

Measuring Workplace Discrimination among Sexual and Gender Minority Workers

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Objectives: As inequities in health for sexual and gender minority (SGM; eg, lesbian, gay, bisexual, and transgender [LGBT]) populations become increasingly well documented, it is important to investigate causes of inequities to inform intervention work. One area of importance is in employment discrimination, as there are limited or no protections against sexual orientation and gender identity discrimination in approximately half of US states. We sought to assess the internal consistency and validity of a brief, adapted scale to measure SGM workplace discrimination. **Methods:** We modified an existing workplace age discrimination scale to assess SGM workplace discrimination. We assessed internal consistency, criterion validity, construct validity, and conducted a confirmatory factor analysis. Data came from a convenience sample of employed, SGM-identified adults (N = 124) attending a pride festival in Durham, NC, in September 2016. **Results:** The 5-item scale was significantly associated with poorer health, greater internalized homonegativity, reporting workplace bullying, SGM isolation, gender expression discrimination, and having filed a formal complaint of workplace discrimination. The scale had a single factor solution. **Conclusions:** This 5-item scale may be useful in efficiently documenting and addressing SGM workplace discrimination; it assesses material forms of discrimination (eg, pay and job tasks assigned) against SGM employees.

Key words: sexual and gender minorities; employment issues; social discrimination; social determinants of health; workplace discrimination; LGBT issues

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Health promotion efforts to address health inequities include documenting a problem, understanding its origins, and developing interventions.¹ For sexual and gender minority (SGM; eg, lesbian, gay, bisexual, and transgender [LGBT]) populations, inequities are well documented, but there are critical gaps in understanding the etiology of inequities and how best to intervene.^{2,3} Health inequities literature has documented the role of psychosocial stressors from stigma and the role of access to resources in the production of health inequities.⁴ For SGM health inequities, a well-developed literature has explored the role of psychosocial stressors,^{5,6} documenting the impacts of internalized homonegativity, proximal stressors (eg, family rejection), and distal stress-

ors (eg, institutionalized discrimination). However, some causes of psychosocial stress for SGM people simultaneously result in decreased access to resources. For example, in addition to adding to psychosocial stress, employment discrimination can influence hiring, firing, raises, promotions, and experiences gained from task assignment.⁷

As SGM people can be fired for their sexual orientation in 26 states and their gender identity in 27 states,⁸ employment discrimination remains an important concern for SGM wellbeing. Employment discrimination has been linked with mental and physical employee health, and job stress mediates this relationship.^{7,9} Studies experimentally manipulating resumes to signal sexual orientation and gender identity show evidence of discrimina-

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tion against sexual and gender minorities, particularly in states with few or no legal protections.¹⁰⁻¹² There is growing evidence that SGM populations may have lower incomes and be at greater risk of economic marginalization.¹³ Additionally, SGM adults appear to live, on average, in neighborhoods with fewer resources.¹⁴

One challenge to understanding the role of employment discrimination is in measuring discrimination at work. Previous studies of SGM workplace discrimination have reported little information about the reliability and validity of measures used.¹⁵ According to some reviews,¹⁵⁻¹⁷ 3 commonly used scales of workplace discrimination are: (1) the Heterosexist Harassment, Rejection, and Discrimination Scale (HHRDS) with a 4-item workplace discrimination subscale that includes campus and educational discrimination,¹⁸ (2) the Workplace Heterosexist Experiences Questionnaire (WHEQ) with 22 items,⁹ and (3) an inventory of workplace climate: LGBT Climate Inventory (LGBTCL) with 20 items.¹⁹ These have been extended for use with gender minority adults.²⁰ In addition, the Microaggressions Experiences at Work Scale (MEWS) exhibits desirable psychometric properties and contains 27 items.²¹ These scales have provided important information to the field,¹⁵ but work environments and SGM acceptance have changed considerably over the last decades.⁸ Additionally, although long scales have desirable measurement properties from a classical test theory perspective, they may not be feasible to implement in public health surveillance or most phone surveys due to space, time, and cost limitations.²²

