

Associations between Microaggression and Adjustment Outcomes:

A Meta-Analytic and Narrative Review

P. Priscilla Lui and Lucia Quezada

Southern Methodist University

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Abstract

Microaggression has been considered a form of stressor that negatively affects people with marginalized statuses. Research shows variability in how microaggression is measured, and the extent to which it is associated with adjustment outcomes. A new cube model was proposed to conceptualize microaggression across social groups, interpersonal and group-level interactions, and categories of incidents. Synthesizing findings from published and unpublished studies, this study was aimed to examine the relations between microaggression and adjustment outcomes. Meta-analyses quantified the study-level correlations between microaggression and various adjustment outcomes, and estimated the degree to which methodological and individual factors explained between-study variability. Using 72 independent study samples ($N = 18,718$), omnibus analysis with a random-effects model showed a statistically significant summary correlation between microaggression and adjustment outcomes ($r = .20$, 95% CI = .16-.23, $p < .001$). Between-study variability ($Q = 319.86$, $p < .001$, $\tau^2 = .01$, $I^2 = 77.80\%$) was explained by gender, race, and publication status. Except for gender microaggression, racial, LGBTQ, and health status microaggressions were associated with adjustment outcomes. Microaggression was relatively more strongly associated with internalizing problems, stress/negative affect, and positive affect/adjustment than with externalizing problems and physical symptoms. Adjustment outcomes were more closely linked to interpersonal microaggression than group microaggression, and to microassault than microinsult and microinvalidation. Narrative reviews showed that very few studies tested whether microaggression predicted adjustment outcomes above and beyond overt discrimination and individual difference factors, and examined the indirect mechanisms that may link microaggression to adjustment outcomes. Limitations to the scope of this research synthesis and future research directions are discussed.

Keywords: disability; intersection; people of color; prejudice; sexual minority

Public Significance Statement

Microaggression is a subtle form of discrimination. Similar to research on overt discrimination, this meta-analysis shows a robust and small bivariate correlation between adjustment outcomes and racial, LGBTQ, and health status microaggressions. Correlations are larger (1) when adjustment outcomes focus on internalizing problems, stress and negative affect, and positive adjustment and affect, (2) when microaggression is measured at the interpersonal level and in terms of microassault, and (3) in samples with more men, and with Asian, Black, and Hispanic Americans.

Associations between Microaggression and Adjustment Outcomes:
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Microaggression is characterized as “subtle, stunning, often automatic, and nonverbal exchanges which are ‘put downs’” of people from minority and marginalized statuses (Pierce, Carew, Pierce-Gonzalez, & Wills, 1977, p. 65). Microaggression research primarily has focused on racism, sexism, and homophobia/heterosexism that target people of color, women, and people in the lesbian, gay, bisexual, transgender, queer, and genderqueer (LGBTQ) community, respectively (Sue, 2010). Qualitative and quantitative research with adolescents and adults has shown that racial and LGBTQ microaggressions are associated with adjustment outcomes such as self-esteem, perceived stress, negative and positive affect, depression and anxiety symptoms (e.g., Hu & Taylor, 2016; Hughes, Del Toro, Harding, Way, & Rarick, 2016; Ong, Burrow, Fuller-Rowell, Ja, & Sue, 2013). Microaggression also is associated with poor therapeutic alliance and clinical outcomes among clients seeking professional psychological help (e.g., Owen et al., 2011; Shelton & Delgado-Romero, 2011).

To date, there has been only one narrative review on LGBTQ microaggression and racial microaggression, respectively (Nadal, Whitman, Davis, Erazo, & Davidoff, 2016; Wong, Derthick, David, Saw, & Okazaki, 2014). As shown in these reviews, evidence regarding the direct relations between microaggression and adjustment outcomes has been mixed. It also is unclear whether microaggression is distinct from overt discrimination as a correlate of adjustment outcomes. To our knowledge, no research synthesis has examined the extent to which adjustment outcomes are associated with microaggressions targeting various social groups. Additionally, research on microaggression recently has been criticized for its emphasis on experiential reality over empirical reality, because many studies relied on qualitative methods

(e.g., focus groups and individual interviews) and because of the inconclusive findings about microaggression's causal influence on adjustment outcomes (Lilienfeld, 2017a, 2017b). In spite of these remaining empirical questions and criticisms, there continues to be an increase in the number of studies on microaggression as it relates to adjustment outcomes. In order to further advance this research program, there is a critical and timely need to synthesize and review studies on microaggression and adjustment outcomes.

Broadly, adjustment can be conceptualized as an outcome used in many psychological studies (Seaton, 2009). A complete view of psychological adjustment includes the presence or absence of psychological symptoms (e.g., anxiety and depression) as well as indicators of positive functioning (e.g., self-esteem and subjective well-being), whereas physical health adjustment includes outcomes that reflect diseases, self-rated health, and physiological responses (e.g., elevated blood pressure) that may precede diseases (Mays, Cochran, & Barnes, 2007; Rasmussen, Scheier, & Greenhouse, 2009). As the first meta-analytic review in this area, we aimed to examine the associations between microaggression and various psychological and physical adjustment outcomes.

What is Microaggression?

Microaggression has been conceptualized to elicit stress and negative emotional responses because cumulative exposures to insidious slights and invalidations—even if they are innocuous—can result in psychological burden and in turn maladjustment (Pierce et al., 1977). Discrimination experiences that are uncontrollable, unpredictable, and ambiguous may be more stressful than those that are easily recognized and clearly attributable to certain group biases (Williams & Mohammed, 2009). For example, indirect communications of racism have been reported to be more harmful than direct communications of racism (Leets & Giles, 1997). To

best investigate how microaggression may be associated with adjustment outcomes, it is critical to understand microaggression in the context of discrimination and other related constructs, the existing taxonomy of microaggression, and the psychological processes that may underlie the microaggression experiences.

Microaggression in the Context of Stereotypes, Prejudice, and Overt Discrimination

To understand the complex definition of microaggression, one should consider the triad of stereotypes, prejudice, and discrimination. Stereotypes are beliefs and opinions that people hold about any given group members' characteristics and behaviors (Ellemers, 2018). These stereotypes may or may not accurately describe the groups on average and are often exaggerated and erroneously applied to all members from the social group (Kite & Whitley, 2016). Some stereotypic images (e.g., gender) may be universal across countries, whereas others (e.g., racial and religion-based stereotypes) may be distinctive to cultural contexts (Fiske, 2017). Although negative stereotypes are associated with how people treat members of the said social groups, prejudice is more closely linked to intergroup behaviors. Prejudice constitutes attitudes or emotions people have toward members of any given social groups. Discrimination, then, is the differential treatment of people because of their social group memberships, and it can manifest at the individual, institutional, or cultural levels (Williams & Mohammed, 2009).

There has been some discourse that challenges findings from the microaggression research program, and in turn questions the robustness of the (causal) associations between microaggression and adjustment outcomes. This is an issue that has not faced the study of overt discrimination (Reid & Foels, 2010). There has been a long history of psychological research on the possible impact of discrimination on adjustment outcomes. More traditionally, studies have focused on overt discrimination. Overt discrimination is the outright, blatant differential

treatment of minoritized people, based on certain personal characteristics or group affiliations that are deemed inferior to those of the dominant groups (Korous, Causadias, & Casper, 2017). These explicit, old-fashioned forms of discriminatory incidents are consciously intended to harm minoritized groups. Examples of overt discrimination include lynching, group segregation, and the use of inappropriate slurs. Hate crimes registered by the Federal Bureau of Investigation (FBI) likely reflect the most egregious acts of overt discrimination. Over the past 20 years, there has been a 30% decrease in single-bias hate crimes reported by the U.S. Department of Justice (FBI, 1997, 2017). Relatedly, the growing body of work on discrimination has focused on microaggression, given the fact that discriminatory acts against racial, sexual orientation, and gender minorities in the U.S. and other countries have become less blatant, public, and extreme (cf. Lilienfeld, 2017a; Sue, 2010). Although stereotypes and prejudices that underlie microaggression have been shown to be correlated with those that underlie overt discrimination (McConahay, 1986), research has supported the practical distinctions between microaggression and overt discrimination (Swim, Aikin, Hall, & Hunter, 1995). Relatedly, much research has intentionally focused on microaggression alone, and little work has considered the roles of microaggression and overt discrimination on adjustment outcomes simultaneously.

Conceptualization and Taxonomy of Microaggression

Similar to overt discrimination, microaggression can be motivated by prejudices toward people in various social groups, including race and ethnicity, gender, sexual orientation and gender identity, religion, age, ability and health status, and appearance (Kite & Whitley, 2016), as well as immigration or adoption statuses. Despite the unique lived experiences among people across marginalized statuses, there seem to be shared cognitive processes and consequences associated with discrimination (Pascoe & Smart Richman, 2009). According to statistics from

2016, single-bias hate crimes in the U.S. were most commonly motivated by racial, religious, sexual orientation, and gender identity discrimination (FBI, 2017). Within these broad social groups, Black/African Americans, Jews and Muslims, gay men, and transgender people were the most frequent targets, respectively. Nevertheless, the prevailing taxonomy put forth by Derald Wing Sue and colleagues (2007) has enlisted categories and examples that characterize everyday microaggression experiences that can be generalized to different social groups.

Categories of microaggression. Sue's original taxonomy is the only conceptual model that currently exists in categorizing microaggression into lower-level domains: microinsult, microinvalidation, and microassault.¹ Microinsults are “communications that convey rudeness and insensitivity” to people's social identities (Sue, Capodilupo, et al., 2007, p. 274). These communications also can take the form of exceptionalizing stereotypes—complimentary but nonetheless negative stereotypic views of people (Tran & Lee, 2014). Microinvalidations are “communications that exclude, negate, or nullify the psychological thoughts, feelings, or experiential reality” of minoritized people (Sue, Capodilupo, et al., 2007, p. 274). Unlike microinsults and microinvalidations that are often implicit derogations that convey hidden prejudicial and demeaning messages, microassaults are explicit attacks that are “meant to hurt [people from marginalized groups] through name-calling, avoidant behavior, or purposeful discriminatory actions” (Sue, Capodilupo, et al., 2007, p. 274).

Within these broad categories, qualitative research has summarized many examples of microaggression. Racial microaggression can be broken down into ascription of intelligence, second class citizen, pathologizing cultural values or communication styles, assumption of

¹ From a conceptual standpoint, microassault likely should not be constituted as a category of microaggression because this category represents explicit, often conscious derogations that are meant to hurt people of marginalized statuses (Wong et al., 2014). In explaining the manifestations of microaggression, Kite and Whitley (2016) only discussed microinsult and microinvalidation, and did not address microassault.

criminal status, alien in own land, color blindness, myth of meritocracy, and denial of individual racism (Sue, Capodilupo, et al., 2007). For example, Blacks may be watched, monitored, or followed in department stores because of the assumptions that they are criminals (Sue, Capodilupo, & Holder, 2008), or that White Americans' opinions are valued more than Asian Americans' because Asians are considered second class citizens in the U.S. (Sue, Bucceri, Lin, Nadal, & Torino, 2007).

