

Perceived Experiences of Atheist Discrimination: Instrument Development and Evaluation

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The present 2 studies describe the development and initial psychometric evaluation of a new instrument, the Measure of Atheist Discrimination Experiences (MADE), which may be used to examine the minority stress experiences of atheist people. Items were created from prior literature, revised by a panel of expert researchers, and assessed psychometrically. In Study 1 ($N = 1,341$ atheist-identified people), an exploratory factor analysis with 665 participants suggested the presence of 5 related dimensions of perceived discrimination. However, bifactor modeling via confirmatory factor analysis and model-based reliability estimates with data from the remaining 676 participants affirmed the presence of a strong “general” factor of discrimination and mixed to poor support for substantive subdimensions. In Study 2 ($N = 1,057$ atheist-identified people), another confirmatory factor analysis and model-based reliability estimates strongly supported the bifactor model from Study 1 (i.e., 1 strong “general” discrimination factor) and poor support for subdimensions. Across both studies, the MADE general factor score demonstrated evidence of good reliability (i.e., Cronbach’s alphas of .94 and .95; omega hierarchical coefficients of .90 and .92), convergent validity (i.e., with stigma consciousness, $\beta = .56$; with awareness of public devaluation, $\beta = .37$), and preliminary evidence for concurrent validity (i.e., with loneliness $\beta = .18$; with psychological distress $\beta = .27$). Reliability and validity evidence for the MADE subscale scores was not sufficient to warrant future use of the subscales. Limitations and implications for future research and clinical work with atheist individuals are discussed.

Keywords: atheism, scale development, discrimination, minority stress, nonbelief, stigma

The impact of discrimination and stigma on the well-being of marginalized group members is a growing focus within counseling psychology research (Mallinckrodt, 2011). Minority stress theory (Meyer, 2003) the dominant theoretical framework that has been used to examine the negative sequelae of marginalization—has been widely supported with diverse populations and demonstrates that chronic discrimination promotes poor mental and physical health (Pascoe & Smart Richman, 2009; Schmitt, Branscombe, Postmes, & Garcia, 2014). Specifically, clear links between per-

ceived discrimination, stigma, and psychological symptomatology have been found with people of color (e.g., Szymanski & Lewis, 2015), sexual minority and gender diverse individuals (e.g., Sutter & Perrin, 2016), and religious minority groups (e.g., Hodge, Zidan, & Husain, 2016), among others. However, a paucity of empirical research has attended to the minority stress experiences of atheist people in the United States. Such a lack of research is surprising given that atheist people are not only a “numerical” minority group, but also a marginalized group faced with uniquely adverse attitudes and stigma from the broader American public (Cragun, Kosmin, Keysar, Hammer, & Nielsen, 2012).

Overwhelmingly, national survey data supports that Americans have significant bias against atheist people. Specifically, 40% of Americans polled in a survey of feelings toward religious groups in the United States reported negative views of atheists (Pew Research Center, 2014). Some of this bias may stem from beliefs that atheist people are different or deviant; indeed, data suggest that people in the United States view atheists as the social group (other groups included Muslims, immigrants, and sexual minority individuals) *least* likely to share their vision of American society (Edgell, Gerteis, & Hartmann, 2006). These beliefs may translate to actions that marginalize atheist people in their daily lives; for example, the previous study cited also found that Americans report that they would be least accepting of their son or daughter mar-

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rying an atheist compared to someone from another religious group (Edgell et al., 2006). In addition, a 2015 Gallup poll indicated that 53% of Americans would be least likely to vote for an atheist in a Presidential election out of all other religious group memberships (McCarthy, 2015). Research suggests that this significant bias manifests in experiences of discrimination; indeed, atheists report high levels of discrimination in schools, at places of employment, within the legal system, and across many other community and social settings (Cragun et al., 2012; Swan & Heesacker, 2012).

The limited scholarship on atheist people in the United States describes several interrelated manifestations of discrimination, including negative stereotypes about atheists (e.g., they are immoral and/or shameful), a pressure to “pass” as religious, and direct experiences of oppression (e.g., physical violence and/or social exclusion). However, no instrument has been designed specifically to assess the frequency at which atheist people perceive discrimination. The development of such a measure is essential to fully grasp the impact that this discrimination may have on the well-being of atheist individuals. Our positioning of atheism within a minority stress framework posits that—similar to other marginalized groups—antiatheist discrimination and stigma contributes to psychological distress and loneliness for atheist people. Thus, the present research aims to create and psychometrically evaluate the first known measure of perceived atheist discrimination. This measure will also help to fill a void in the multicultural competency training of clinicians, wherein atheism has been often overlooked as an aspect of identity that merits attention (D’Andrea & Sprenger, 2007).

Atheist People in the United States

National survey data indicates that the number of nonbelieving and religiously unaffiliated people in the United States—defined as atheists, agnostics, and those who believe in “nothing in particular”—is on the rise, with estimates increasing from 16% to 23% of Americans from 2007 to 2014 (Pew Research Center, 2015). Of this group, the percentage of individuals who identify explicitly as atheist or agnostic has also risen, now totaling approximately 7% of the population. Notably, the number of atheist people now parallels or surpasses that of other minority groups in the United States such as lesbian, gay, and bisexual (Pew Research Center, 2015) or Asian American populations (United States Census Bureau, 2012). Precisely categorizing nonbelieving populations in empirical studies has been a struggle for researchers, as definitions of “atheism” lack a clear consensus among scholars. However, nonbelief is typically presented as a spectrum ranging from those who are *strongly atheist* (have made a principled and deliberate decision to reject belief in God/gods) to those who are agnostic or *weakly atheist* (probably do not believe in God/gods but may be unsure of their beliefs; Baggini, 2003; Martin, 2007). Some atheist people may also opt to use additional labels to describe their nonbelief, such as freethinker or nontheist (among others), but there is little differentiation between these identities (McGowan, 2013).

Despite their growing presence in the United States, very few psychological studies contain meaningful discussion of atheists, and the few articles that include atheism do not typically address nonbelief as a valid diversity issue (Brewster, Robinson, Sandil,

Esposito, & Geiger, 2014; D’Andrea & Sprenger, 2007). In fact, a content analysis of peer-reviewed social science articles published between 2001 and 2012 found that only 100 articles focused specifically on nonbelieving populations (e.g., atheists, agnostics) and even fewer focused on the mental health and well-being of these groups (Brewster et al., 2014). By contrast, scholarship on religion and psychology is robust—with thousands of peer-reviewed articles, special issues in preeminent journals (e.g., *American Psychologist*), important meta-analyses (e.g., Ano & Vasconcelles, 2005), and several counseling handbooks (e.g., Cashwell & Young, 2014). Within counseling specifically, building knowledge, skills, and awareness about religion and spirituality is considered to be a staple of multicultural training (Vieten et al., 2013). Thus, the dearth of mental health research specific to atheist people is concerning given the (a) comparatively strong focus on religiosity and spirituality in psychology, (b) growing numbers of people who identify as atheist, and (c) significant reports of discrimination and stigma directed at atheists populations in the United States.

Minority Stress and Atheist People

Minority stress theory posits that discrimination (e.g., experiences of prejudice) and stigma (i.e., expectation of rejection and/or awareness of public devaluation of one’s social group) are highly correlated and both may yield negative outcomes such as psychological distress and social/interpersonal problems (Hatzenbuehler, 2009; Meyer, 2003). The strong interrelations of discrimination and stigma highlights that such experiences are both symptoms of a broader pantheoretical dehumanization, wherein “the denial of human characteristics to others may occur in everyday contexts and may reflect not only antipathy, but also mundane apathy or lack of motivation to understand or connect with another person” (Moradi, 2013, p. 154).