Therefore, we aimed to adapt an existing validated measure of workplace discrimination that could be utilized to improve understanding of the role of workplace discrimination among SGM populations in brief surveys where (1) space for items is limited, (2) efficiency is necessary, and (3) multiple aspects of workplace discrimination are represented.^{7,15} Such a scale would be expected to correlate negatively with health. It also would be expected to correlate positively with SGM-related harassment at work and with a prior measure of discrimination at work adapted from the Experiences of Discrimination scale.^{23,24} Finally, it would be expected to correlate positively with SGM-related isolation, gender expression discrimination,

and having filed a formal complaint about SGM-related discrimination at work. The current study reports on the psychometric testing of a scale for measuring workplace discrimination among SGM workers. The scale has an unspecified present time-frame to capture discrimination across the lifespan. Specifically, 5 items from the Nordic Age Discrimination Scale (NADS)²⁵ measuring age discrimination in the workplace were modified to include key work tasks and/or areas associated with SGM discrimination. We provide a preliminary assessment of the internal consistency and validity of the 5-item scale.

METHODS

Data Collection and Sample

We administered a survey utilizing an iPad tablet (using the Qualtrics offline survey application) at the 2016 North Carolina (NC) Pride Festival in Durham, NC. A description of the study has been published previously²⁶ and the data and survey codebook are available.²⁷ Briefly, the research team used a university-branded tent as a registered exhibitor at the festival. Eleven trained undergraduate and graduate students asked passing festival-goers to participate in the study as they walked by the research tent. We trained data collectors to ask all adults who walked by to participate to minimize selection bias. To begin the anonymous survey, we provided participants consent information using the iPad tablet. The first question displayed on the iPad asked participants to consent by selecting the “continue” icon to take the survey or to refuse by returning the iPad to a research assistant. Participants were offered a \$5 gift card to a regional grocery store chain. The survey took approximately 10 minutes to complete. Participants were required to be at least 18 years of age and speak English. Of the participants who completed the survey ($N = 311$), we excluded straight cisgender participants ($N = 86$) and participants who did not report being currently employed for wages ($N = 101$), leaving an analytic sample of 124 employed SGM adults.

The sample size ($N = 124$) was considered sufficient for assessing validity of the 5-item scale, as item-to-response ratio recommendations range from 1 to 4²⁸ to 1 to 10.²⁹ In both cases, the current study sample size exceeds the recommendations. In addition, the item intercorrelations, which are pre-

sented in the results section, are primarily strong and support the use of the data analyses employed in the study.

Instrument

We adapted a validated workplace discrimination survey that addressed multiple domains of workplace discrimination. Specifically, we used 5 items from the Nordic Age Discrimination scale, which is designed to measure age discrimination in the workplace.²⁵ The psychometric properties of the Nordic Age Discrimination scale have been found to be satisfactory for both validity and reliability measures (Cronbach alpha ranged from 0.82 and 0.87). For the 5 items used in the current study, we revised the language to reflect sexual orientation and gender identity, updated language for clarity in North American English, and assessed face validity with prior measures. Two items specific to change processes and development appraisals on the Nordic Age Discrimination scale were modified into one item measuring work opportunities in the current study. Therefore, the SGM workplace discrimination scale (Table 2) measures the following workplace aspects: (1) promotion, (2) training opportunities, (3) favoritism, (4) raises, and (5) work expectations. Again, to achieve efficiency in time- and space-conscious surveys, each item's response options were dichotomous: Yes or No. Specifically, we aimed to create a simple and reliable scale that could be administered in environments that are increasingly saturated by survey research. This was done to improve response rates and shorten survey times, all while adhering to standards for producing quality data with sound psychometric properties.³⁰

Internal Consistency/Validity

We used Kuder-Richardson-20 (KR-20) to determine internal consistency, guided by the recommendation that self-report instruments should have an alpha coefficient of at least 0.60.³¹ To measure criterion validity, we assessed correlations between the SGM workplace discrimination scale and measures of workplace bullying. Workplace bullying was measured by a single item, consistent with validity checks in the Furunes and Mykletun study,²⁵ which stated: "Have you been subjected to bullying or harassment at the workplace during the

last 6 months?" Response options were "yes/no," and as in the original, age discrimination validation study, a positive correlation was expected between the SGM workplace discrimination items and the workplace bullying item.

To measure construct validity, we assessed the relationship between the SGM workplace discrimination scale and several expected correlates. We hypothesized participants reporting greater SGM workplace discrimination to have poorer, self-reported general health; therefore, we anticipated a negative association. Furthermore, we postulated that several items measuring psychosocial problems, including internalized homonegativity,³² feelings of personal discrimination,²³ isolation,³³ distress associated with gender expression,³³ and having filed a formal complaint²³ would have a positive correlation with SGM workplace discrimination.

