.
- Face validity and subjective evaluation by expert judges about appropriateness.
- Common approaches include use of focus groups, interviews, or pilot surveys to gather items based on participants' experiences.

Construct Validity

- The extent to which the scale is a good measure of the theoretical constructs that underlie it – i.e., does the scale measure what it says it measures?
- Does it have the relationship to other variables (including demographics) that theories would predict it to have?
- Underlying constructs are often assessed through factor analysis, principal components analysis, etc.

Concurrent Validity

- The relationship between the scale and an external criterion, ideally something that is already accepted as a gold standard for the same phenomenon. Sometimes also referred to as "criterion validity."
- Most often expressed as the correlation between scale scores and scores on a similar already-validated measure of the same phenomenon.

Reliability

- Internal reliability is most commonly expressed as Cronbach's alpha coefficient and sometimes with split-sample reliability
- Test-retest reliability can be assessed using raw percentage of concordant replies or another statistical measure of agreement.