While widespread support exists for the links between discrimination, stigma, and indicators of psychological distress (i.e., depression, anxiety, substance use; for a review, see Moradi, 2013), a growing number of studies also support parallel links to psychosocial outcomes such as loneliness (Hubach et al., 2015; Sadiq & Bashir, 2014; Sutin, Stephan, Carretta, & Terracciano, 2015). While no known studies have examined how minority stress may contribute to psychological distress and loneliness for atheist people, a more thorough understanding of how atheist discrimination manifests can begin to shed light on such processes. Review of the available literature below suggests that such discrimination may be categorized broadly by three overlapping themes: negative stereotyping, pressure to “pass” as religious, and directly oppressive experiences.

Negative Stereotypes of Atheist People

“Atheists are immoral.” One of the most pervasive perceptions of atheists is that they are immoral due to a lack of belief in a God/gods or engagement in religious activities (Harper, 2007). For example, survey respondents describe people who engage in religious activities as more open, friendly, and less suspicious, while atheists are described as more materialistic, culturally elite, and more likely to be engaged in illegal activities (i.e., drug use and prostitution; Edgell et al., 2006; Galen, Smith, Knapp, &

Wyngarden, 2011). Such biased views align with research on perceptions about the significance of not believing in God; for example, when asked to imagine a life without God, conservative Christian individuals in one study described a world filled with violence, sexuality, and selfish behaviors (McAdams & Albaugh, 2008).

To examine perceptions of atheist immorality, Gervais (2014) conducted a series of experiments wherein he presented a hypothetical example of an immoral act—including animal cruelty, murder, incest, and cannibalism—to respondents of mixed religious and nonreligious beliefs. Each immoral act was considered to be more likely to be committed by an atheist than any of the other cultural group options provided—even by atheist study participants themselves. Similarly, another study found distrust to be a central factor in atheist discrimination, with only people who commit rape reportedly distrusted to the same degree as atheists (compared to other traditionally marginalized groups; Gervais, Shariff, & Norenzayan, 2011).

“Atheists are shameful.” Considering beliefs that atheist people are immoral and cannot be trusted, shaming is often discussed as another key dimension of atheist discrimination. Atheist individuals have reported being told that their atheism makes them wrong, stupid, arrogant, and bad parents (Arel, 2015; Downey, 2011; McGowan, Matsumura, Metskas, & Devor, 2009). Additionally, atheist people have described being labeled as immature and disrespectful to others because of their atheist beliefs (Fitzgerald, 2003; Koproske, 2006), and also stereotyped as rebellious, individualistic, hardheaded, and pleasure-seeking (Harper, 2007). Such experiences suggest that atheist individuals are emotionally stunted and contrarian, illustrated by the commonly noted stigmatizing experience of being told that one’s atheism is “just a phase” as a result of being angry with God (Hwang, 2008). From this lens, atheist people are treated as though their identity and/or worldview is something to overcome or conceal from others.

Discrimination that manifests in the form of negative group stereotypes (i.e., being treated as though you are immoral, shameful, or criminal) is a well-documented source of stress for marginalized groups such as sexual minorities and people of color (Brewster & Moradi, 2010; Pinel, 1999; Sue et al., 2008). Qualitative research, in particular, has illustrated the deleterious impact of such experiences; for example, in a recent study one lesbian woman directly attributed her suicidality and interpersonal struggles to early childhood experiences in the Pentecostal church where she was taught that sexual minority people were “perverts, you know, like child molesters and just awful people” (Barton, 2010, p. 472). Parallel personal narratives exist for atheist people, wherein individuals reflect on the stress resultant of being told that nonbelievers and their families will go to Hell (Arel, 2015; Brewster, 2014; Christina, 2014), yet lack of instrumentation has inhibited garnering quantitative data on these experiences.

Pressure to Pass as Religious

“Just pretend to believe, okay?” One method of avoiding discrimination as a member of a marginalized group is to hide your identity. Considering the risks to identity disclosure, many atheist people conceal their nonbelief from friends and family members, or are even pressured to do so (Smith, 2011). Such pressure can begin at a young age; in an online survey that prompted partici-

pants to provide an example of stigma due to their atheist identity, a mother described an instance where her son was “cornered in first grade by three other six-year-olds who screamed at him, ‘You WILL believe in Jesus!! You WILL believe in Jesus!!!’” (Arcaro, 2010, p. 55). Illustratively, a study of 796 atheists revealed that respondents had been asked by others to pray, attend religious services, swear an oath to God, keep their atheism secret, and/or pretend that they are not atheist (Hammer, Cragun, Hwang, & Smith, 2012). In a qualitative analysis of atheist experiences with coming-out, one individual living in the Bible Belt noted, “as an atheist, I’ve often lied and said I was Christian or that I didn’t really belong to one church. This was out of pure survival” (Brewster, 2014, p. 181). Such data has led some researchers and atheist activists to conclude that nonbelievers may be forced to remain “in the closet,” in a manner similar to sexual minority and gender diverse individuals (Brewster, 2013, 2014; Christina, 2014). While the repercussions of disclosing one’s atheist identity may pose a variety of risks, prior studies also indicated that concealing a stigmatized identity can result in reduced feelings of belongingness, social rejection, and loneliness (Newheiser & Barreto, 2014).

From a minority stress framework, research with other marginalized groups (namely sexual minority people) has often supported positive links between identity concealment, psychological distress, and low psychosocial outcomes (i.e., Schrimshaw, Siegel, Downing, & Parsons, 2013). Over the course of five studies, Sedlovskaya and colleagues (2013) illustrated that the source of this stress may be the tension caused by holding a “divided self” wherein one’s *self-in-public* and *self-in-private* schemas differ due to a concealable identity (e.g., being a religious student at a secular university). Divided selves, as a result of pressure to conceal nonbelief, are widely documented in atheist narratives, so much so that the “don’t tell Grandma” phenomenon is a well-understood experience among nonbelievers (Arel, 2015; Brewster, 2014; Christina, 2014). Yet, external pressure to conceal an identity also sends a message that the identity is deviant or something of which to feel ashamed. Thus, atheist people may find themselves in a difficult position, whether in or out of the metaphorical closet.

Direct Experiences of Oppression

“Believe, or else . . .” Recent news reports highlight the dangers that are faced worldwide by individuals who are outspoken about their atheist beliefs (Hammadi, 2015). The most extreme examples of this danger are the murders of four atheist bloggers who were violently killed in Bangladesh in 2015 (Uras, 2015). Relatedly, 14 countries in the Middle East and North Africa have laws against blasphemy and 12 have laws against apostasy, with penalties ranging from jail time to death (Theodorou, 2014); as such, atheist people in these regions of the world often face criminal charges and attacks for actions such as mocking religion online or peacefully protesting (Center for Inquiry, 2015). There are also documented instances of atheists being killed for their beliefs in the United States; however, attacks of this frequency and severity are rare (Downey, 2011). More commonly, atheist people have reported other overt and severe forms of discrimination, such as vandalized property and threats of death (Hunsberger & Altemeyer, 2006).

Hammer and colleagues' (2012) study of atheist people who experienced discrimination reported that overt and severe discrimination took the form of being physically threatened (9%), denied employment or educational opportunities (9%), health care discrimination (6%), personal property damage (5%), and physical assault (2%). In the United States there are also remaining laws and statutes (while unconstitutional and no longer enforced) in Arkansas, Maryland, Mississippi, North Carolina, Pennsylvania, South Carolina, Tennessee, and Texas that prohibit atheist individuals from holding public office or testifying in court (International Humanist and Ethical Union, 2014). Such laws send the message that the oaths of nonbelievers cannot be trusted (i.e., "Do you solemnly swear that you will tell the truth, the whole truth, and nothing but the truth, so help you God?") and therefore, they should be kept out of public roles.