General health was measured with an item from the Behavioral Risk Factor Surveillance System (BRFSS) requesting that respondents rate general health as "excellent, very good, good, fair, or poor." For the identity-related measure of internalized homonegativity, we used 3 previously validated items:³² (1) "If it were possible, I would choose to be straight," (2) "I wish I were heterosexual," and (3) "I believe it is unfair that I am attracted to people of the same sex." Items were on a 5-point scale of agreement from 1 (strongly disagree) to 5 (strongly agree), and prior validity and reliability analyses support scores produced from using the subscale.³² In our data, the scale had strong internal consistency ($\alpha = 0.90$). To measure perceptions of personal discrimination, an item to assess discrimination used by Krieger et al^{23,24} was slightly reworded for the current SGM sample, and stated: "How often do you experience discrimination at work for being lesbian, gay, bisexual or transgender?" The ordinal-scaled response options were "never, once, 2-3 times, or 4 or more times." This item has an unspecified timeframe to capture all occurrences of perceived discrimination. We hypothesized this item to have a positive correlation with the SGM workplace discrimination scale.

Measures of SGM minority distress, specifically measuring isolation and gender expression ($\alpha = .89$ in our data), were assessed using the Daily Heterosexist Experiences Questionnaire (DHEQ).³³ We used a single item from the isolation subscale:

Table 1
Participant Characteristics in an
Experiment Conducted at an SGM
Community Festival in Durham, NC,
2016, N = 124

Characteristics	Frequency (%) ^a
Gender Identity	
Male	65 (52.4%)
Female	50 (40.3%)
Transgender	2 (1.6%)
Other	6 (4.8%)
Sexual Orientation	
Gay or Lesbian	94 (75.8%)
Bisexual	29 (23.4%)
Race/Ethnicity	
White	106 (85.5%)
Black or African American	14 (11.3%)
Hispanic/Latino	6 (4.8%)
American Indian or Alaskan Native	5 (4.0%)
Asian	3 (2.4%)
Other	3 (2.4%)
Age	Mean (SD)
Years	34.85 (12.23)
Educational Attainment	
Less than high school	1 (0.8%)
High school or equivalent	8 (6.5%)
Some college or technical school	23 (18.5%)
Associate degree	10 (8.1%)
Baccalaureate degree	37 (29.8%)
Graduate or professional degree	44 (35.5%)

Note.
Frequencies do not sum due to sporadic missing values.
a: Totals sum to over 100% due to the selection of multiple options.

how “having very few people [one] can talk to about being LGBT” has impacted the respondent (eg, “How much has this problem distressed or bothered you during the past 12 months?”). Response options included “not applicable to me; it happened, and it bothered me [NOT AT ALL, A LITTLE BIT, MODERATELY, QUITE A BIT, EXTREMELY].”³³ The gender expression subscale of the DHEQ supplied the same response options and question prompt as the isolation scale, with

the following items: “feeling invisible in the LGBT community because of your gender expression; being harassed in public because of your gender expression; being harassed in bathrooms because of your gender expression; feeling like you don’t fit into the LGBT community because of your gender expression; difficulty finding clothes that you are comfortable wearing because of your gender expression; being misunderstood by people because of your gender expression.”³³ We anticipated that the DHEQ subscales would produce positive associations with the SGM workplace discrimination scale. Lastly, Krieger et al’s dichotomous item²³ measuring formal complaints for racial discrimination was modified for the SGM workplace (“Have you ever filed a formal complaint about LGBT discrimination at your workplace?”) and a positive correlation between formal complaints and increased SGM workplace discrimination was expected.

Data Analysis

We used a confirmatory factor analysis (CFA) to summarize the relationship among the SGM workplace discrimination items into a one-factor measurement model. Given that CFA of dichotomous data tends to bias estimates, when based on Pearson correlations or covariance, we used tetrachoric correlations with Robust Weighted Least Squares (WLS) to estimate model parameters with the dichotomous data.³⁴ We used Mplus v7.4³⁵ to conduct the CFA. In addition, we used SPSS v20 (Armonk, NY: IBM Corp) to compute internal consistency (KR-20), correlation analyses, and descriptive statistics to summarize sample characteristics.