LGBTQ microaggression examples include the use of heterosexist or transphobic language, endorsement of heteronormative or gender-conforming culture and behaviors, assumption of universal LGBTQ experience, exoticization, discomfort around or disapproval of the LGBTQ experience, denial of reality of heterosexism or transphobia, and assumption of sexual pathology or abnormality (e.g., oversexualization and undersexualization; see Nadal et al., 2016 and Platt & Lenzen, 2013 for summary). In a therapeutic context, assuming that people's LGBTQ status is the root cause of all presenting problems, and minimizing or over-identifying with clients' LGBTQ experiences also can constitute examples of microaggression (Shelton & Delgado-Romero, 2011).

Finally, despite increasingly greater gender equality in recent decades, women still are more likely to be excluded, mistreated, or subscribed to stereotypic gender expectations than men (Foster, 2009). Women may be considered to be less intelligent or capable than men, and are more likely to be viewed as sexual objects (Sue, 2010). These messages can be demoralizing, and engender a sense of "otherness" and psychological distress among women.

Social levels. As indicated in Sue's (2007) conceptual framework for microaggression, and consistent with research on discrimination more broadly (Kite & Whitley, 2016), microaggression can manifest at the interpersonal, organizational, institutional, and cultural

levels. Interpersonal microaggression refers to subtle derogations and putdowns that are communicated face-to-face at a personal level. Microaggression at the organizational, institutional, and cultural levels refers to devaluation, under-respect, and inequalities that harm the marginalized groups collectively; it also tends to be communicated in the broader environmental contexts. Two examples of microaggression at the group level include only men being featured in portraits hanging in corporate office spaces, and people of color portrayed as less intelligent than White Americans in the media. Survey research shows that interpersonal and non-interpersonal discrimination can be distinguished from each other, and they can exert nuanced effects on self-esteem: being discriminated individually is related to poorer self-esteem, but being discriminated as a group is related to higher levels of self-esteem (Armenta & Hunt, 2009; Bourguignon, Seron, Yzerbyt, & Herman, 2006).

An integrated cube model. Based on this knowledge base and inspired by the cube model for competency development (Rodolfa et al., 2005), we designed a three-dimensional microaggression cube to illustrate the complex ways in which microaggression can manifest in people's daily lives across group memberships, categories of microaggression, and social levels. As shown in Figure 1, group membership, social levels, and categories are orthogonal dimensions. Each microaggression incident can be identified as one point in this cube. We considered group microaggression as an overarching level that would subsume organizational, institutional, and cultural microaggressions. The contrast between interpersonal and group microaggressions is consistent with the distinction between direct and environmental microaggressions in primary studies (Molero, Recio, García-Ael, Fuster, & Sanjuán, 2013; Nadal, 2011; Sue, Capodilupo, et al., 2007; Torres-Harding, Andrade, & Romero Diaz, 2012; Woodford, Chonody, Kulick, Brennan, & Renn, 2015).

Study Design and Measurement of Microaggression

Building on much qualitative research on microaggression during this research program's earliest years (e.g., Constantine, 2007; Sue, Bucceri, et al., 2007; see Nadal et al., 2016 and Wong et al., 2014 for review), more recent quantitative research has used recall-based or daily diary survey methods to examine this construct (e.g., Ong et al., 2013; Torres-Harding & Turner, 2015). A small number of experimental studies have manipulated *in vivo* individuals' exposures to microaggression in order to measure their emotional and physiological reactions (e.g., Hughey, Rees, Goss, Rosino, & Lesser, 2017). Early research has measured simply racial prejudices that underlie overt discrimination (e.g., "It is a bad idea for Blacks and Whites to marry one another") and microaggression (e.g., "Over the past few years Blacks have gotten more economically than they deserve"; McConahay, Hardee, & Batts, 1981, p. 568). Other research includes denial of discrimination, antagonism toward minority people's needs, and resentment about special favors for historically-minoritized groups as content areas of microaggression (Swim et al., 1995). More recently developed measures of overt or subtle discrimination have focused on the behavioral manifestations of negative attitudes toward people of minority status(es).

Since Sue and colleagues (2007) published their seminal piece on racial microaggression in the *American Psychologist*, the taxonomy outlined in that article remained the only one available to date. In an attempt to better identify, quantify, and ultimately rectify subtle discrimination, development of many self-report measures of microaggression has relied on this prevailing taxonomy as a theoretical foundation. A number of scales have been constructed to measure subtle discrimination motivated by racist, heterosexist, or sexist attitudes, and a combination of these biases. These measures include the *Racial Microaggressions Scale* (Torres-

Harding et al., 2012) and the *Homonegative Microaggressions Scale* (Wright & Wegner, 2012). There has been one published measure, the *Multidimensional Scale of Perceived Discrimination* (Molero et al., 2013), that has been developed to assess general microaggression among people across marginalized group memberships (i.e., ethnic minority immigrants, stigmatized health status, and LGBTQ individuals). Similar to the case of overt discrimination, the existence of group-specific and general measures indicates that microaggression can take unique forms and manifestations across social groups, yet, there are sufficient similarities in these experiences that transcend social groupings. No research synthesis has examined how these self-report measures function in assessing microaggression, and whether they yield robust results concerning the associations between microaggression and adjustment outcomes. Thus, it would be important to review the psychometric properties of existing microaggression scales, and explore the extent to which using different measures explains the mixed findings concerning the associations between microaggression and adjustment outcomes.

Conceptual Frameworks Linking Microaggression to Adjustment Outcomes

As implied by the definition of microaggression, its possible consequences can be largely subjective. Unlike overt discrimination where there is a general consensus about the deliverers' ill-intent as well as the psychological and physical harm endured by the receivers—and therefore is “normatively stressful” (Lazarus & Folkman, 1984, p. 14), people who experience microaggression can interpret the incident differently and in turn experience various emotional reactions (Harris, 2008; Reid & Foels, 2010). Microaggression may seem harmless and benign, yet can still yield negative consequences to its receivers (O'Keefe, Wingate, Cole, Hollingsworth, & Tucker, 2014; Wang, Leu, & Shoda, 2011). For example, among American Indian patients with diabetes, research showed a stronger association between depression

symptoms and past-year hospitalization among those who experienced more racial microaggression incidents (Walls, Gonzalez, Gladney, & Onello, 2015).

The minority stress framework (Meyer, 2003; Myers, Lewis, E, & Parker-Dominguez, 2003) and a biopsychosocial perspective can help conceptualize the possible psychological mechanisms that link microaggression to adjustment outcomes. Cumulative exposures to injustice can tax people's capacity and resources to cope, and in turn elicit physical and psychological pressure or tension (Meyer, 2003). Among people of marginalized statuses, experiences with prejudices, feelings of exclusion, expectations of rejection, and daily hassles of dealing with these issues can create stress (Calabrese, Meyer, Overstreet, Haile, & Hansen, 2014; Huebner & Davis, 2007). Even though microaggression incidents may not take the shape and form as universally cataclysms, the inadvertent stimulus-and-response relation categorically marks microaggression experiences as a stressor (Lazarus & Folkman, 1984).

The minority stress framework conceptualizes discrimination-related stressors along the continuum ranging from distal events (objective conditions) to proximal appraisals (intrapersonal subjective experiences; Meyer, 2003). Microaggression is by definition ambiguous; hence, these incidents may yield feelings of hassles, annoyances, helplessness, and burden the individuals' psychological resources to cope (Sue, 2010; Sue, Capodilupo, et al., 2007). Unlike the case with overt discrimination, people who experience microaggression incidents are not afforded with the clear attributions of differential treatments to the deliverers' prejudices. Rather, receivers of microaggression may have to contend with (1) how they know for certain that discrimination has taken place (e.g., "What just happened?"), (2) whether they have misinterpreted these incidents as cases of microinsult or microinvalidation (e.g., "Is it me?"), and (3) how to handle the situation (e.g., "Do I bring this to the deliverers' attention?"). The daily hassles and

psychological burden can arise from the catch-22 processes that underlie a microaggression stimulus. When appraised as “taxing or exceeding [their] resources,” microaggression may negatively affect people’s adjustment outcomes (Lazarus & Folkman, 1984).

Consistent with the minority stress framework, Smith and colleagues (2011) offered a battle fatigue perspective to explain the psychological (e.g., frustration, apathy), behavioral (e.g., increased maladaptive coping, increased commitment to spirituality), and physiological (e.g., headaches, high blood pressure, sleep disturbance) stress responses that may arise from dealing with microaggression. Although the “active ingredients” associated with microaggression stresses are conceptualized as daily hassles, one study has suggested that racial microaggression can elicit nonspecific traumatic stress symptoms that are common in exposures to overt discrimination (Torres & Taknint, 2015). Other research that explicitly studies the psychological mechanisms has found that microaggression (or generally minority stressors) predict poor adjustment via cultural mistrust, expectations of rejection, self-stigma, and rumination (Kim, Kendall, & Cheon, 2016; Timmins, Rimes, & Rahman, 2017).

Possible Moderators in the Relations between Microaggression and Adjustment Outcomes

Microaggression has been called into question as a robust source of sociocultural stressor, possibly because of some inconsistent results documenting its associations with various measures of adjustment outcomes. Such inconsistencies likely have resulted from between-study methodological differences and between-individual and group differences.

Adjustment Outcomes

Previous meta-analyses have shown that (racial) discrimination is negatively associated with adjustment outcomes, but the correlations are relatively the strongest for internalizing psychological problems (e.g., depression and traumatic stress) when compared to externalizing

problems and health risk behaviors (e.g., alcohol use and smoking), positive psychological adjustment (e.g., self-esteem and subjective well-being), and physical health (e.g., cardiovascular problems and cortisol output; Pascoe & Smart Richman, 2009). To the extent that microaggression has been theorized to exert psychological burden, it stands to reason that microaggression also would be more closely associated with internalizing problems, negative affect, psychological distress, and positive affect and overall adjustment, than externalizing problems and physical symptoms.

Social Groups, Social Levels, and Categories of Microaggression

Microaggression targeting specific social groups has tended to be studied separately, with the exception of a few studies that have examined LGBTQ microaggression or gender microaggression among people of color (e.g., Balsam, Molina, Beadnell, Simoni, & Walters, 2011; Jioni, Ruby, Stacy, & Margaret Browne, 2016; Thomas, 2015). There is no compelling theoretical or empirical rationale for speculating that any particular single-bias microaggression would be more closely related to adjustment outcomes. Consistent with the minority stress framework, however, people with multiple marginalized statuses may be exposed to cumulative prejudices and therefore particularly prone to experiencing microaggression and consequent stresses (Calabrese et al., 2014). For example, whereas any person of color may experience microinsult or microinvalidation because of racism, women of color may experience additional derogations because of long-standing sexism in many cultural contexts. In addition, people with multiple marginalized statuses may be taxed with the added burden to decipher the reasons behind microaggression incidents (i.e., “Was I mistreated because of my race or my gender?”). In terms of methodological factors, it remains unclear whether adjustment outcomes would be differentially associated with microaggression occurring at the interpersonal and group levels,

and with microinsult, microinvalidation, and microassault. Due to the direct and personal nature, it is possible that microaggression at the interpersonal level is more stressful than microaggression at the group level. For example, results from a narrative review show that alcohol-related outcomes are consistently associated with racial, LGBTQ, gender, and age/physical appearance discrimination at the interpersonal level, but not at the systemic/structural levels (Gilbert & Zemore, 2016).