"Stay away." Individuals from marginalized social groups often experience social exclusion (e.g., Concannon, 2008; Link & Phelan, 2001), and in turn, psychological distress and loneliness (MacDonald & Leary, 2005; Zhong & Leonardelli, 2008). Extant experimental (e.g., Furnham, Meader, & McClelland, 1998; Swan & Heesacker, 2012) and self-report research (e.g., Hunsberger & Altemeyer, 2006; Smith, 2011) suggests that atheist people are no exception. For example, Hammer and colleagues (2012) reported that many of their participants reported experiencing rejection by coworkers or classmates (36%), friends (31%), or family members (25%). Parallel to fears of "contamination" that have been noted by those who hold antigay bias, Heiner's (1992) study cited that atheist participants were reportedly banned from seeing their relatives' children when their nonbelief became known to within their families. Likewise, in 2003, the CEO of a major investment firm proclaimed that atheist employees are not welcome in his company (Downey, 2011).

Direct experiences of oppression—through overt maltreatment or more subtle ostracism—are both well-supported sources of psychological and interpersonal distress across diverse marginalized group members (for a review, see Moradi, 2013). Narratives from atheist individuals have described the pain that stems from interpersonal oppression, including verbal attacks of secular parenting decisions and inability to find romantic partners in more conservative parts of the United States (Arel, 2015; Brewster, 2014; Christina, 2014). However, while oppression does appear to occur at home, school, and the workplace for atheist people (Hammer et al., 2012; Swan & Heesacker, 2012), quantitative data examining its link to psychological distress and loneliness remain unexamined.

The Present Study

To address the lack of minority stress research with atheists, this series of studies developed and psychometrically evaluated the Measure of Atheist Discrimination Experiences (MADE). In Study 1, items were developed on the basis of prior literature and atheism experts' feedback. Items were then examined via exploratory factor analysis (EFA) to inform factor structure and item retention. Based on prior research (e.g., Hammer et al., 2012), the EFA was expected to reflect aspects of discrimination such as negative stereotypes about atheists (e.g., they are immoral, shameful), pressure to "pass" as religious, and direct experiences of marginalization (e.g., vandalism of property, physical violence, social ostracism).

After item reduction, the factor structure of the instrument was tested via initial confirmatory factor analysis (CFA) in an independent subsample. Specifically, three competing measurement models (i.e., unidimensional, oblique, bifactor) were examined. In Study 2, the structural generalizability of the MADE's factor structure identified in Study 1 was evaluated using CFA with data from a second sample.

Across Studies 1 and 2, reliability and validity were also assessed. Strong internal consistency reliability (α and coefficient omegas $\geq .70$) was expected for all MADE scores (e.g., total and subscale; general and group). Drawing from the relations posited by minority stress theory and as a test of convergent validity, all MADE scores were hypothesized to account for positive covariance in two different indicators of group-specific stigma awareness (Pinel, 1999; Hatzenbuehler, 2009). Lastly, drawing again from minority stress theory, we conducted an exploratory test of concurrent validity. Specifically, all MADE scores were expected to account for positive covariance in both loneliness and psychological distress.

Study 1: Instrument Development and Initial Psychometric Evaluation

Method

Participants. Data from 1,341 participants were analyzed in Study 1. Participants ranged in age from 18 to 83 years old ($M = 34.71$, $SD = 11.92$, $Mdn = 32$). Throughout this section, percentages may not total 100% due to small amounts (about 1%) of item-level missing data. Approximately 83% of the sample identified as White, 6% as Latino/a, 2% as Asian American or Pacific Islander, 2% as African American/Black, 1% as Native American, and 4% as other races or ethnicities (e.g., multiracial, Middle Eastern). About 41% of the sample identified as women, 57% as men, and 1% as transgender or gender nonconforming. In terms of sexual orientation, on a 1-to-5 continuum of exclusively lesbian or gay to exclusively heterosexual, approximately 72% of participants identified as exclusively heterosexual, 13% as mostly heterosexual, 8% bisexual, less than 1% as mostly gay or lesbian, 3% as gay or lesbian, and 3% as other sexual orientation (e.g., asexual, pansexual).

Approximately 15% of participants reported having earned a professional degree (e.g., doctorate), 6% had completed some postgraduate studies, 22% had earned a 4-year college degree, 12% had earned a 2-year college degree, 33% had some college experience, 9% had earned only a high school diploma, and less than 2% had some high school education or less. Moreover, about 1% of participants self-identified as upper class, 14% as upper-middle class, 38% identified as middle class, 22% as lower-middle class, 18% as working class, and 6% as lower class. Participants reported residing in 49 of the 50 states (all but South Dakota), with many residing in the states of California (12%), Texas (7%), Florida (5%), New York (5%), and Michigan (5%). In terms of environment, 53% of participants reported residing in suburbs, 29% in urban regions, and 17% in rural areas of the United States. Regarding belief systems held by participants prior to identifying as atheist, 65% of participants reported that they were initially religious or spiritual, 13% had no formal religious or spiritual

system, 13% identified as agnostic, and 8% reported that they had always been atheist.

Procedure. Participants were recruited through social media (e.g., Twitter, Facebook) and other online communities for atheist individuals. The study was advertised as an examination of the life experiences of atheist individuals. Participants were directed to an online survey that began with an informed consent page that asked respondents to affirm that they (a) self-identified as atheist, (b) were 18 years of age or older, and (c) resided in the United States. If respondents affirmed that they met these criteria and agreed to participate after reading the informed consent, they were prompted to complete the survey.

A total of 2,075 individuals responded to at least one survey item, but 683 entries were not usable because they were missing more than 20% of the data (excluding demographic questions) and were subsequently removed (Parent, 2013). Five respondents were removed from the dataset because they reported being younger than 18 years old and 32 were removed because they were not from the United States. Four attention check questions asking participants to mark a particular response (e.g., "Please mark 'strongly agree'") were included within the survey to ensure that participants were responding attentively. Fourteen respondents missed more than one validity item and were removed from the dataset. These data cleaning procedures resulted in 1,341 participants remaining in the analytic sample. Remaining low-level missing data were imputed using the Expectation-Maximization function in SPSS 23 (Jackson, Gillaspay, & Purc-Stephenson, 2009).

Instruments.

Development of the Measure of Atheist Discrimination Experiences (MADE). A pool of items was developed to assess atheist individuals' perceived experiences of discrimination. Item development was informed by prior literature on atheism in the United States, including empirical articles describing attitudes toward atheists (Edgell et al., 2006; Galen et al., 2011; Gervais, 2014) and theoretical and empirical scholarship discussing atheism and atheist individuals' experiences (e.g., Brewster, 2014; Swan & Heesacker, 2012). We developed the initial item pool to reflect the themes that emerged from this literature. This pool of 67 items was then reviewed by six atheism experts (social science faculty members whose programs of research addressed issues of nonbelief and secularism within the United States and had published extensively on these topics in scholarly outlets). These expert reviewers provided feedback about item clarity and content validity and made suggestions for expansion and deletion of items.

Following these proposed revisions and deletions, the final item pool consisted of 45 items. Respondents were asked to reflect on each experience described (e.g., "I have been told that, as an atheist, I cannot be a moral person.") and to report how frequently they thought that experience had occurred for them. Frequency of experiences within the past year was measured using a 6-point Likert scale (1 = *never* to 6 = *almost all of the time*) in line with other widely used measures of prejudice (e.g., Schedule of Racist Events; Landrine & Klonoff, 1996).