We evaluated missing data and normality of variables prior to assessing item validity. An analysis of missing data indicated that less than 2% of the total responses for items were missing; therefore, these data were determined to be missing at random and were not imputed.³⁶

RESULTS

Participants

Table 1 shows, data were analyzed from a final sample of 124 SGM employed festivalgoers, with 94 identifying as gay/lesbian (59 male, 31 female, 1 transgender, 3 other gender identity) and 29 as bisexual (6 male, 19 female, 1 transgender, 3 other

Table 2
Goodness-of-Fit Indicators of Model Estimation and Unstandardized/Standardized (Standard Errors) Loadings for the One-factor Confirmatory Model for the Workplace Discrimination Scale among SGM Workers (N = 124)

Model	χ^2 , df (p-value)	CFI/TLI, RMSEA (90% CI)
	4.875, 5 (.43)	1.000/1.001, 0.000 (0.00-0.104)
Item	Unstandardized (SE)	Standardized (SE)
Have you ever been passed over/left out at a job for being lesbian, gay, bisexual, or transgender?	1.000 (--)	0.827 (.09)*
Do you have fewer opportunities for training because you are lesbian, gay, bisexual, or transgender?	1.024 (.18)*	0.847 (.09)*
Do you feel that straight employees are preferred when new equipment, activities, or working methods are introduced?	0.818 (.14)*	0.677 (.09)*
Do you receive smaller raises than straight employees because you are lesbian, gay, bisexual, or transgender?	0.988 (.17)*	0.817 (.10)*
Are you less likely to take part in new work opportunities than your straight peers?	0.816 (.19)*	0.675 (.10)*

* $p < .0001$

Note.

Dashes (--) indicate that the standard error was not estimated for the unstandardized coefficient. The intercorrelations between items were between $r = 0.45$ and $r = .76$, indicating reasonably strong/acceptable relationships.

gender identity). There was one unreported gender identity. Respondents ranged in age from 18 to 65 years (mean = 34.85, SD = 12.23). The following non-mutually exclusive racial/ethnic categories were represented by the sample: 6 Hispanic/Latino, 106 white, 14 black/African-American, 5 American Indian or Alaska Native, and 3 Asian. Three respondents selected "other" as the response to race/ethnicity. Lastly, a majority of the sample (over 90%) indicated having some level of college education, with 29.8% having a bachelor's degree and 35.5% having a graduate or professional degree.

Internal Consistency/Validity Analyses Results

Internal consistency. We used the Kuder-Richardson-20 (KR-20) formula to assess internal consistency for scale reliability, and the result ($\alpha = .71$) was above the acceptable .70 alpha coefficient.^{31,37} Internal consistency also was tested by eliminating one item at a time to see if reliability improved with deleting items. No deletion of any one item enhanced the reliability coefficient significantly;

therefore, no items were deleted from the scale.

Criterion validity. The SGM workplace discrimination scale correlated positively ($r = .47$, $p < .01$) with the single item measuring workplace bullying/harassment.²⁵ As expected, as workplace discrimination increased, so did the measure of workplace bullying. The results support criterion validity for the workplace discrimination scale.

Construct validity. The SGM workplace discrimination scale was correlated to variables with *a priori* set directions of the expected correlations for testing of construct validity. The general health measure, assessing respondents' self-reported overall health, was negatively associated with SGM workplace discrimination ($r = -.20$, $p = .01$); therefore, respondents with better self-reported health had lower scores on the workplace discrimination scale, and those with higher scores of SGM workplace discrimination rated poorer overall health. Items measuring psychosocial states, including internalized homonegativity ($r = .18$, $p = .049$), personal discrimination ($r = .61$, $p < .01$), isolation (r

= .34, $p < .01$), and gender expression discrimination ($r = .27$, $p < .01$), were positively correlated to workplace discrimination experienced among the SGM sample. Finally, the scale was positively correlated with having filed a formal complaint about SGM discrimination ($r = .25$, $p = .01$). These expected correlations were statistically significant and further demonstrated construct validity for the SGM workplace discrimination scale.