Microassault has been questioned as a form of microaggression because of its explicit and intentional nature (Lilienfeld, 2017a; Wong et al., 2014), but it is unclear whether it would be more or less closely related to adjustment outcomes than microinsult and/or microinvalidation. On the one hand, should microassault resemble old-fashioned overt discrimination, microassault may be more closely associated with traumatic stress symptoms and in turn be more detrimental to adjustment outcomes. On the other hand, microinsult and microinvalidation can manifest in many forms of slights and derogations and likely are more insidious and frequent in everyday lives; the cumulative nature of these microaggression categories may make them more stressful than microassault.

Publication Status

Finally, there has been an increase in the number of quantitative studies on racial microaggression since 2010 (Wong et al., 2014). This likely results from the development of more reliable and valid measures of microaggression. It is also possible that there had been more time to allow quantitative research to appear in peer-reviewed journals. As a result, we intended to explore whether published and unpublished studies differed in the associations between microaggression and adjustment outcomes, and whether these effects shifted over time.

The Present Investigation

The goals of the present investigation were to synthesize research pertaining to the associations between various types of microaggression and adjustment outcomes. To describe the distribution of study effects, we conducted a meta-analysis to quantify a summary correlation and examine the variability across samples. We used both meta-analytic and narrative review approaches to explore the extent to which these associations were related to studies' methodological characteristics and participant factors. Findings from this investigation were expected to identify gaps in this literature and in turn help advance the field.

Based on the conceptual framework of microaggression (Sue, Capodilupo, et al., 2007), existing narrative reviews (Nadal et al., 2016; Wong et al., 2014), and research syntheses concerning overt discrimination (e.g., Pascoe & Smart Richman, 2009), we expected that there would be a small-to-moderate correlation between microaggression and adjustment outcomes. There have been numerous meta-analytic reviews concerning the link between perceived overt discrimination and psychological adjustment, and physical health outcomes (Jones, Peddie, Gilrane, King, & Gray, 2016; Jones et al., 2017; Lee & Ahn, 2012; Pascoe & Smart Richman, 2009), our quantitative estimate would allow us to determine whether psychological and physical adjustment outcomes were more or less closely related to microaggression than overt discrimination. Additionally, we expected the relations between microaggression and adjustment outcomes to be stronger for internalizing problems than externalizing problems and physical health symptoms, and that microaggression at the interpersonal level would be more closely linked to adjustment outcomes than at the group level. Comparing the study effects across adjustment outcomes and microaggressions targeting different social groups can unveil the complexity of this form of subtle discrimination. Finally, we hypothesized that there would be a stronger correlation between microaggression and adjustment outcomes in studies focusing on

people with multiple marginalized social group memberships (e.g., LGBTQ people of color) than people with one marginalized group membership. In addition to these *a priori* moderators, we also explored other methodological and individual variables such as microaggression categories and measures, age, gender, race, and LGBTQ identifications as possible moderators. Findings would shed light on factors that contributed to the between-study variability, and help inform new research questions surrounding microaggression. Considering that this was the first research synthesis on microaggression and adjustment outcomes, we included both published and unpublished completed studies from various countries.² This not only presented a comprehensive review of all available research to date, but also provided an opportunity to test possible publication bias that might favor larger and statistically significant findings.

Method

Procedures in terms of literature searches, inclusion and exclusion criteria, coding parameters, and overall data analytic plan were preregistered with PROSPERO International Prospective Register of Systematic Reviews.

Literature Search and Screening

We used a number of literature search methods to identify relevant research reports.³ Across these methods, we collected research records and managed them using *Zotero*, and then exported the search database into MS Excel for screening and coding purposes. First, a computerized literature search was conducted using *PsycINFO* and *Google Scholar*. We

² We had initially included only studies that examined microaggression among marginalized groups in the U.S., because historical, sociopolitical, and intergroup contexts differ across countries. At the request of a reviewer, we added non-U.S. studies to capture a broader research synthesis on this topic.

³ There are a number of methods for identifying published and unpublished sources of information in research syntheses. The most common sources of published data are peer-reviewed journals from search engines, edited books, references from previous reviews, and manual searches of printed journals (Swift & Wampold, 2018). Sources of unpublished materials vary: “grey literature” is typically represented in doctoral dissertations/master’s theses, and “grey information” can be reflected in conference proceedings, working papers by researchers, unpublished data, government documents, and social media posts (Adams, Smart, & Huff, 2017).

collected research reports from peer-reviewed journal articles, book chapters, and unpublished master's theses/doctoral dissertations available from these search engines. Keywords used in these searches were *microaggression**, *subtle discrimination*, *covert discrimination*, and *subtle racism*. Searches were conducted on June 1-2, 2017, and yielded 687 records. Second, during June 2017 and again February 2018, we conducted backward searches to identify other articles cited in narrative reviews and manuscripts that were already retrieved. Third, we manually searched research records that were available online but not yet in print in major diversity-focused journals. These journals were *Asian American Journal of Psychology*, *Cultural Diversity and Ethnic Minority Psychology*, *Hispanic Journal of Behavioral Sciences*, *Journal of Black Psychology*, *Journal of Counseling Psychology*, *Journal of Latino/a Psychology*, *Journal of LGBT Youth*, *Psychology of Men and Masculinity*, and *Psychology of Sexual Orientation and Gender Diversity*. The manual searches added 15 research records to our MS Excel spreadsheet. Fourth, we conducted auxiliary searches during July and August 2018 to identify unpublished, grey information.⁴ We systematically identified 30 researchers as experts in this content area. These researchers had been primary or senior authors of published research articles that were collected during the primary searches. Among individuals whom we contacted, one email message was undelivered, and nine researchers provided a response. Three out of these nine researchers reported that they had unpublished data available for sharing. Finally, we solicited grey information on the listserv of the Society for the Psychological Study of Culture, Ethnicity, and Race. Our auxiliary searches added four research articles possibly eligible for the meta-analysis. All of these search efforts yielded 706 articles⁵ spanning 1960-2018 for further

⁴ Although not specified in our preregistered research plan, we were recommended by a reviewer to survey grey information by soliciting unpublished data from experts in this field and relevant academic listservs.

⁵ Readers interested in the list of recruited research reports can request this information from the first author.

considerations.

Inclusion criteria for the initial screening were: peer-reviewed articles, book chapters, or master's theses/doctoral dissertations that were written in English, employed a quantitative or mixed-methods design that yielded effect size information linking microaggression and adjustment outcomes. We included studies in which authors operationalized microaggression as a subtle form of discrimination (e.g., administered a scale measuring self-reported experiences with microaggression, or subjected participants to microaggression incidents in a controlled laboratory environment), and measured individual adjustment outcomes. Whereas broad, nonspecific scales assessing unfair treatment or discrimination (e.g., the *Everyday Discrimination Scale*) were not considered theory-driven measures of microaggression, validated survey instruments (e.g., the *Racial Microaggressions Scale* or the *Sexual Orientation Microaggression Inventory*) or other scales constructed for a specific study were deemed appropriate as long as the authors operationalized them as measures of microaggression. Similarly, we included any individual adjustment outcomes with the intent of capturing all relevant research reports. Studies that only examined the relations between microaggression and interpersonal adjustment (e.g., social support, quality of relationships, and therapeutic alliance) were excluded.

Screening occurred at two stages, first using article titles and abstracts, and second by carefully reviewing the full research reports. In cases where multiple research articles used the same group of participants, we included the first available article to avoid duplicating samples in our meta-analysis. Additionally, in cases where the same dataset was used in both a published research report and an unpublished dissertation, we coded information from both sources. Two coders independently screened all research records obtained from the literature database for their

suitability to be included in this study. The inter-coder reliability was adequate (91.67% proportion of agreement; $\kappa = .80$ accounting for agreement by chance). Disagreements regarding the exclusion of research reports were resolved through discussion.

Seventy-three research reports met our inclusion criteria, but 10 of them did not contain zero-order effect size information for coding. We contacted the corresponding authors of these articles via email, and requested that they provide us with the relevant effect sizes. A total of 72 independent study samples from 65 research reports contained sufficient study and effect size information to be included in our meta-analysis. Figure 2 summarizes the procedures in the literature search and screening based on the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) checklist.

Coding

A detailed coding scheme was developed collaboratively by the authors, and finalized through an iterative trial coding process (Lipsey & Wilson, 2001; Wilson, 2009). The coding scheme included qualitative and numeric information in an Excel spreadsheet. The coding protocol allowed flexibility in recording study information that was inconsistently reported across articles (e.g., some studies reported the percentages of lesbians and gays separately, but other studies reported the percentage of LGBT individuals altogether). We coded the following study-level information: title of research report, author(s), year of publication/research report, publication status, grant funding source(s), country of sampling, study design, measures of microaggression, and measures of adjustment outcomes. We also coded a number of participant-level information, including sample size, sample mean age, percentage of women, percentage(s) of transgender and LGB participants, percentage of foreign-born participants, and education attainment. Most studies in this literature reported zero-order correlations. In addition to

Pearson's correlation coefficients linking adjustment outcomes and microaggression, we also coded other effect size indicators such as mean differences in participants' adjustment outcome scores in a microaggression condition versus a control condition. The second author coded all research reports and entered them into the Excel spreadsheet. Throughout the screening process, a random sample of the studies (10% of the included research reports) were selected and double coded by the first author, and any discrepancies were discussed and resolved among the authors to ensure inter-coder reliability (Wilson, 2009). The first author then transformed the same information from the Excel coding protocol into a *Comprehensive Meta-Analysis* (CMA) v3 data file (Borenstein, 2014).

Data Analysis

Overall effect size estimation and identification of heterogeneity. We conducted analyses using information in the CMA data file. To compute a weighted mean correlation between microaggression and adjustment outcomes, all effect sizes retrieved from the research reports or their authors were coded in such a way that positive associations indicated that greater microaggression experiences were linked to greater adjustment problems. The effect sizes linking microaggression and positive affect and positive adjustment outcomes were reverse coded in estimating the omnibus summary effect size. Various types of effect sizes were first converted into z scores for calculations, which were then converted back into Pearson's r coefficient for interpretation. We used a random-effects model to calculate the weighted mean correlation (Lipsey & Wilson, 2001). Additionally, we tested between-study heterogeneity in several ways. First, Cochran's Q was computed to show the distribution of observed correlation effects in the meta-analysis and determine whether the between-study variability was greater than what would be expected from sampling error. Second, τ^2 was computed to quantify the

between-study variance of the true effect sizes. τ was expressed in the same standardized correlation scale as the summary effect. Third, we estimated I^2 to indicate the proportion of variance in the observed effect sizes that would be due to any true effect variations in the population. I^2 value of 25%, 50%, and 75% respectively suggests a low, moderate, and high proportion of dispersion in the observed correlations that would remain should sampling error be removed (Borenstein, Higgins, Hedges, & Rothstein, 2017). Lastly, we computed a prediction interval to evaluate the dispersion of the true effect sizes (Borenstein, Hedges, Higgins, & Rothstein, 2009). Larger prediction interval would indicate that the true correlation varies widely from one study to the next.