Stigma consciousness was assessed via the Stigma Consciousness Questionnaire (SCQ; Pinel, 1999) in an effort to provide support for convergent validity of the MADE. The SCQ is a 10-item Likert scale (1 = *disagree strongly* to 7 = *agree strongly*)

that measures awareness and personal salience of social stigma against one's group. The SCQ has been modified for use with people of diverse group memberships including individuals of color, women, and lesbian and gay persons. For the present study, SCQ items were adapted for use with atheist individuals (e.g., "Most heterosexuals have a problem with viewing homosexuals as equals" was modified to "Most people have a problem with viewing atheists as equals"). Higher scores indicate greater perceived awareness of stigmatization toward atheism. In prior research, SCQ items yielded a Cronbach's alpha of .81 within a sample of women in the United States (Pinel, 1999). In terms of validity, across populations (e.g., women, lesbian and gay persons) SCQ scores have been shown to correlate positively with perceived experiences of discrimination (Pinel, 1999). Cronbach's alpha for SCQ items with the current sample was .73.

Results

Exploratory factor analysis. We conducted exploratory factor analyses using SPSS 23 with data from approximately half of the participants ($n = 665$) drawn randomly by the program. Several guidelines in the literature indicated that this sample size was more than appropriate for obtaining stable factor solutions (Tabachnick & Fidell, 2001). Item distributions met recommendations for univariate normality (skewness index <3 , kurtosis index <10 ; Weston & Gore, 2006), with the exception three items that displayed slightly elevated skewness and kurtosis values. However, given that 42 of the 45 items were within the recommended guidelines we considered univariate normality to be adequate. Following the recommendation of Worthington and Whittaker (2006), we used principal axis factoring. Our data was suited for factor analysis as indicated by Kaiser-Meyer-Olkin values above .90 (MADE: .972; Tabachnick & Fidell, 2001) and significant Bartlett's tests of sphericity: $\chi^2(990, N = 665) = 22,603.52$, $p < .001$ (George & Mallery, 2009; Tabachnick & Fidell, 2001). Factor retention was decided by examining scree plots, parallel analysis (PA), and interpretability of factors. Visual analysis of the scree plot suggested examination of six-, five- and four-factor solutions. Both oblique (i.e., promax) and orthogonal (i.e., varimax) rotations were examined; however, findings from the oblique rotation are reported because emergent factors were expected to be correlated. One thousand random PA (Horn, 1965) data sets were computed. Eigenvalues for the first four factors were higher in the actual data set (i.e., 21.18, 2.16, 1.94, 1.46, 1.28) than in the PA (i.e., 1.53, 1.48, 1.44, 1.41, 1.37), which argues for the retention of four factors. However, examination of the six- and four-factor solution revealed that both of these factor solutions yielded a number of items with loadings less than .40 and multiple cross-loadings. Additionally, the four-factor solution resulted in the loss of an interpretable fifth factor. Given the greater risks of underextraction compared to overextraction (Fabrigar, Wegener, MacCallum, & Strahan, 1999), the five-factor solution was retained for MADE items.

The five-factor solution (see Table 1) reflected item content related to the following factors: Immoral, Bringing Shame, Asked to "Pass" as Religious, Overt Maltreatment, and Social Ostracism. The Immoral factor accounted for 47.06% of variance in the data, Shame accounted for an additional 4.79%, Pass an additional 4.32%, Overt an additional 3.25%, and Ostracism an additional 2.84%. Next, item retention for the MADE was determined by the

Table 1
Principal Axis Factoring Loadings for Retained MADE Items Study 1

Item content by factor	1	2	3	4	5
I have been told that, as an atheist, I cannot be a moral person.	1.02	-.07	-.02	.15	-.19
Because I am atheist, I have been asked how I can still have a purpose in life.	.81	.15	-.05	.01	-.12
Others have treated me like I don't understand the difference between right and wrong because I am atheist.	.76	.07	.06	.11	-.08
People have told me that I am not a "good person" because of my atheism.	.66	.03	.05	.26	-.01
I have been warned that I must give up my atheist beliefs in order to avoid suffering in the afterlife.	.66	.02	.05	-.05	.19
I have been told that I am immature because of my atheist beliefs.	.02	.80	-.02	-.01	-.05
I have been told that I will "grow out of" my atheism and that it is just a phase.	.07	.74	-.04	-.28	.16
Because I am atheist, people have told me that I am disrespecting my loved ones.	-.02	.70	.24	-.05	-.08
People have treated me as if my atheism is just a rebellious phase in my life, not a sincere set of beliefs.	.18	.63	.08	-.17	.05
I have been told that I am selfish because I am atheist.	.20	.63	.01	.02	-.16
People have told me that my atheism is a source of humiliation for them.	-.25	.61	.15	-.03	.20
Despite my atheism, I have been asked to pretend that I am religious.	-.05	.09	.79	.12	-.15
I have been asked to pretend that I am not atheist.	-.04	.05	.76	.21	-.01
I have been asked to go along with religious traditions to avoid "stirring up trouble."	.03	.08	.70	.13	.01
People have asked me to join them in thanking God for a fortunate event (e.g., saying grace before a special meal) even though they know I am atheist	.18	-.17	.68	-.03	.11
Even knowing I am atheist, others have expressed that they expect me to hold/plan a religious life ceremony for myself (e.g., wedding, baptism, funeral).	.13	.08	.60	-.01	-.08
People who know I'm atheist have asked me to attend religious services, despite my objections.	.12	.01	.54	-.22	.22
People have denied me services because of my atheism.	.01	-.12	.20	.61	-.03
I have been denied opportunities at work and/or in school because I am a known atheist.	.01	-.25	.20	.61	.15
My property has been vandalized because I am atheist.	-.04	.04	-.10	.44	.12
Others have physically harmed or assaulted me because of my atheism.	-.01	-.04	-.01	.41	.08
People have talked about me behind my back because of my atheism.	-.12	.14	-.03	.11	.76
Because of my atheism, others have avoided me.	-.03	-.01	-.09	.31	.72
I have been excluded from social gatherings and events because of my atheism.	-.21	.01	.07	.31	.66

Note. $N = 665$. MADE = Measure of Atheist Discrimination Experiences; Factor 1 = Immoral, Factor 2 = Bringing Shame, Factor 3 = Asked to Pass, Factor 4 = Overt Maltreatment, Factor 5 = Social Ostracism. The values reported in this table and note are those obtained from the principal axis factoring of the original 45 MADE items, but for parsimony only the retained 24 items are presented above. Boldface indicates factor loadings.

magnitude of factor loadings. Because we did not want to take a purely data-driven approach to item retention and scale length optimization, we also considered conceptual redundancy among items. Specifically, in the EFA, items with factor loadings of $\leq .40$ and cross-loadings $\geq .30$ were removed to ensure the construct specificity and stability of emergent factors (Kahn, 2006). Among the items that met loading and cross-loading criteria, conceptually redundant items with lower loadings were removed to optimize measure length. For example, the item "People have accused me of being evil because I am atheist" was removed because it was subsumed by "I have been told that, as an atheist, I cannot be a moral person." As a result of this process, a final set of 24 items was retained. Factor loadings and cross-loadings for retained items on the five emergent factors are reported in Table 1.

Initial confirmatory factor analysis. To confirm the factor structure of the MADE, a series of CFAs using the robust MLR estimator in *Mplus* (Version 6.11) was conducted using data from the remaining half of participants ($n = 676$). Model fit was determined through the use of absolute and incremental fit indices. Due to problems with relying solely on chi-square tests (Hu & Bentler, 1995), absolute model fit was assessed using the root mean square error of approximation (RMSEA) and the standardized root mean residual (SRMR). In their review of model fit guidelines, Weston and Gore (2006) noted that criteria for acceptable fit are CFI $> .90$ and RMSEA and SRMR $< .10$ (e.g., Hu & Bentler, 1995) with more stringent criteria of CFI $> .95$, and RMSEA $< .05$ (e.g., Hu & Bentler, 1999; Quintana & Maxwell, 1999). *Mplus'* MLR estimator was also used to calculate corrected/

scaled chi-square test statistic (Satorra-Bentler χ^2 ; Satorra & Bentler, 1988) for each model. The unidimensional model was nested within the bifactor model. The five-factor oblique model was not nested within the bifactor model because the model contained more than three latent variables. Thus, corrected/scaled chi-square difference tests ($\Delta\chi^2$), Akaike's information criterion (AIC), and Bayesian information criterion (BIC) were used to compare the fit of the unidimensional and bifactor models, whereas only the AIC and BIC were used to compare the fit of the five-factor oblique and bifactor models. Only models that achieved adequate fit were compared via these indices. Burnham and Anderson (2002) state that an AIC value difference exceeding 6 and especially 10 provides evidence of model fit difference (as cited in Symonds & Moussalli, 2011, p. 17). A BIC value difference exceeding 10 provides strong evidence of model fit difference (Kass & Raftery, 1995). The model with the lower AIC and BIC value is considered to have superior model fit. All analyses were done at the 5% significant level.