The CFA results indicated that all 5 workplace discrimination items loaded on one factor (Factor 1), with a predefined single-factor solution (eigenvalues ≥ 1.00). The fit indexes of the estimated model provided acceptable fit to the data. The χ^2 goodness-of-fit index was not statistically significant, which suggests model fit and appropriateness for the data ($\chi^2 = 4.88$, $df = 5$, $p = .43$). In addition, the Bentler's³⁸ comparative fit index (CFI) and TLI³⁹ were 1.00 and 1.001 respectively, and many researchers accept CFI and TLI fit indexes greater than .90.⁴⁰ Lastly, the Root Mean Square Error of Approximation (RMSEA = .00; 90% CI .00-.10) was at an acceptable level for supporting the one-factor model to fit the data. Table 2 provides parameter estimates for unstandardized and standardized factor loadings for the tested model.

DISCUSSION

Principal Findings

The adapted 5-item SGM workplace discrimination scale loads onto a single factor and shows evidence of criterion and construct validity. With just 5 items and a yes/no response format, this scale may be a useful tool for future work aiming to efficiently assess workplace discrimination against SGM populations.

Findings in Context

Employees who are sexual minority have no state legal protections in 26 states, and employees who are gender minority have no state legal protections in 27 states.⁸ Prior research has found evidence of salary and employment discrimination against SGM people.^{11,41,42} Thus, it is important to be able to measure and track employment discrimination against SGM people in multiple forms. The proposed SGM workplace discrimination scale provides an efficient method of doing so in 5 items.

Better tracking and understanding of the role of employment discrimination can inform our understanding of SGM health inequities and their production. Moreover, being able to identify and track employment discrimination can inform advocacy efforts to provide legal protections for SGM people.

Our findings provide evidence of the psychometric properties of a tool for assessing workplace discrimination against SGM adults. Our scale aligns with prior research on workplace discrimination showing an association with health.^{7,9} It is important to note that our scale focuses on perceptions of being treated differently rather than on micro-aggressions, harassment, and other forms of abuse. To us, this is a desirable property as it may better capture the discrimination that reduces resources. However, discrimination in employment and at workplaces against SGM adults has implications for both psychosocial stress and resources. Theories and frameworks of SGM health inequalities have focused heavily on the toll of stress from discrimination and stigma.^{5,6,43} Following these theories, prior measures of workplace discrimination have focused heavily, albeit not exclusively,^{9,18} on experiences of stress from being treated differently.^{19,21} Our approach is guided by ecological approaches to understanding SGM health inequities that explicitly highlight the economic and organizational context in which SGM people are employed.⁴⁴ Thus, our findings add to and extend the options for how to assess workplace discrimination and its impact on health.

Limitations

This research has important limitations. It is a cross-sectional study conducted in a single city in a state with relatively few protections for SGM adults.⁴⁵ Participants were employed and identified as SGM; however, they may not represent other employed SGM adults who do not attend pride festivals. Thus, our findings may not generalize to all SGM populations. Additionally, our scale focuses on material differences in treatment in the workplace (eg, pay, task assignment) rather than harassment or social climate of the workplace. As a result, this approach may exclude mistreatment by coworkers that does not extend to management decisions. Researchers should consider use of the proposed scale with this in mind.

IMPLICATIONS FOR HEALTH BEHAVIOR OR POLICY

The proposed 5-item scale has desirable measurement properties and may be a useful addition to future research on workplace discrimination against SGM populations. Such research is important given how workplace discrimination is linked with stress and health – as well as having a role in differential access to resources. Better measurement of discrimination may help identify its role in producing health inequity and inform stronger policy and system interventions. Specifically, given the ability to discriminate against SGM people in employment in over half of all US states,⁸ it is critically important to be able to track and understand workplace discrimination efficiently. Understanding how workplace discrimination contributes to SGM health inequities can inform policy development and advocacy. Future research could use our scale to evaluate policies addressing workplace discrimination against SGM people.

- Findings are applicable to the measurement of improving the health of SGM people per *Healthy People 2020*.
- Policymakers should recognize the implications of workplace discrimination on the health of SGM people.
- Public health surveillance systems should consider utilizing tracking of employment discrimination.
- Advocates and practitioners should work to advance policy solutions to identified workplace discrimination against SGM people.

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Human Subjects Approval Statement

The East Carolina University and Medical Center Institutional Review Board reviewed the research protocol (#16-001603).

Conflict of Interest Disclosure Statement

The authors report no conflict of interests.

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