Dependence of within-study effects and sensitivity analysis. Each study sample could generate multiple effect sizes concerning the relations between microaggression and adjustment outcomes, and therefore these within-study effects were dependent from each other. For example, studies tended to include multiple adjustment outcomes (e.g., depression, health risk behavior, and self-esteem) using the same sample. Selecting one effect size indicator from each study sample could resolve the dependency issue (Lipsey & Wilson, 2001), but this strategy might introduce biased selection and risk skipping out on valuable information about the association of interest. In a standard univariate meta-analysis, within-study effect sizes would be averaged into one synthetic arithmetic-mean study-level estimate without considering the fact that within-study effects were correlated with each other. This conventional strategy could underestimate the standard error of these estimates and possibly overestimate the precision of study-level effects (Borenstein et al., 2009; Hedges, 2009; Hedges, Tipton, & Johnson, 2010; Marín-Martínez & Sánchez-Meca, 1999). Because the correlational structure underlying within-study effects was unknown like in most studies, we conducted a series of multivariate meta-

analyses with robust variance estimation (RVE) to explore how the summary effect size might be affected when the correlation among within-study effects (ρ) ranged from 0.0 to 1.0 (Hedges et al., 2010). The variance-adjusted composite study-level effects were compared to those from the univariate meta-analysis in a series of sensitivity analyses.

Moderation analyses. We used a mixed-effects model to test the extent to which different participant and study-level variables accounted for the between-study variability in the correlations between microaggression and adjustment outcomes. A mixed-effects model assumes that there are systematic common effects across subgroups of studies (e.g., internalizing versus externalizing problems) and that the effects within subgroups follow a normal distribution (Borenstein et al., 2009; Lipsey & Wilson, 2001). Meta-regression analyses were used to examine the extent to which study methodological and participant factors explained between-study variability. We conducted meta-regression analyses using *metafor* and *clubSandwich* packages in *R*, which computed standard errors using RVE. Given that we were interested in whether each possible moderating variable would explain some portion of the between-study variability, we examined one variable in each meta-regression model.

Additional sensitivity analyses and tests of publication bias. Similar to any research syntheses, the presence of publication bias poses a risk to the validity of our results (Rothstein, 2008). Assuming that statistically significant or larger effect sizes are usually more likely to be published than nonsignificant or smaller effect sizes,⁶ a number of analyses were used to detect publication bias (Borenstein et al., 2009; Greenhouse & Iyengar, 2009; Sutton, 2009).

To the extent that microaggression is a subtle form of discrimination, and often discussed in the context of—or in contrast to—overt discrimination, we only recruited research reports on

⁶ There also have been examples showing that unpublished studies yielded larger effect sizes than published studies (e.g., Pallini et al., 2018).

microaggression to synthesize and evaluate empirical evidence on this topic. Although experimental and correlational research tended to yield effect sizes using different metrics, the exclusion of experimental studies in this meta-analysis would limit our coverage of this synthesis. Including correlational and experimental research would present an opportunity to evaluate the state of the science. We intentionally and systematically collected completed studies across various outlets (e.g., peer-reviewed journals, edited books, theses/dissertations, and unpublished data from expert researchers). We included unpublished data because many individuals who conduct research during graduate training may not be interested in pursuing a research career and submitting their work for publication, and because dissemination of results in peer-reviewed journals can take a long time.

To quantify how our research procedures could affect our results, we used several exploratory data analytic techniques. First, we used moderation analysis to test whether published and unpublished studies differed in their study-level effect sizes. Second, we used a stem-and-leaf plot, funnel plots of precision, and forest plots to visualize the distribution of study effect sizes. The study-level correlations between microaggression and adjustment outcomes were sorted into numeric order. The typical values, shape of the distribution, and any gaps or atypical values were identified in the stem-and-leaf plot (Greenhouse & Iyengar, 2009; Lipsey & Wilson, 2001). The Fisher's z -scores and precision (inverse of the standard errors) for each study sample were displayed in a funnel plot. Symmetry in the funnel plot would signal that sampling error was random, and that larger effect sizes were no more likely to be published than smaller effect sizes. Given the subjective nature of these graphical assessments, we used other statistical tests to evaluate the degree to which this meta-analysis might be affected by publication bias.

Third, we used the fail-safe N approaches to determine how many missing studies would

reduce the overall effect size to a trivial correlation. Both classical and Orwin's methods were implemented to estimate the number of file-drawer studies required to nullify the summary effect between microaggression and adjustment outcomes.

Finally, the Egger's linear regression test and the Duval and Tweedie's trim-and-fill test were used to quantify the possible impact of publication bias on our meta-analytic findings. The Egger's test uses precision to predict the standardized effect size, as reflected by the slope of the regression line on the funnel plot. If the intercept (B_0) of the regression line is not statistically significantly different from zero, the test suggests no publication bias. By contrast, if the regression intercept is statistically significantly different from zero, a positive value indicates that larger studies are associated with larger effects. The Egger's test has been shown to have low power for small or medium-sized meta-analyses; therefore, we considered $p < .10$ per convention (Rothstein, 2008). The trim-and-fill test uses an iterative procedure to estimate effects from hypothetically missing studies in order to create a symmetrical funnel plot and yield a new, adjusted effect size (van Assen, van Aert, & Wicherts, 2015). Using cumulative analyses, we inspected the graphical presentation of study effects to detect possible mechanisms for publication bias. We organized forest plots by sample size, chronological order of publication, and with the one-study-removed method. Corresponding shifts in the effect size estimates would suggest publication bias when small samples and/or more recently published studies were added to the database, and/or when any influential studies were removed from the meta-analysis.

Results

Sample Characteristics

Table 1 summarizes details of each study sample included in this meta-analysis, and Table 2 summarizes descriptive statistics of our study samples. Studies were identified in peer-

reviewed journals, a thesis/dissertation depository, and shared with us during 2010-2018. Our 72 independent study samples yielded a total of 349 coded effect size indicators. On average, each study yielded 4.97 effect size estimates (mode = 2). The present data came from 18,718 participants (N ranged from 51 to 1,207) and included participants with a median M_{age} of 24.73 years. The median percent of women in these samples was 61.5%. Many samples recruited college students (undergraduate or graduate students); this may be a function of convenience sampling, as well as purposive sampling to examine microaggression occurring in higher education (e.g., Clark, Mercer, Zeigler-Hill, & Dufrene, 2012; Torres, Driscoll, & Burrow, 2010). Approximately two-thirds of the study samples were published in peer-reviewed journals. Most studies took place in the U.S. ($k = 62$), and others in India, the Netherlands, South Africa, and Spain ($k = 10$). Racial microaggression was the most frequently studied motivation for subtle discrimination (e.g., Ajayi & Syed, 2014; Hu & Taylor, 2016; Thai, Lyons, Lee, & Iwasaki, 2017; Torres et al., 2010), followed by LGBTQ microaggression (e.g., Kulick, Wernick, Woodford, & Renn, 2017; Swann, Minshew, Newcomb, & Mustanski, 2016; Woodford, Joslin, Pitcher, & Renn, 2017). There were five study samples examining health status microaggression (e.g., Conover, 2015; Perez-Garin, Molero, & E.R. Bos, 2015) and only one examining gender microaggression (Prather, 2015). Finally, three study samples considered microaggression among people with multiple marginalized identities (racial/gender microaggression, Lewis & Neville, 2015; racial/LGBTQ microaggression, Balsam et al., 2011 and Thomas, 2015).

Weighted Mean Correlation

Figure 3 shows the univariate effect size estimates and their 95% confidence intervals of our 72 study samples, as well as the weighted mean correlation between microaggression and adjustment outcomes. Using the standard meta-analysis approach, we found a statistically

significant summary effect, $r = .20$ (95% CI = .16-.23), $z = 12.23$ $p < .001$. Table 3 summarizes these statistics with 3 decimal places. Consistent with our hypothesis, the summary correlation between microaggression and adjustment outcomes fell in the small range. The confidence intervals showed that the true association between microaggression and adjustment outcomes was unlikely to be zero, and the narrow confidence intervals showed precision in this summary effect size estimate.

Between-Study Heterogeneity

As expected, the present data showed a statistically significant and large degree of between-study variability, $Q(71) = 319.86$, $p < .001$, $\tau^2 = .013$, $I^2 = 77.80\%$ (see Table 3). The Q statistic rejected the null hypothesis that all studies shared a common true effect size. The I^2 statistic indicated that a large proportion of the observed variance in the relation between microaggression and adjustment outcomes was due to variances in the true effects rather than sampling error. The prediction interval for the correlation of interest was -.03 to .40: results from 95% of any future studies examining the bivariate associations between microaggression and adjustment outcomes would fall into this range. Given the large prediction interval, it was important to identify for whom and under what condition would microaggression be more and less closely associated with adjustment outcomes.

Sensitivity Analysis for Effect Size (Non)Dependence

Table 3 also summarizes the results from RVE meta-analyses of the present data using ρ ranging from 0.0 to 1.0. As expected, there was evidence that the univariate meta-analysis underestimated the between-study variance. Our sensitivity analyses did not affect the summary correlation between microaggression and adjustment outcomes, and the confidence and prediction intervals around the true effects were similar across plausible values of

intercorrelations among within-study effects. Overall, findings showed that the omnibus weighted mean correlation was not sensitive to the dependence of within-study effects.

Moderator Analyses

Study design. All but two studies used a correlational design to examine the relations between microaggression and adjustment outcomes. Experimental studies manipulated participants' exposure to microaggression in the laboratory to examine its effects on self-reported psychological or physiological responses (Prather, 2015; Wilson, 2014). Experimental studies tended to examine event-specific consequences of microaggression (i.e., immediate responses to the treatment conditions), whereas correlational studies tended to examine global consequences (i.e., overall psychological or physical health outcomes; see Sellers & Shelton, 2003). Our analysis did not reveal a statistically significant effect size difference between experimental and correlational studies ($Q = 1.15, p = .28$). Furthermore, the summary effect and its confidence intervals did not differ when we constrained our analysis to correlational studies only ($k = 70$). Furthermore, to the extent that historical and sociopolitical contexts, and attitudes toward various marginalized groups can differ across countries, we limited our analysis to include only U.S. studies ($k = 62$) and found very similar results, $r = .19$ (95% CI = .15-.22), $z = 10.69, p < .001$, $Q(61) = 301.36, I^2 = 79.76\%$, prediction intervals ranged from -.05 to .40. In sum, the weighted mean correlation between microaggression and adjustment outcomes did not differ by research design; thus, we conducted subsequent analyses using all 72 study samples.

Adjustment outcomes. To evaluate whether the associations of interest differed by adjustment outcomes, we calculated the weighted mean correlations separately (see Table 4). Microaggression was statistically significantly correlated with all psychological adjustment but not physical adjustment. Higher levels of microaggression were associated with greater

internalizing problems (e.g., depression and anxiety; $k = 44$), externalizing problems/health risk behaviors (e.g., alcohol use, smoking, gambling; $k = 8$), self-reported stress/negative affect (e.g., psychological distress, anger; $k = 32$), as well as lower levels of positive affect/adjustment (e.g., self-esteem, subjective well-being; $k = 29$). Microaggression was not associated with physical symptoms (e.g., self-reported somatization, heart rate; $k = 14$). Our univariate moderation analysis showed marginally significant effect size differences across adjustment outcomes. Consistent with our hypothesis, the average association between microaggression and adjustment outcomes was the largest for internalizing problems, and the smallest for physical symptoms and externalizing problems/health risk behaviors.