Both the bifactor model, $\chi^2(228) = 707.19$, $p < .001$; RMSEA = .056, 90% confidence interval [CI] [.051, .060]; CFI = .933; SRMR = .042, and the five-factor orthogonal model, $\chi^2(242) = 828.66$, $p < .001$; RMSEA = .060, 90% CI [.055, .064]; CFI = .918; SRMR = .045, demonstrated adequate fit. The unidimensional model, $\chi^2(252) = 2,140.08$, $p < .001$; RMSEA = .106, 90% CI [.101, .110]; CFI = .736; SRMR = .081, demonstrated inadequate fit. Fit comparisons revealed that the bifactor model fit better than the five-factor oblique model, $\Delta AIC = 172.89$, $\Delta BIC = 109.66$. In summary, the data suggest that the MADE

Table 2

Confirmatory Factor Analysis Loadings on the MADE General Factor for Study 1 and Study 2

Abbreviated parameter	Study 1			Study 2		
	Unstd	SE	Std	Unstd	SE	Std
Because I am atheist, I have been asked how I can still have a purpose in life.	1.13	.05	.58**	1.12	.04	.73**
I have been told that, as an atheist, I cannot be a moral person.	1.13	.05	.63**	1.09	.04	.70**
Others have treated me like I don't understand the difference between right and wrong.	1.18	.05	.61**	1.16	.04	.79**
People have told me that I am not a "good person" because of my atheism.	1.09	.05	.33**	1.13	.04	.81**
I have been warned that I must give up . . . in order to avoid suffering in the afterlife.	1.24	.05	.32**	1.21	.04	.75**
I have been told that I will "grow out of" my atheism and that it is just a phase.	1.04	.05	.43**	1.23	.05	.79**
I have been told that I am selfish because I am atheist.	.91	.05	.45**	.91	.04	.72**
I have been told that I am immature because of my atheist beliefs.	1.01	.05	.60**	.89	.04	.70**
People have told me that my atheism is a source of humiliation for them.	.66	.06	.63**	.70	.04	.69**
Because I am atheist, people have told me that I am disrespecting my loved ones.	.98	.06	.52**	1.03	.04	.78**
People have treated me as if . . . just a rebellious phase in my life, not a sincere set of beliefs.	1.25	.05	.65**	1.27	.04	.79**
People who know . . . have asked me to attend religious services, despite my objections.	.81	.05	.69**	.89	.04	.66**
Despite my atheism, I have been asked to pretend that I am religious.	.86	.05	.55**	.97	.04	.70**
People have asked me to join them in thanking God for a fortunate event.	.80	.06	.69**	1.01	.04	.67**
I have been asked to go along with religious traditions to avoid "stirring up trouble."	1.03	.05	.72**	.88	.04	.64**
I have been asked to pretend that I am not atheist.	.97	.05	.77**	.87	.04	.65**
Others have expressed that they expect me to hold/plan a religious life ceremony.	.88	.06	.65**	.98	.05	.62**
My property has been vandalized because I am atheist.	.16	.04	.75**	.20	.03	.36**
Others have physically harmed or assaulted me because of my atheism.	.12	.03	.78**	.12	.02	.32**
I have been denied opportunities at work and/or in school because I am a known atheist.	.44	.06	.71**	.45	.04	.48**
People have denied me services because of my atheism.	.33	.05	.74**	.25	.03	.43**
I have been excluded from social gatherings and events because of my atheism.	.69	.05	.77**	.69	.04	.60**
People have talked about me behind my back because of my atheism.	.85	.05	.76**	1.09	.04	.73**
Because of my atheism, others have avoided me.	.70	.05	.73**	.81	.04	.66**

Note. MADE = Measure of Atheist Discrimination Experiences; Unstd = unstandardized coefficient; Std = standardized coefficient.

* $p < .05$. ** $p < .001$.

conforms to a bifactor structure rather than a five-factor oblique or unidimensional structure. Factor loadings for the bifactor model—general factors and subfactors—are presented in Tables 2 and 3.

Model-based internal consistency. To determine whether it is justified to calculate and interpret total and/or subscale scores for the MADE, it was necessary to determine if the MADE total score and five subscale scores truly represent the constructs of interest. Coefficient Omega (ω) measures the proportion of total score variance that can be attributed to all common factors (i.e., true score variance, which excludes error variance). It can also be adapted to measure the proportion of subscale score variance that can be attributed to all common factors. Coefficient omega hierarchical (ω_H ; McDonald, 1999) measures the proportion of total score variance that can be attributed to a single general factor after accounting for group (i.e., subscale) factors. Coefficient omega hierarchical group (ω_{HG}) measures the proportion of total score variance that can be attributed to a given group factor after accounting for the single general factor and other group (i.e., subscale) factors. Coefficient omega subscale (ω_S) is a version of ω_H that measures the proportion of subscale score variance that is uniquely due to that group (i.e., subscale) factor after controlling for the single general factor.

While no definitive benchmarks for evaluating ω_H and ω_S exist at the time of this writing, Reise, Bonifay, and Haviland (2013) stated that "tentatively, we can propose that a minimum would be greater than .50, and values closer to .75 would be much preferred" (p. 137). Thus, $\omega_H > .75$ would indicate that the MADE's total score predominantly reflects a single general factor despite the presence of multidimensionality across items, which in turn would

permit researchers to interpret the total score as a sufficiently reliable and appropriate measure of the general discrimination construct. Likewise, $\omega_S < .50$ would indicate that the majority of that subscale's variance is due to the general factor and that negligible unique variance is due to that group factor. In other words, that subscale score's reliability is overwhelmingly inflated (i.e., confounded) by the general factor and does not cleanly measure the narrower subdomain construct that the subscale was purported to measure. In short, calculating a raw subscale score and interpreting it as a measure of that narrower subdomain construct would be misleading.

The ω was .97 and the ω_H was .90 for the MADE total score. The ω_{HG} for the five subscales were as follows: Immoral (.02), Shame (.01), Pass (.03), Overt (.01), and Ostracism (.01). These results suggested that the about 90% of the total score variance modeled is due to the general discrimination factor, whereas only about 8% of the total score variance is due to the five subscale group factors. Furthermore, 93% (i.e., ω_H of .90 divided by ω of .98) of the reliable variance in the MADE total score was due to the general factor, which means that the general discrimination factor is the only meaningful influence on total score variation.

The ω and ω_S , respectively, for the five subscale scores were as follows: Immoral (.99, .01), Shame (.87, .05), Pass (.88, .29), Overt (.80, .56), and Ostracism (.83, .33). These results suggested that the much of each MADE subscale's true score variance was accounted for by the general discrimination factor rather than the specific group factor. In summary, model-based reliability analyses provided support for the use of the MADE

Table 3

Confirmatory Factor Analysis Loadings on the MADE Subdimensions for Study 1 and Study 2

Abbreviated parameter	Study 1			Study 2		
	Unstd	SE	Std	Unstd	SE	Std
Factor 1: Immoral						
Because I am atheist, I have been asked how I can still have a purpose in life.	.62	.07	.39**	.78	.05	.51**
I have been told that, as an atheist, I cannot be a moral person.	.85	.05	.55**	.82	.05	.52**
Others have treated me like I don't understand the difference between right and wrong.	.66	.06	.43**	.46	.05	.31**
People have told me that I am not a "good person" because of my atheism.	.61	.06	.43**	.14	.05	.10*
I have been warned that I must give up my . . . in order to avoid suffering in the afterlife.	.51	.07	.30**	.34	.05	.21**
Factor 2: Bringing Shame						
I have been told that I will "grow out of" my atheism and that it is just a phase.	.49	.20	.32*	.79	.25	.51*
I have been told that I am selfish because I am atheist.	-.12	.04	-.09*	-.08	.11	-.06
I have been told that I am immature because of my atheist beliefs.	.09	.07	.07	.23	.07	.18*
People have told me that my atheism is a source of humiliation for them.	-.09	.04	-.09*	-.12	.09	-.12
Because I am atheist, people have told me that I am disrespecting my loved ones.	-.01	.05	-.01	-.03	.10	-.03
People have treated me as if . . . is just a rebellious phase in my life, not a sincere set of beliefs.	1.10	.38	.69**	.57	.12	.36**
Factor 3: Asked to Pass						
People who know . . . have asked me to attend religious services, despite my objections.	.44	.07	.33**	.28	.06	.21**
Despite my atheism, I have been asked to pretend that I am religious.	.75	.06	.55**	.88	.04	.63**
People have asked me to join them in thanking God for a fortunate event.	.59	.08	.39**	.32	.06	.21**
I have been asked to go along with religious traditions to avoid "stirring up trouble."	.84	.06	.53**	.41	.05	.30**
I have been asked to pretend that I am not atheist.	.72	.06	.51*	.72	.04	.54**
Others have expressed that they expect me to hold/plan a religious life ceremony for myself.	.45	.09	.28*	.36	.06	.22**
Factor 4: Overt Maltreatment						
My property has been vandalized because I am atheist.	.21	.09	.44*	.33	.05	.59**
Others have physically harmed or assaulted me because of my atheism.	.20	.08	.52**	.15	.04	.39**
I have been denied opportunities at work and/or in school because I am a known atheist.	.61	.07	.59**	.41	.05	.43**
People have denied me services because of my atheism.	.56	.08	.76**	.34	.06	.57**
Factor 5: Social Ostracism						
I have been excluded from social gatherings and events because of my atheism.	.58	.06	.48**	.47	.05	.41**
People have talked about me behind my back because of my atheism.	.68	.07	.50**	.50	.05	.33**
Because of my atheism, others have avoided me.	.57	.06	.50**	.66	.06	.54**

Note. MADE = Measure of Atheist Discrimination Experiences; Unstd = unstandardized coefficient; Std = standardized coefficient.

* $p < .05$. ** $p < .001$.

total scores to represent the general discrimination construct, but do not provide clear support for the use of raw subscale scores to represent the narrower subdomain factors. MADE general factor descriptive statistics were as follows: $\alpha = .95$; $M = 2.31$, $SD = .89$.

Convergent validity. We used an structural equation model (SEM) to evaluate convergent validity of the MADE in Study 1 (see Table 4), which was specified as follows: MADE items were set to load in accordance with the aforementioned bifactor model,

stigma consciousness items were set to load on a stigma consciousness factor, and the MADE general and group factors were simultaneously regressed onto the stigma consciousness factor. Cohen's (1988) D guidelines were used to interpret small ($\beta = .20$), medium ($\beta = .50$), and large ($\beta = .80$) effect sizes.

Convergent validity was supported in that the MADE general factor was positively and significantly associated ($\beta = .56$) with stigma consciousness. The Overt and Pass factors failed to account for significant variance in the criterion variable. The Immoral ($\beta =$

Table 4
Concurrent and Criterion Validity for Study 1 and Study 2

MADE factors	Study 1 β (SE)		Study 2 β (SE)	
	Stigma Consciousness	Public Devaluation	Psychological Distress	Loneliness
General	.56 (.04)***	.37 (.03)***	.27 (.03)***	.18 (.03)***
Social Ostracism	.47 (.05)***	.06 (.06)	.11 (.05)*	.12 (.04)**
Overt Maltreatment	.06 (.05)	-.07 (.04)	.01 (.04)	.00 (.04)
Asked to Pass	.10 (.05)	.05 (.04)	.06 (.04)	.04 (.04)
Bringing Shame	.11 (.05)*	-.03 (.05)	.13 (.02)*	.09 (.05)
Immoral	.27 (.04)***	.01 (.05)	-.02 (.05)	-.03 (.04)

Note. MADE = Measure of Atheist Discrimination Experiences. Study 1 ($N = 676$) and Study 2 ($N = 1057$) data presented is for the final 24-item MADE.

* $p < .05$. ** $p < .01$. *** $p < .001$.

.27), Shame ($\beta = .11$), and Ostracism ($\beta = .47$) group factors demonstrated unique positive associations with stigma consciousness.

Study 2: Confirmation of Structural Generalizability and Validity of Instrument

Method

Participants. Data from 1,057 participants were analyzed in Study 2. Participants ranged in age from 18 to 83 years old ($M = 37.97$, $SD = 12.08$, $Mdn = 35$). Percentages may not total 100% due to small levels of missing data. Approximately 83% of the sample identified as White, 4% as African American/Black, 3% as Latino/a, 2% as Asian American or Pacific Islander, 1% as Native American, and 6% as other races or ethnicities (e.g., multiracial, Middle Eastern). About 57% of the sample identified as women, 40% as men, and 2% as transgender or gender nonconforming. In terms of sexual orientation, approximately 64% of participants identified as exclusively heterosexual, 16% as mostly heterosexual, 10% bisexual, 4% as gay or lesbian, less than 1% as mostly gay or lesbian, and 5% as other sexual orientation (e.g., asexual, pansexual). Approximately 25% of participants reported having earned a professional degree, 9% had completed some postgraduate studies, 25% of had earned a 4-year college degree, 11% had earned a 2-year college degree, 24% had some college experience, 5% had earned only a high school diploma, and less than 1% had some high school education or less. Moreover, less than 1% of participants identified as upper class, 17% as upper-middle class, 38% of participants identified as middle class, 22% as lower-middle class, 17% as working class, and 5% as lower class. Participants reported residing in 49 of the 50 states (all but North Dakota), with many residing in the states of Texas (12%), California (9%), Florida (5%), Ohio (5%), and New York (4%). In terms of environment, 54% of participants said they lived in suburbs, 32% in urban areas, and 14% in rural regions of the United States. Regarding belief systems held by participants prior to identifying as atheist, 64% of participants reported that they were initially religious or spiritual, 13% had no formal religious or spiritual system, 14% identified as agnostic, and 9% reported that they had always been atheist.

Procedure. Study 2 utilized the same recruitment procedure, methodology, and data cleaning procedures as Study 1. A total of 1,827 individuals responded to at least one survey item, but after removing cases missing more than 20% of the data (excluding demographic questions) 1,066 participants remained. Responses were screened according to the same procedures outlined in Study 1. Two cases were removed because they did not reside in the United States and seven cases were deleted because they were missing more than one validity check item. These data cleaning procedures resulted in a final sample size of 1,057.

Measures

Measure of Atheist Discrimination Experiences (MADE). To confirm the factor structure and model-based reliability results of Study 1, participants in Study 2 completed the final 24-item version of the MADE.