Social groups, social levels, and microaggression categories in our integrated cube model. Table 5 summarizes separate meta-analyses by social groups, social levels at which microaggression takes place, and categories of microaggression. With the exception for gender microaggression, racial, LGBTQ, health status, racial/LGBTQ, and racial/gender microaggressions were all statistically significantly correlated with adjustment outcomes. Because racial and LGBTQ microaggressions were the most frequently studied motivations, we constrained our analysis to those 64 study samples and found no statistically significant moderation effect by social group membership ($Q = 2.29, p = .13$).

Most studies considered interpersonal-level microaggression alone ($k = 71$) and only nine studies considered group-level microaggression, thus we conducted separate meta-analyses for interpersonal- and group-level microaggressions. Consistent with our hypothesis, interpersonal microaggression yielded larger effects than group-level microaggression.

With regard to microaggression categories, we coded various examples of microaggression incidents into microinsult, microinvalidation, and microassault based on Sue's

taxonomy (2007). Some measures already contained separate subscales for these categories, whereas others contained subscales that covered multiple examples (e.g., exoticization/assumptions of similarities; Nadal, 2011). In the event that scales measured group-level microaggression or contained multiple examples, we coded those (sub)scales into the overall/unspecified category. The vast majority of study samples included overall microaggression alone ($k = 54$) whereas many others measured multiple categories of microaggression ($k = 17$). To avoid conducting a standard univariate meta-analysis that might be biased by the intercorrelations among within-study effect sizes, and to allow optimal statistical power to consider microaggression category as a moderator, we conducted separate meta-analyses to estimate the summary effects concerning microinsult, microinvalidation, and microassault. Studies that examined microinsult and microinvalidation yielded similar summary effects that were smaller than studies that examined overall/unspecified microaggression. By contrast, microassault yielded the largest summary effects than all other categories of microaggression.

Measurement of microaggression. Table 6 presents a brief narrative review of all measures used to assess microaggression in our meta-analyzed studies. Except for the *Distal and Proximal Environmental Microaggression Scale* assessing LGBTQ microaggression (which showed acceptable internal consistency reliability for research purposes), all established measures showed excellent to adequate reliability (Cronbach's α). There were more measures of racial and LGBTQ microaggressions than other types of microaggressions. In terms of racial microaggression, the most frequently used measures were the original *Racial and Ethnic Microaggressions Scale* (REMS; $k = 12$), the *Inventory of Microaggressions Against Black Individuals* (IMABI; $k = 8$), and the *Racial Microaggressions Scale* (RMAS; $k = 6$). Among

other measures of racial microaggression, the *Perceived Racism Scale for Latinos* (PRSL; $k = 1$), the *Subtle and Blatant Racism Scale for Asian Americans* (SBRA²; $k = 2$), and the *Racism and Life Experiences Scale* (RLES; $k = 1$) contained subscales tapping both subtle and overt discrimination. In terms of LGBTQ microaggression, the most frequently used measures were the *LGBQ Microaggression on Campus Scale* (LGBQMCS; $k = 5$) and the *Homonegative Microaggressions Scale* (HMS; $k = 4$).

To examine whether the choice of measures affected the relations between adjustment outcomes and racial microaggression, and LGBTQ microaggression, we conducted separate meta-regression analyses with RVE correction ($\rho = .70$). In each meta-regression, measures were dummy coded and the most frequently used scale was treated as the reference group. As shown in Table 7, various survey measures did not explain between-study variability in the correlations between adjustment outcomes and racial microaggression ($F = 1.30, p = .31$) and LGBTQ microaggression ($F = .60, p = .58$).

Participant factors. Table 7 also summarizes the meta-regression results concerning moderation by participant factors. Tested as a continuous variable in a meta-regression model, sample mean age did not explain the between-study variations in effect sizes ($b = .002, F = .98, p = .33$). Gender was examined as a continuous variable using study-level percentage of women in a meta-regression model. Percentage of women statistically significantly explained the between-study variability in the effects ($b = -.001, F = 4.54, p = .05$). Each one percent decrease in women in the samples corresponded with an increase in the study-level effect size by approximately .0013 standard unit of correlation, suggesting that the associations between microaggression and adjustment outcomes might be stronger in studies with more men than women. We also explored whether college student status moderated the association between

microaggression and adjustment outcomes. Results did not show that college student status explained between-study variability in the effect size estimates ($F = .05, p = .83$).

Considering racial (or racial/LGBTQ, racial/gender) microaggression in the U.S., many studies contained samples with racially diverse participants ($k = 30$). There were more samples with exclusively Black Americans ($k = 15$), Asian Americans ($k = 9$), and Hispanic Americans ($k = 5$) than Native Americans/American Indians ($k = 1$) or White Americans ($k = 2$). Racial group membership statistically significantly moderated the relation between racial microaggression and adjustment outcomes ($F = 7.33, p = .003$). Compared to White Americans, the correlation effects were larger in studies that focused on Asian Americans, followed by Black and Hispanic Americans. Considering studies that focused on LGBTQ (or racial/LGBTQ) microaggression, there were more studies on cisgender LGB individuals ($k = 10$) than transgender individuals ($k = 3$) and nonspecified LGBTQ individuals ($k = 2$). There was not a statistically significant difference in the relation between LGBTQ microaggression and adjustment outcomes across LGBTQ subgroups ($F = .13, p = .89$).

Exploratory Analyses: Microaggression Versus Overt Discrimination

Quantitative results. Among all study samples that assessed the relations between microaggression and adjustment outcomes, only 12 contained effect size information on the bivariate correlations between overt discrimination and adjustment outcomes. Using this subset of studies, we calculated and compared the weighted mean correlations between adjustment outcomes and microaggression, and between adjustment outcomes and overt discrimination. The summary effect for microaggression was .24 (95% CI = .19-.29), $z = 9.34, p < .001$, whereas the summary effect for overt discrimination was also .24 (95% CI = .18-.30), $z = 7.72, p < .001$. Only two of these research reports ($k = 4$) contained multivariate analyses that estimated the

relations between adjustment outcomes and microaggression when overt discrimination was accounted for (i.e., Lui, unpublished; Yoo, Steger, & Lee, 2010). The dearth of quantitative information did not afford us the opportunity to meta-analyze the associations between microaggression and adjustment outcomes while statistically controlling for overt discrimination. Rather, we conducted a narrative review to explore the distinctive relations between adjustment outcomes and these two types of discrimination experiences.

Narrative review. Seven of these samples considered microaggression and overt discrimination targeting racial minorities whereas another four samples considered microaggression and overt discrimination targeting LGBTQ people. Racial microaggression tended to be statistically significantly correlated with overt racial discrimination (r s ranged from .46 to .81). LGBTQ microaggression also tended to be statistically significantly correlated with overt LGBTQ discrimination (r s ranged from .13 to .65).

Adolescents of color with higher levels of cultural mistrust and preparation for racial bias were found to report greater overt discrimination and microaggression (Ajayi & Syed, 2014). Yoo and colleagues (2010) reported that neither overt nor subtle racism measured by the *Subtle and Blatant Racism Scale for Asian American College Students* predicted depression symptoms or stress when their regression models accounted for racial exclusion and rejection, stigmatization and devaluation, work/school discrimination, and unfair treatment and aggression. Only overt—but not subtle—racism statistically significantly predicted anxiety above and beyond all these other common racial discrimination variables. Controlling for everyday racial discrimination, neither racial microaggression nor overt discrimination subscales measured by the *Black Men's Experiences Scale* (BMES) predicted depression in a sample of low-income or unemployed Black men (Bowleg et al., 2016). Although the study by Donovan and colleagues

(2013) was not included in our meta-analysis because we were unable to obtain relevant effect size information, these researchers found mixed results pertaining to the unique contribution of microaggression to psychological adjustment outcomes over and above overt discrimination: racial microaggression predicted depression, but not anxiety symptoms, above and beyond overt discrimination and social desirability among Black women. Lui (unpublished) found that the incremental validity of racial microaggression over and above overt discrimination varied by racial groups and adjustment outcomes. Among Asian Americans, microaggression statistically significantly predicted psychological distress, alcohol consumption, and alcohol-related problems even after controlling for overt discrimination and individual differences in neuroticism. Among Hispanic Americans, microaggression predicted negative affect above and beyond overt discrimination and neuroticism, but only overt discrimination explained the variance in psychological distress. Among Black Americans, neither microaggression nor overt discrimination predicted psychological distress, negative affect, and alcohol use outcomes once neuroticism was accounted for.

Overall, microaggression was correlated with, but distinct from, overt discrimination. The degree of overlap in these variables' variances differed across samples and measures. In the small number of studies available for a narrative review, (racial) microaggression inconsistently predicted adjustment outcomes over and above overt discrimination.

Narrative Review: Indirect Relations between Microaggressions and Adjustment Outcomes

Consistent with the minority stress theory (Myers et al., 2003) and the conceptualization of the impact of microaggression (Sue, Capodilupo, et al., 2007), 15 correlational studies hypothesized indirect relations linking microaggression and adjustment outcomes via some kinds

of stress- or emotion-related factors.⁷ All of these studies focused on either racial or LGBTQ microaggression. Except for one longitudinal study (Torres et al., 2010), all samples yielded cross-sectional data.

LGBTQ microaggression. Three studies examined the roles of possibly mediating variables linking experiences with LGBTQ microaggression and psychological distress. In a large sample of transgender individuals, Timmins and colleagues (2017) reported statistically significant indirect relations between a latent factor of transphobic prejudice (i.e. microaggression, heterosexist discrimination, and victimization) and psychological distress (i.e., well-being, depression, and anxiety) via rumination, self-stigma, and personal expectations of rejection. Among ethnically diverse sexual minority and gender queer individuals, Deitz (2015) found that LGBTQ microaggression was indirectly related to psychological well-being by way of internalized heterosexism and expectations of rejection. Furthermore, among college students who identified as lesbian, gay, bisexual, and queer, Woodford and colleagues (2014) found that LGBTQ microaggression statistically significantly predicted psychological distress by way of lower levels of self-acceptance.

Racial microaggression. Fifteen correlational study reports hypothesized that racial microaggression would predict adjustment outcomes indirectly. Two studies reported statistically significant indirect associations between racial microaggression and suicidal ideations via depression symptoms among college students of color (e.g., O'Keefe et al., 2014). Specifically, interpersonal and environmental microaggression incidents that implied perceived invisibility and low-achievement/undesirable culture predicted African Americans' suicidal ideation through

⁷ Marks (2015) proposed a model linking psychosocial adversities associated with overt racism and microaggression to psychological distress, and in turn sexual risk behaviors; however, the study did not specifically test an indirect pathway.

their perceived burdensomeness on others (Hollingsworth et al., 2017).

Other studies focused more specifically on self-reported stress symptoms and negative affect as possible mediators linking racial microaggression and adjustment outcomes. Torres and colleagues found that racial microaggression indirectly predicted depression symptoms via traumatic stress among Latinx Americans (2015), and via general perceived stress among African Americans (2010). Examining psychological distress as a possible intervening factor, Lui (unpublished) found that racial microaggression predicted alcohol consumption and related problems among Asian Americans, and negative affect among both Asian and Hispanic Americans. Furthermore, state anger mediated the relations between racial microaggression and somatic symptoms in a sample of Asian and Latinx American adolescents (Huynh, 2012). Among Asian American college students, Jackson (2015) found that people's appraisal of microaggression (i.e., perceived harm or loss) explained the indirect associations between lifetime racial microaggression and depression. Racial microaggression also predicted gambling—but not alcohol use—partially through anxiety symptoms (Jackson, 2015).

Additionally, some studies examined how interpersonal relationships and environmental factors function as a mediator linking microaggression and adjustment outcomes. Among graduate students of ethnic minority and majority statuses, racial microaggression was unrelated to emotional distress via either perceived autonomy or belongingness (Clark et al., 2012). Kim and colleague's study (2016) found support for the indirect pathway linking racial microaggression to psychological well-being via cultural mistrust among Asian American college students. Similarly, school belonging explained the covariance between racial microinvalidation and poor health, happiness, and psychological distress in another sample of Asian American college students (Huynh, unpublished). Among LGBT/two-spirit individuals of

American Indian/Alaska Native backgrounds, Johnson-Jennings et al. (2014) reported that racial microaggression predicted bodily pain intensity and impairments, and in turn smoking status.

Despite the supporting evidence on possible mechanisms that link racial and LGBTQ microaggressions and adjustment outcomes via proximal predictors, this body of literature could benefit from clearer differentiations of mediation and moderation models. For example, one study mentioned a “mediation” relation between racial microaggression and psychological adjustment outcomes in the manuscript; yet, the authors specified and tested a moderation model (i.e., whether racial identity intensified the negative relations between microaggression and adjustment outcomes; Nealous, 2016). Research also could be more systematic in theorizing and analyzing indirect associations concerning microaggression and adjustment outcomes. For example, a study reported that racial microaggression predicted well-being by way of deteriorated congregation support, but not church leader support (Kim, 2017). Another study tested indirect relations linking lifetime racial microaggression to adjustment outcomes by way of coping strategies (Jackson, 2015). Theoretically, it was unclear why racial microaggression would *cause* people to receive less care and support from the congregation or employ different types of coping strategies, and in turn lead to poor adjustment outcomes. Furthermore, one study tested a mediation model using path analysis; although the bivariate relation between racial microaggression and perceived stress, and the bivariate relation between perceived stress and depression symptoms were statistically significant, the study did not systematically estimate whether the indirect path was robust (Roberts, 2013).

Publication Bias

Our meta-regression analysis showed that study samples from published research reports yielded larger correlations than those from unpublished sources, $F = 5.27, p = .03$ (see Table 7).

As shown in the stem-and-leaf plot (Figure 4), there was no noticeable gap or atypical value across samples. The study-level correlations generally followed the shape of a normal curve with a slight negative skew. The mode of the correlations fell in the range of .20-.29. As seen in Figure 5, the funnel plot of precision did not show a severe degree of asymmetry. Classic fail-safe N indicated that 2,161 hypothetically missing studies would be needed to nullify our weighted mean correlation estimate to a statistically nonsignificant p -value. The Orwin's fail-safe N indicated that 71 studies with study-level effects of .001 would be needed to reduce the overall weighted mean correlation to .10.

Egger's test ($B_0 = -.06$, $t = .08$, $p = .94$ two-tailed) did not show a statistically significant likelihood of publication bias (using both the conventional $p < .10$ and more rigorous $p < .05$). Whereas no relevant studies might be missing to the right of the computed summary effect size (i.e., larger than $r = .20$), the trim-and-fill test under a random-effects model indicated that 15 studies were potentially missing to the left of this summary effect. The adjusted correlation between microaggression and adjustment outcomes with these imputed studies would result in a slightly smaller summary effect ($r' = .16$; 95% CI = .15-.17). The 72 observed and 15 trimmed-and-then-imputed study-level effects are shown in a new funnel plot (see Figure 6).

Finally, our cumulative analyses did not reveal systematic patterns of effect size suppression. As illustrated in Figure 7, samples with larger sizes are displayed first. With the addition of smaller samples (i.e., decreasing precision of individual studies), the summary effect size was unaffected (see Figure 7). We also did not see shifts in the summary effect size as more recent studies became available in this body of literature (see Figure 8). When we removed each study sample from the meta-analysis, the weighted mean correlation between microaggression and adjustment outcomes did not change (see Figure 9), meaning the summary effect was not

heavily influenced by any specific study.

Collectively, there was no strong evidence for the presence of publication bias in this body of work. We did not identify any specific mechanisms for which smaller (or larger) effects were suppressed. Even though the observed and adjusted summary effects both fell in the small range, it would require many studies to nullify the present results. Lastly, the inclusion of unpublished studies was shown to contribute to a more realistic estimation of the associations between microaggression and adjustment outcomes.

Discussion

This is the first comprehensive research synthesis that examines the associations between racial, LGBTQ, gender, and health status microaggressions and adjustment outcomes. Given the growing interest in academic and public discourse on microaggression, a critical review of this body of work is timely and important. Using both meta-analytic and narrative review approaches, we have quantified the precision and dispersion across available studies examining the relations between microaggression and adjustment outcomes, and have identified methodological and individual factors that explained between-study heterogeneity. Additionally, our narrative reviews contribute to the literature by (1) summarizing the psychometric properties of available measures of microaggression, and (2) highlighting the research progress and gaps with regard to the incremental validity of microaggression over and above overt discrimination, and possible pathways underlying the relations between microaggression and adjustment outcomes. Overall, our meta-analysis shows a statistically significant summary correlation between microaggression and adjustment outcomes. Using Jacob Cohen's benchmarks for interpreting correlation coefficients, our summary effect estimated with all observed studies ($r = .20$) and adjusted effect with observed and imputed studies ($r = .16$) fell in the small range. Our

correlation estimates linking microaggression and adjustment outcomes are comparable to the correlation estimates linking perceived discrimination to health outcomes (Pascoe & Smart Richman, 2009; see Supplemental Table 1 for direct comparisons across adjustment outcomes).

Advancing the Conceptualization of Microaggression

One specific contribution of this study is the proposal of a three-dimensional cube model and the generation of new evidence that helps advance our conceptualization of microaggression. Our cube model highlights the complexity surrounding microaggression, and encourages researchers and practitioners to take into account people's social group membership, social level(s) at which microaggression takes place, and the categories of microaggression. Our findings suggest that with the exception of gender microaggression, racial, LGBTQ, and health status microaggressions targeting marginalized social groups are associated with adjustment outcomes with similar effect sizes.

Revisiting categories of microaggression. Our preliminary results on the associations between adjustment outcomes and microassault, microinsult, and microinvalidation call into question the existing taxonomy of microaggression. By definition, microassault represents the least ambiguous stimuli, whereas microinvalidation represents the most ambiguous stimuli, in intergroup interactions. As suggested in Sue's framework (2007), microaggression incidents are stressful to people of marginalized statuses because of the catch-22 psychological processes and the frequent and cumulative nature of daily hassles. Following this logic, it would be reasonable to expect microinvalidation, followed by microinsult, to be more stressful than microassault. Quite the contrary, microassault shows larger correlations with adjustment outcomes than both microinsult and microinvalidation. A recent experimental study examines how people's emotional reactions differ across microaggression incidents with varying degree of ambiguity.

The study finds that people experience more negative and less positive affect when the incidents seem more blatant (Tao, Owen, & Drinane, 2017). Along with the fact that microassault may be conceptually akin to overt discrimination (Lilienfeld, 2017a), whether microassault belongs in the same nomological network of microaggression remains an open question.

Group variations. Our results also shed light on some nuances by social group memberships. By examining racial differences, we demonstrate that racial minorities of Asian, Black, and Hispanic American backgrounds possibly are more negatively affected by microaggression than their White American and Native American/American Indian counterparts. Within the U.S. context, Blacks have been targets of overt and subtle discrimination for decades. Contrary to our expectations, samples with more men yielded larger effect size estimates than samples with fewer men. This moderation effect does not support the notion that people with intersectional identities and multiple marginal statuses (e.g., racial minority women) would be distinctively affected by microaggression. It is possible that women are more used to gender bias and general discrimination than men, thus experiences of microaggression are less closely linked to women's adjustment outcomes.

Self-Reported Microaggression and the Roles of Negative Emotionality and Attribution

Experiences with discrimination—especially microaggression—are inherently subjective (Major & Dover, 2016). Self-reported microaggression and its consequences could be influenced by a number of factors: accurate accounts of these events, biased attributions, cultural interpretations of social groups' shared experiences, and/or personal, familial, and cultural worldviews (Hobfoll, 1998). Not only do individual differences affect how people respond to microaggression incidents, situational factors and role differences also influence how microaggression is perceived. For example, racial identification has been shown to be associated

with the extent to which people report discrimination, and their levels of distress associated with discriminatory acts (Sellers & Shelton, 2003). Experimental research also has shown that compared to observers of the same interpersonal scenarios, receivers of gender-specific prejudices are more likely to attribute an event as discriminatory and label it as harmful (Swim, Scott, Sechrist, Campbell, & Stangor, 2003).

Negative emotionality. Negative emotionality reflects individual differences in the propensity to perceive the world as distressing and threatening (Watson, Clark, & Harkness, 1994). Our meta-analysis shows that microaggression is more closely linked to internalizing problems, psychological distress and negative affect, and positive adjustment and affect. Many of these studies on internalizing problems have focused on depression symptoms, which are highly associated with maladaptive rumination styles (Aldao, Nolen-Hoeksema, & Schweizer, 2010). Perhaps microaggression experiences elicit depression when people brood over the accumulated experiences of microinsult and microinvalidation. In a Dutch sample of LGBTQ youth, rumination has been shown to connect microaggression to depression symptoms (Kaufman, Baams, & Dubas, 2017). As laid out in Sue's conceptual framework, microaggression carries psychological burden because these experiences can deplete receivers' energy in efforts to make sense of the situational ambiguity and to decipher their responses (Sue, Capodilupo, et al., 2007). Thus, it is conceivable that people would ruminate more in the context of microaggression than overt discrimination, which in turn predict poorer adjustment outcomes.

Our findings about the different summary effects across adjustment outcomes suggest that individual difference variables such as negative emotionality can influence the observed associations between microaggression and adjustment outcomes. Research with gay or bisexual men has shown that neuroticism explains 40% of the variance in the relations between anti-gay

discrimination and depression symptoms; still, there remains a robust correlation between discrimination and health-related outcomes even after controlling for neuroticism and hostility (Huebner, Nemeroff, & Davis, 2005; Lui, unpublished). To the extent that negative emotionality/neuroticism, the proneness to experience negative feelings and stress, is more closely linked to internalizing problems than externalizing problems and health risk behaviors (Castellanos-Ryan et al., 2016), this personality trait may explain microaggression's larger correlations with internalizing problems and stress-related outcomes. People with greater negative emotionality likely are more sensitive to possible incidents of microaggression, and in turn more reactive to the stresses associated with them by way of cognitive vulnerability (Lakdawalla & Hankin, 2008). Reciprocally, cumulated exposure to microaggression also can cause people to develop higher levels of negative emotionality over time (Sutin, Stephan, & Terracciano, 2016).