Awareness of public devaluation, or respondents' perceived stigmatization of their group by others, was assessed with the four-item Public subscale of the Collective Self-Esteem Scale (Luhtanen & Crocker, 1992) in an effort to provide support for convergent validity of the MADE. Participants were asked to rate their level of agreement with items such as, "In general, others think that atheist people are unworthy" (modified from "In general, others think that the social group I am a member of is unworthy"). Items were rated on a 7-point scale (from 1 = *strongly disagree* to 7 = *strongly agree*). Higher scores signify greater awareness of public stigmatization. Public CSE items yielded Cronbach's alphas of .78 and .88 in a sample of White and Asian American young adults (Pedersen, Hsu, Neighbors, Lee, & Larimer, 2013). In support of validity, prior research indicates that stigmatized groups tend to report greater perceived public devaluation of their group on the Public CSE subscale than nonstigmatized groups (Richeson & Ambady, 2001). Internal consistency reliability for items on the Public CSE was .64.

Loneliness was measured via Version 3 of the UCLA loneliness scale (UCLA3; Russell, 1996) in an effort to provide support for concurrent validity of the MADE. The UCLA3 assesses the degree of loneliness and social isolation that an individual might feel (e.g., "How often do you feel left out?"). Items are rated on a Likert scale from 1 = *never* to 4 = *often*. Higher ratings indicate higher levels of reported loneliness. The UCLA3 yielded a Cronbach's alpha of .91 in a sample of primarily white college students (Dahlen, Czar, Prather, & Dyess, 2013), and scores from the UCLA3 have been shown to be positively related to other measures of psychological distress, such as depression (Westefeld, Maples, Buford, & Taylor, 2001). Cronbach's alpha for UCLA3 items in the present sample was .95.

Psychological distress was measured using the Hopkins Symptom Checklist-21 (HSCL-21; Green, Walkey, McCormick, & Taylor, 1988) in an effort to provide support for concurrent validity of the MADE. HSCL-21 items assess the extent to which respondents report being bothered or distressed by particular symptoms (e.g., "Feeling blue"). Items are rated on a 4-point scale (from 1 = *not at all* to 4 = *extremely*), with higher scores reflecting greater psychological distress. HSCL-21 items yielded a Cronbach's alpha of .91 in a nonclinical sample of primarily White women and men from the Midwest, and scores have been shown to be correlated as expected with perceived stress and stressful events (Krycak, Murdock, & Marszalek, 2012). Internal consistency reliability for items on the HSCL-21 in the present sample was .91.

Results

Final confirmatory factor analysis. The same CFA procedures conducted in Study 1 were repeated for Study 2. As in Study 1, both the bifactor model, $\chi^2(228) = 1,015.65$, $p < .001$; RMSEA = .057, 90% CI [.054, .061]; CFI = .933; SRMR = .037, and the five-factor orthogonal model, $\chi^2(242) = 1,414.96$, $p < .001$; RMSEA = .068, 90% CI [.064, .071]; CFI = .901; SRMR = .044, demonstrated adequate fit. The unidimensional model, $\chi^2(252) = 2,613.03$, $p < .001$; RMSEA = .094, 90% CI [.091, .097]; CFI = .800; SRMR = .063, once again demonstrated inadequate fit.

Fit comparisons revealed that the bifactor model fit better than the five-factor oblique model, $\Delta AIC = 571.41$, $\Delta BIC = 501.93$. In

summary, the data provide evidence of structural generalizability for the bifactor structure of the MADE. The item loadings for the MADE general factor and subfactors are displayed in Tables 2 and 3. Descriptive statistics for the MADE total score were as follows: $\alpha = .94$, $M = 2.29$, $SD = .91$.

Model-based internal consistency. To verify findings from Study 1, that only the MADE total score should be interpreted, we conducted the same model-based reliability analyses on Study 2 data. Results once again confirmed that the MADE total score ($\omega_H = .92$) can be used to represent the general discrimination construct, whereas the subscales' scores (Immoral $\omega_S = .01$, Shame $\omega_S = .04$, Pass $\omega_S = .19$, Overt $\omega_S = .43$, Ostracism $\omega_S = .24$) do not cleanly measure the narrower subdomain constructs.

Convergent and concurrent validity. We ran three structural models to evaluate convergent and concurrent validity of the MADE in Study 2 (see Table 4). The first structural model was specified as follows: MADE items loaded in accordance with the aforementioned bifactor model, awareness of public devaluation items loaded on an awareness of public devaluation factor, and the MADE general and group factors were simultaneously regressed onto the awareness of public devaluation factor. The second (loneliness) and third (psychological distress) structural models, to test concurrent validity, were specified in a parallel manner.

Further support for convergent validity (in addition to that provided in Study 1) was revealed, in that the MADE general factor was positively and significantly associated ($\beta = .37$) with awareness of public devaluation. The five group factors failed to account for significant variance in the criterion variable. Support for the concurrent validity of the MADE was illustrated by positive and significant associations between the MADE general factor with loneliness ($\beta = .18$) and psychological distress ($\beta = .27$). The Overt, Pass, and Immoral group factors failed to account for unique variance in either loneliness or psychological distress. The Ostracism group factor demonstrated a significant relationship with both loneliness ($\beta = .12$) and psychological distress ($\beta = .11$), whereas the Shame group factor demonstrated a significant relationship with psychological distress ($\beta = .13$).

Discussion

The present two studies represent an important first step in furthering minority stress research specific to atheist individuals, a rapidly growing demographic group within the United States that has been largely overlooked within psychological scholarship. By developing the MADE, researchers can now examine how such negative experiences shape mental health and well-being for atheist people in a more empirical manner. Across two large U.S.-based samples, findings supported the structural generalizability and internal consistency reliability of the MADE total score and provided preliminary evidence for the convergent and concurrent validities of the MADE total score. Thus, the MADE total score may be used as a tool for advancing future research and practice with atheist people.

To determine the structure and dimensionality of the MADE, a bifactor analysis was conducted. Bifactor modeling revealed that perceived atheist discrimination, as operationalized by the MADE, is defined by both a strong general discrimination factor as well as five narrower subdomain factors (i.e., Immoral, Bringing Shame, Asked to "Pass" as Religious, Overt Maltreatment, and Social

Ostracism—described later). The structural generalizability of this bifactor structure was supported by confirmatory factor analyses with data from two large samples of atheist people. Importantly, the internal consistency reliability of the general discrimination factor, as operationalized by the MADE total score, was also supported across both samples. Further, in support of convergent validity, the MADE general factor score was positively and significantly associated with stigma consciousness (moderate to strong effect) and perceived awareness of public devaluation (moderate effect). Such associations are empirically and theoretically consistent with a growing body of minority stress scholarship positing that experiences of discrimination and prejudice promote vigilance for and awareness of stigma toward one's group, and are thus, strongly linked (e.g., Hatzenbuehler, 2009). Such findings also lend support to mounting theoretical discourse positing that discrimination and stigma are interrelated because they are both symptoms of a broader pantheoretical dehumanization (Moradi, 2013). While correlational data such as ours should not be used to as evidence for causal interpretation, this pattern of findings may be consistent with the existence of a recursive link between perception of experiencing discrimination and expecting one's identity or social group to be devalued by others. In the context of the United States, where disparaging nonbelief and discounting atheist people may not only be socially acceptable but also sanctioned by some governmental and religious institutions (Acara, 2010; Brewster, 2014), such a link may be particularly notable.

Finally, findings with the general discrimination factor yielded concurrent validity that offer preliminary support for the application of minority stress theory (Meyer, 2003) to atheist individuals. Specifically, the MADE general factor score was positively and significantly associated with loneliness (small effect) and psychological distress (small to moderate effect). Such associations add to widespread support that exists for the relation between discrimination, stigma, and indicators of psychological distress such as depression, anxiety, or substance use (for a review, see Moradi, 2013). Further, our findings with loneliness contribute to a growing body of research that links discrimination and stigma with poor psychosocial outcomes (Hubach et al., 2015; Sadiq & Bashir, 2014; Sutin et al., 2015) and, our findings parallel those between reported prejudice experiences and mental health indicators in a meta-analysis (Pascoe & Smart Richman, 2009).