Attribution. In addition to negative emotionality, attribution style also may function as a risk factor for maladjustment, and account for the relations between microaggression and adjustment outcomes. One main challenge associated with microaggression research and its conceptualization lies in the ambiguity of the deliverers' ill-intent, the disparate perceptions by those of the receiver and observer roles, as well as the uncertainty about the receivers' subjective feelings of harm from the observers' perspective. Racial microaggression has been found to be more closely linked to anxiety for people who have high levels of uncertainty intolerance (Liao, Weng, & West, 2016). Perception of subtle discrimination also has been found to be related to people's attributional complexity (Reid & Foels, 2010). People who have a more complex thinking style are more likely to consider situational cues in attributing the reasons behind other's behaviors than people who have lower levels of attributional complexity (Fletcher,

Danilovics, Fernandez, Peterson, & Reeder, 1986). In our review, no correlational studies have differentiated actual exposure to microaggression, perception of microaggression, and attribution to why any microaggression incidents have occurred. Nevertheless, acknowledging what shapes people's perception and attribution of microaggression can help elucidate the appraisal process that underlies the associations between microaggression and adjustment outcomes.

Microaggression across Cultural Contexts

We found no evidence for cultural differences in the relations between microaggression and adjustment outcomes. The current body of research has derived primarily from the U.S., thus our ability to test cross-national differences was rather limited. In non-U.S. studies, four samples considered racial microaggression, two considered LGBTQ microaggression, and four considered health status microaggression. Previous work has suggested that there are greater cross-cultural similarities in intergroup relationships across gender and age groups because these group stereotypes share universal biological and social foundations (Fiske, 2017). By contrast, there are fewer cross-cultural similarities in intergroup relationships across race, ethnicity, and religions; microaggression targeting racially, ethnically, and religiously marginalized groups are more likely to be influenced by within-country historical and sociocultural contexts (Fiske, 2017). Although our summary effects and moderation results likely are generalizable to countries outside of the U.S., there is a greater need to examine how specific national and cultural contexts—including sociopolitical climate and relationships between the privileged and marginalized groups—can influence the conceptualization of this construct, and its associations with adjustment outcomes.

Challenges with the Present Research Synthesis

Despite the present contributions, results from this research synthesis should be

interpreted in the context of the following constraints and limitations. First, there are substantially fewer studies on gender and health status microaggressions than racial and LGBTQ microaggressions. There also are only two (unpublished) studies utilizing an experimental approach to simulate microaggression experiences in a controlled laboratory setting. As a result, results involving gender and health status microaggressions and experimental data may be less precise than those involving racial and LGBTQ microaggressions and survey data. Similarly, most studies have considered single-bias microaggressions; it remains unclear whether multi-bias microaggressions are experientially different from single-bias microaggressions.

Second, as shown in our narrative review, there are many self-report survey measures of microaggression. Most scale scores have demonstrated high internal consistency reliability, and therefore we do not expect that the observed correlations between microaggression and adjustment outcomes to be underestimated. Still, these questionnaires vary a great deal in their structural and construct validity. Limited by the feasibility of testing the extent to which individual measures contribute to between-study variability in the omnibus summary effect, we are only able to explore whether the most commonly used measures of racial microaggression and LGBTQ microaggression yield different correlations.

Third, study samples included in our meta-analysis tend to be normatively adjusted. Evident in our screening process, quantitative studies using clinical samples tend to focus on the relations between microaggression and therapeutic alliance (Constantine, 2007; Owen et al., 2011). Given that therapeutic alliance is not considered an individual-level psychological outcome, our data do not allow us to examine how microaggression may be associated with adjustment outcomes among people in the clinical setting. Additionally, many studies have examined the frequency that people experience microaggression (Choi, Lewis, Harwood,

Mendenhall, & Hunt, 2017; Lewis & Neville, 2015; Timmins et al., 2017), and in many cases participants have reported relatively low frequencies of microaggression and low levels of adjustment problems. It is unclear whether our findings are generalized to people under heightened distress (e.g., in the clinical setting or in severely disadvantaged situations).

Fourth, our meta-analytic approach has allowed us to estimate effect sizes aggregated at the study/sample level. As in most meta-analyses, these findings may or may not reflect the relations between microaggression and adjustment outcomes experienced by different individuals or subgroups. For example, research has shown that people have different attitudes toward gay men, lesbian women, bisexual individuals, and trans individuals (Gazzola & Morrison, 2014; Vaughn, Teeters, Sadler, & Cronan, 2017). Whereas it is useful to examine the relations between adjustment outcomes and overall LGBTQ microaggression, it is unclear how these associations may play out differently across LGBTQ subgroups and the extent to which these meta-analytic effects can explain individuals' experiences.

Finally, even though unpublished materials—especially grey information—typically represent only a small number of studies in meta-analyses (Bellefontaine & Lee, 2014) and that published research does not always yield larger effect sizes, we sought to include published and unpublished data in this research synthesis. Still, there may be grey materials on this topic not represented in our investigation. Future research syntheses should continue to use a pragmatic approach that supports empirically justified boundaries of a research topic and considers the potentially valuable insight from grey materials (Adams et al., 2017).

Research Gaps and Recommendations for Future Directions

The present findings suggest several critical directions for future research. First, more research is needed to focus on improving the conceptualization and measurement of

microaggression. Typical to many constructs in psychology and social sciences, microaggression represents an open concept with loose boundaries concerning a “nomological network of convergent and discriminant correlates” (Lilienfeld, 2017a, p. 143). To some extent, existing survey questionnaires often contain items that measure everyday unfair treatment and overt discrimination that can be easily attributed to prejudice toward a social group. Some questionnaires also measure minority-focused experiences that may or may not be “aggressive” per se (see Table 6 for sample scale items). As discussed in another narrative review (Wong et al., 2014), it remains an open question as to whether (racial) microassault should be considered a category of microaggression. In our meta-analyses, studies that measured microassault yielded larger correlations than studies that measured microinsult and microinvalidation. Although these differences are very tentative given the small number of samples in each category, they nonetheless call into question the argument that everyday microaggressions are more stressful than overt discrimination.

The word *microaggression* at face value implies an “aggressive” ill-intention that underlies (non)verbal slights and put-downs. At the same time, microaggression has been defined to include conscious or unconscious, sometimes well-intended behaviors. Unlike overt discrimination, however, microaggression poses as an ambiguous stimulus during interpersonal or group-level interactions. The very nature of this ambiguity has made this research program challenging. In a statement addressing the use of racial slurs, for example, the Alliance of Colonial Era Tribes indicated that “degrading an American Indian name or historic tribal reference by using it as an insult is making a racial slur, whether knowingly or unknowingly. The right to determine if it is a slur belongs to those who have been insulted, not the one who made the insult” (ACET, 2017). To what extent is microaggression a matter that lies in the eye of the

beholder, and to what extent does intentionality matter in determining the constitutions of microaggression? The field needs to contend with whether differences exist in the relations between adjustment outcomes and *actual* exposures to microaggression, and between adjustment outcomes and *perceived* microaggression.

Similarly, future research could benefit from better distinctions between interpersonal- and group-level microaggressions. The broader discrimination literature has conceptually distinguished systemic/institutional discrimination from interpersonal discrimination, and has shown their differential relations with mental health outcomes (Gilbert & Zemore, 2016; Williams & Mohammed, 2013). Other research also has suggested that sources of discrimination (e.g., from authority figures, peers, or society at large) can have differential impact on people's adjustment outcomes (Benner & Graham, 2013). Having found a weaker association between group-level microaggression than interpersonal microaggression in this study, more investigations should examine whether slights and derogations manifested in the media or in different cultural institutions should be considered microaggression under the same nomological network. With much of the early research focusing on the nuances of its experiential reality (Sue, 2017), improved conceptualization—and subsequently operationalization—of microaggression can benefit from sophisticated statistical approaches such as factor analyses and differential item functioning.

Second, there should be a greater emphasis to rule out possible extraneous factors in the relations between microaggression and adjustment outcomes, or examine the degree to which microaggression predicts adjustment outcomes while accounting for the influences of individual difference variables. Reactions to microaggression (or any other stressors) inevitably vary by individuals' (Lazarus & Folkman, 1984; Meyer, 2003) prior experiences with discrimination,

personality, and cognitive appraisal, but these factors do not necessarily negate the subjectively stressful nature of microaggression. For instance, negative emotionality has been shown to function as predispositions for psychopathology and health problems (Lakdawalla & Hankin, 2008), yet it has been largely neglected in microaggression research (Huebner et al., 2005; Lilienfeld, 2017a). Additionally, we have yet to see strong and consistent evidence from our narrative reviews that would support the notion that microaggression and overt discrimination predict adjustment outcomes above and beyond each other. With improved conceptualization and operationalization of microaggression, research would have a better chance in differentiating it from overt discrimination, and examining the extent to which microaggression is associated with adjustment outcomes over and above overt discrimination and other minority stressors.

Third, only a handful of cross-sectional studies and one longitudinal study have examined the pathways by which microaggression experiences are associated with psychological adjustment thus far. In addition to some concerns with regard to the differentiations between mediation and moderation models in this body of work, it is important to note that cross-sectional data are limited in their capacity for making reliable conclusions about indirect associations (Lui, 2018; Maxwell & Cole, 2007) linking microaggression and adjustment outcomes. Building on the rich, nuanced findings from qualitative research as well as the conceptual frameworks on microaggression (Sue, 2010) and minority stress (Meyer, 2003), the microaggression literature will continue to benefit from using sophisticated quantitative survey and experimental methods to uncover the mechanisms that link adjustment outcomes to the perceptions of microaggression (Lau & Williams, 2010). For example, research has made strides in elucidating how overt discrimination might affect mental and physical health by way of stress responses and health risk behaviors (Pascoe & Smart Richman, 2009). It is possible that

microaggression is linked to adjustment outcomes through multiple mechanisms as well.

On the one hand, microaggression receivers' emotionality and attribution may affect how they identify and react to ambiguous intergroup interactions. Individual differences in racial vigilance can heighten people's stress responses to situationally induced discrimination (Sawyer, Major, Casad, Townsend, & Mendes, 2012). On the other hand, microaggression may give rise to negative affect and subjective feelings of stress. Feelings of stress may then adversely affect internalizing problems such as depression, and health outcomes such as sleep quality (Huynh, 2012; Huynh & Gillen-O'Neel, 2013), and promote the use of health risk behaviors as maladaptive coping methods (Williams & Mohammed, 2009). Cumulative stresses associated with microaggression also may elicit a sense of burdensomeness (Hollingsworth et al., 2017), yield greater allostatic load among people of minority statuses, and lead to poorer health outcomes (Duru, Harawa, Kermah, & Norris, 2012; Fredriksen-Goldsen et al., 2014; Geronimus, Hicken, Keene, & Bound, 2006). Future research can measure physiological responses to assess how microaggression may burden the allostasis and affect health. Researchers also may examine motives behind health risk behaviors that link microaggression to externalizing problems. Longitudinal studies—including those that use a daily diary approach—will be valuable in teasing out the directions in which microaggression is associated with adjustment outcomes. Building on research that focuses on between-person analyses, studies that focus on within-person change can further elucidate the mechanisms underlying these associations of interest.