Prior empirical research and theoretical scholarship suggests that atheist individuals are often negatively stereotyped, pressured to pass as religious, and victims of oppression and the bifactor model reflected similar subdimensions of discrimination in the MADE. Specifically five subdomain factors assessing discrimination emerged. First, the *Immoral* subfactor reflects experiences such as being treated as though atheists have no purpose in life or moral standards that prevent one from committing terrible acts (e.g., murder) because they do not hold religious or spiritual beliefs. Second, the *Bringing Shame* factor captured encounters wherein atheist individuals are reportedly told that they are immature, selfish, intentionally rebellious, and humiliating to others because they are nonbelievers. Third, the *Asked to Pass* subfactor reflected experiences where atheist people are reportedly pressured to participate in religious traditions and pretend to be religious against their will. Fourth, the *Overt Maltreatment* subfactor reflected reported overt experiences of discrimination such as having property vandalized or being denied services in an establishment

for being atheist. Fifth, the *Social Ostracism* subfactor conveyed more subtle reported encounters of interpersonal prejudice such as being avoided or excluded from social gatherings for being atheist.

Unfortunately, in regard to the reliability of the narrower subdomain factors, our results advocate caution around the calculation and interpretation of the five subscales. Across both samples, model-based internal consistency reliability results did not provide support for the use of raw subscale scores as measures of the five narrower subdomain factors. Therefore, if future researchers wish to cleanly measure the subdomain construct by using the assigned subscale, they must use SEM (to partial out the variance from that subscale score that is due to the general factor) when conducting any analysis with that subscale score. In other words, calculating the subscale score using the COMPUTE function in SPSS will result in a subscale score that is biased and would be misleading to interpret.

Importantly, our SEM-based results revealed that the subdomain factors only marginally demonstrated the theoretically expected relationships with our four tests of convergent (i.e., positive relations with group-based stigma awareness) and concurrent (i.e., positive relations with psychological distress and loneliness) validity. For example, the best performing subdomain, Social Ostracism, accounted for unique variance beyond the general factor in stigma consciousness, loneliness, and psychological distress, but not public devaluation of atheists. Thus, the validity of this subdomain factor was supported in 75% of the validity analyses conducted. Percent support for the other subscales was as follows: Immoral (25%), Bringing Shame (50%), Asked to Pass (0%), and Overt Maltreatment (0%). Thus, support for the validity of the five subdomain factors varied, with the Ostracism factor receiving moderate support and the other four factors receiving weaker to no support. Therefore, the present preliminary results suggest it is defensible to use the Social Ostracism factor in future research but less defensible to use the other four subscales, pending further validity evidence. The finding of a general factor with support for its reliability and validity but subscales with varying degrees of reliability and validity is a common occurrence when subjecting instruments to bifactor modeling. Such an outcome has been found for well-validated and highly respected instruments (e.g., Beck Depression Inventory-II; Wechsler Adult Intelligence Scale-IV; Brouwer, Meijer, and Zevalink, 2013; Gignac & Watkins, 2013).

In summary, the present findings provide consistent support for the reliability and validity of the MADE general discrimination factor (as operationalized by the MADE total score), mixed support for the validity of the Social Ostracism subdomain factor score (as operationalized by the SEM-based group factor score that partials out the variance due to the general discrimination factor), and insufficient support for the validity of the four other subdomain factor scores; these results tentatively suggest that it is permissible to calculate and interpret the MADE total score and the SEM-based Ostracism subscale score, but not the other four subscale scores. For parsimony, we would recommend future researchers use and interpret only the MADE total score, which yielded strong reliability and validity across all tests.

Implications for Practice

Our findings may be used to inform clinical work with atheist individuals in a number of ways. First, the MADE may be used as

an assessment tool with atheist clients to examine their experienced levels of discrimination and explore how their scores may relate to their perceived interpersonal and intrapersonal struggles. Explicit conversations about experienced discrimination and stigma may be validating and empowering to atheist clients who have been socialized in regions of the United States that are particularly conservative or unsupportive of diversity in worldviews. Next, discussing the considerable stress that may occur as a result of concealing or hiding parts of one's identity (i.e., having to "pass" as religious) may be eye-opening to some atheist clients (Pachankis, 2007). Particularly for clients who live in more rural or religiously conservative regions of the country, the vast majority of opportunities to connect socially with others may be rooted in religious communities and events (Brewster, 2014; Christina, 2014; Smith, 2011). To this end, online communities and social media outlets may be particularly helpful points of affirmation for atheist clients who feel lonely and isolated from other nonbelievers in their geographic region.

Limitations and Future Directions

Research must always be interpreted in light of limitations and future directions. First, similar to the few other studies with predominantly atheist samples (for a review, see Brewster et al., 2014), both of our samples were demographically homogenous regarding race, at roughly 80% White. Such a pattern of underrepresentation of individuals of color is well documented and may be representative of the broader atheist population in the United States (Zuckerman & Martin, 2007). Further, scholars and activists have noted that the relative absence of individuals of color from atheist and nonbelieving communities may be linked to the historic social and community support that churches often provide in the face of societal racism. The potential discomfort of being a nonbeliever at church may be outweighed by the benefit these connections (Hutchinson, 2011). However, the lack of racial diversity in our samples highlight that the structure of the MADE should be evaluated for its replicability and validity with atheist individuals of color. Additionally, results may not be generalizable outside of the United States to regions where atheism is more accepted or typical (i.e., Scandinavia) or more stigmatized (i.e., Pakistan, Colombia). Even within the United States, attitudes regarding nonbelief may vary by region—with people from the South and Midwest holding more negative attitudes than those in the Northeast or Northwest (Zuckerman & Martin, 2007). Future studies may find it fruitful to examine how geographic region shapes reports of discrimination.

An additional potential limitation of the study was that participants were recruited via online communities and social media. Thus, responses may be representative of only those atheists who found or received the survey online and were motivated enough to participate. Further, it is possible that atheist individuals who are active in groups for nonbelievers (or who were forwarded the study link by a contact who is active in such groups) are more "out" than other atheists without ties to these virtual communities. As such, study participants may have different experiences with discrimination and stigma than atheist people who are less "out" about their worldviews. Additionally, while access to the Internet is widespread in the United States, potential participants who do

not have online access in their workplaces, homes, or on their cellular phones may have been unable to take part in the study.

Another limitation of our study is that all of the instruments we utilized to test the validity of the MADE have not been previously utilized with atheist samples. Though such a problem is unavoidable when conducting research with a population that has been previously unexamined, it still means that findings from this study should be replicated to confirm their stability and generalizability. Of note, the public devaluation scale (Public subscale of the CSE) yielded a marginal internal consistency reliability, which warrants further examination in future studies. Further, the overall lack of validity data for any measures with atheist samples underscores the paucity of empirical research focused on this group, but also poses important future directions to psychometrically evaluate and develop new measures. Considering that connection to a higher power and spirituality are almost universally regarded as important dimensions of well-being in psychology, carefully considering how we measure and conceptualize well-being for atheist individuals may be an important task for counseling psychologists to tackle.

Taken together, the present studies developed and provided initial evidence of reliability and validity for the first measure of perceived discrimination experiences of atheist people in the United States. The MADE is a tool that may be used to further build upon and refine the relations outlined in minority stress theory. Future studies may now begin to explore how perceived experiences of atheist discrimination relate to other commonly assessed dimensions of mental health such as self-esteem, life satisfaction, and environmental mastery. Furthermore, drawing from the minority stress framework, the MADE may be used in studies to examine factors that intervene in the link between discrimination and mental health outcomes such as identity salience, coping strategies, social support, and community involvement. We hope that the MADE can contribute to future researchers extending the depth and breadth of knowledge about atheist people.

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