Lastly, researchers are encouraged to consider people as active agents who make sense of, and best adjust to, their environments and interpersonal relationships (Fredriksen-Goldsen et al., 2014; Lui & Zamboanga, 2018ab). Individuals vary in their awareness and cognitive appraisals of, responses to, and coping strategies against, microaggression (Sellers & Shelton,

2003). Some people may consider a microinvalidation incident as an attack that contains hidden demeaning messages, others may brush it off as the deliverer's ignorance about minority's lived experiences (Harris, 2008). People's tendencies to recognize microaggression incidents and interpret them as harmful aggression may depend on the centrality of their social identity. For example, affirming to one's ethnic identity, however, has been shown to buffer the associations between discrimination and self-esteem among Mexican Americans (Umaña-Taylor, Wong, Gonzales, & Dumka, 2012). Alternatively, people who carry greater cultural mistrust and have experienced higher levels of discrimination are at greater risk for depression (Ajayi & Syed, 2014). In addition, racial identity has been shown to not only promote Black Americans' anticipation for racial discrimination, but also intensify the negative association between discrimination and depression symptoms (Hoggard, Byrd, & Sellers, 2015; Seaton, Upton, Gilbert, & Volpe, 2014).

Conclusions

In this research synthesis, we proposed a cube model to help conceptualize microaggression in terms of social group memberships, and social levels, and categories. Comparing to previous meta-analyses linking overt discrimination to adjustment outcomes, our results showed similar summary effects linking microaggression to adjustment outcomes. Except for gender microaggression, we found robust correlations linking racial, LGBTQ, and health status microaggressions and psychological adjustment outcomes associated with internalizing and externalizing problems, stress and negative affect, positive adjustment and positive affect. Across categories of microaggression, microassault was more closely associated with adjustment outcomes than microinsult and microinvalidation. Microaggression occurring at the interpersonal level was more strongly correlated with adjustment outcomes than microaggression occurring at

the group levels. Studies with Asian, Black, and Hispanic Americans were found to yield larger effects than studies with White Americans. Results highlighted research gaps pertaining to microaggression's incremental validity above and beyond overt discrimination and negative emotionality in predicting adjustment outcomes. Future investigations should illuminate the pathways by which microaggression may be related to adjustment outcomes, and identify factors that moderate these associations.

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Table 1

Characteristics and Effect Size Information of Study Samples Included in the Meta-Analysis (k = 72)

Study	<i>N</i>	<i>M_{age}</i>	%F	Ctry	Race	LGBTQ	Pub	Design	Social Group	MA Measure	Adjustment Measure	<i>r</i>
Ajayi & Syed (2014)	295	18.02	61.7	USA	M	N/A	Y	C	Racial	IMABI	BSI/SWLS	.16*
Balsam et al. (2011)	297	33.00	50.2	USA	M	LGBTQ	Y	C	Racial/ LGBTQ	LGBT- PCMS	CESD/PSS	.16*
Bowleg et al. (2016)	578	28.83	0.0	USA	B	N/A	Y	C	Racial	BMES	PHQ-9	.23*
Choi et al. (2017)	353	21.00	46.0	USA	A	N/A	Y	C	Racial	RMHES	CESD	.44*
Clark et al. (2012-S1)	87	26.64	84.0	USA	M	N/A	Y	C	Racial	IMABI	BSI	.22*
Clark et al. (2012-S2)	313	26.64	84.0	USA	M	N/A	Y	C	Racial	IMABI	BSI/PSS	.08
Conover (2015)	833	34.30	52.7	USA	M	N/A	N	C	Health status	AMS	CESD/PSS	.26*
Deitz (2015)	233	42.30	48.5	USA	M	LGB	N	C	LGBTQ	HMS	PWBS/ SWLS	.16*
Demianczyk (2015)	418	21.51	69.1	USA	M	N/A	N	C	Racial	REMS	BAI/BDI/ RAPI/ STAXI	.13*
Estrada (2016)	86	38.00	57.0	USA	H	N/A	N	C	Racial	RMAS	PSS/HP	.10
Fay (2015)	243	39.46	100.0	USA	B	N/A	N	C	Racial	IMABI	PHQ-9/ GAD-7	.24*
Garcia (2013)	139	34.47	85.6	USA	M	N/A	N	C	Racial	REMS	RSES	.05
Greenfield (2015)	347	28.45	65.1	USA	NR	N/A	N	C	Racial	MAS	CAGE-AID/ ATLFB	.07
Helm (2013)	234	NR	68.4	USA	B	N/A	N	C	Racial	REMS	BDI/RSES	.25*
Hernandez (2014)	681	20.10	71.7	USA	M	N/A	N	C	Racial	RMAS	BSI/SWLS/ PANAS	-.02
Hollingsworth et al. (2017)	135	19.45	56.3	USA	B	N/A	Y	C	Racial	RMAS	HDSQ-SS	.06
Hu & Taylor (2016)	449	31.97	69.9	USA	M	N/A	Y	C	Racial	RMAS	CESD/PSS	.28*

Study (Cont.)	<i>N</i>	<i>M_{age}</i>	%F	Ctry	Race	LGBTQ	Pub	Design	Social Group	MA Measure	Adjustment Measure	<i>r</i>
Huynh (2012)	360	17.18	57.0	USA	M	N/A	Y	C	Racial	EMA	CESD/PSS/ STAXI/ Physical complaints	.20*
Huynh et al. (unpublished)	280	20.3	63.7	USA	M	N/A	N	C	Racial	EMA	BMI/PMS/ OSDUS/ Happiness	.15*
Jackson (2015)	281	19.43	66.9	USA	A	N/A	N	C	Racial	SABRA ²	DASS/ ASSIST/ CSES/QOL	.20*
Jackson et al. (2011- S1)	170	31.65	13.7	SA	N/A	N/A	Y	C	Racial	SRS	PSI	.24*
Jackson et al. (2011- S2)	71	31.65	13.7	SA	N/A	N/A	Y	C	Racial	SRS	PSI	.28*
Johnson-Jennings et al. (2014)	447	NR	NR	USA	N	N/A	Y	C	Racial	MDS	Smoking/ Pain	.13*
Kaufman et al. (2017- S1)	77	17.61	0.0	NL	N/A	LGB	Y	C	LGBTQ	SOMI	DML	.42*
Kaufman et al. (2017- S2)	190	17.61	100.0	NL	N/A	LGB	Y	C	LGBTQ	SOMI	DML	.32*
Kim (2017)	143	20.12	76.2	USA	M	N/A	Y	C	Racial	REMS	MHI	.24*
Kim et al. (2016)	156	19.61	67.3	USA	A	N/A	Y	C	Racial	REMS	MHI	.28*
Kulick et al. (2017- S1)	111	22.50	45.0	USA	M	LGBTQ	Y	C	LGBTQ	LGBQMCS	PHQ-9	.26*
Kulick et al. (2017- S2)	349	23.09	56.7	USA	W	LGBTQ	Y	C	LGBTQ	LGBQMCS	PHQ-9	.25*
Lanier et al. (2017)	72	12.10	68.1	USA	B	N/A	Y	C	Racial	DLE	CESD/ RSES	.32*
Lewis & Neville (2015)	210	37.69	100.0	USA	B	N/A	Y	C	Racial/ Gender	REMS GRMS	MHI	.25*
Liao et al. (2016)	126	30.20	79.0	USA	B	N/A	Y	C	Racial	IMABI	DASS	.28*

Study (Cont.)	<i>N</i>	<i>M_{age}</i>	%F	Ctry	Race	LGBTQ	Pub	Design	Social Group	MA Measure	Adjustment Measure	<i>r</i>
Lin (2011)	158	23.90	70.3	USA	A	N/A	N	C	Racial	AARMS	SWLS/ PANAS	.13*
Lui (unpublished-S1)	472	22.70	43.4	USA	A	N/A	N	C	Racial	R28REMS	AUDIT/K6/ PHQ-4	.26*
Lui (unpublished-S2)	164	23.00	62.8	USA	B	N/A	N	C	Racial	R28REMS	AUDIT/K6/ PHQ-4	.12
Lui (unpublished-S3)	213	23.00	58.2	USA	H	N/A	N	C	Racial	R28REMS	AUDIT/K6/ PHQ-4	.13
Magallares et al. (2017)	170	46.96	34.7	EG	N/A	N/A	Y	C	Health Status	MSPD	HADS	.37
Magallares et al. (2014)	111	43.99	66.7	EG	N/A	N/A	Y	C	Health Status	MSPD	PANAS/ SF-36	.20*
Magallares et al. (2016)	72	42.73	65.3	EG	N/A	N/A	Y	C	Health Status	MSPD	PANAS	.28*
Marks (2015)	115	20.80	100.0	USA	B	N/A	N	C	Racial	IMABI	DASS/SRS	.24*
Mercer et al. (2011)	385	21.37	83.0	USA	B	N/A	Y	C	Racial	IMABI	PSS/BSI/ PANAS	.24*
Moore (2012)	175	46.00	66.9	USA	H	N/A	N	C	Racial	REMS	BSI/STAI	.33*
Nadal et al. (2014)	506	24.83	74.1	USA	M	N/A	Y	C	Racial	REMS	MHI	-.09*
Nadal et al. (2017)	277	24.8	75.5	USA	M	N/A	Y	C	Racial	REMS	RANDSF	-.04
Nealious (2016)	77	25.00	71.4	USA	B	N/A	N	C	Racial	IMABI	SWLS/ PANAS	.14*
O'Keefe et al. (2014)	405	19.65	61.48	USA	M	N/A	Y	C	Racial	RMAS	CESD/ HDSQ-SS	.17*
Ong et al. (2013)	152	18.14	42.8	USA	A	N/A	Y	C	Racial	Other	PANAS/ Physical symptoms	.32*
Perez-Garin et al. (2015)	213	43.03	40.0	EG	N/A	N/A	Y	C	Health Status	MSPD	PANAS/ SLDS/ PWBS	.16*
Prather (2015)	81	19.63	100.0	USA	M	N/A	N	E	Gender	N/A	PANAS/ HR/BP	.03

Study (Cont.)	<i>N</i>	<i>M_{age}</i>	%F	Ctry	Race	LGBTQ	Pub	Design	Social Group	MA Measure	Adjustment Measure	<i>r</i>
Rivera (2012)	328	30.80	72.9	USA	M	N/A	N	C	Racial	REMS	MHI/SRPH	-.11*
Roberts (2013)	142	19.32	63.0	USA	B	N/A	N	C	Racial	DLE	CESD/PSS	.03
Schaafsma (2011)	320	30.00	52.5	NL	N/A	N/A	Y	C	Racial	Other	SWLS	.12*
Seelman et al. (2017)	497	NR	50.0	USA	M	T	Y	C	LGBTQ	LGBQMCS /Other	RSES	.29*
Sohi & Singh (2015)	214	23.52	50.9	IN	N/A	N/A	Y	C	Racial	RMAS	MHC-SF	.24*
Swann et al. (2016)	363	NR	0.0	USA	M	LGB	Y	C	LGBTQ	SOMI	ASEBA- ASR	.19*
Thai et al. (2017)	87	23.83	59.8	USA	A	N/A	Y	C	Racial	REMS	RSES/CSES	.20
Thomas (2015)	99	33.00	45.5	USA	B	LGB	N	C	Racial/ LGBTQ	LGBT- PCMS	SWLS	.29*
Timmins et al. (2017)	1207	28.50	31.2	USA	M	T	Y	C	LGBTQ	GSMMS	PHQ-9/ GAD-7/ ONS-WB	.35*
Torres & Taknint (2015)	113	34.00	59.3	USA	H	N/A	Y	C	Racial	REMS	PSS/CESD	.34*
Torres et al. (2010)	107	30.44	87.9	USA	B	N/A	Y	C	Racial	Other	CESD/PSS	.34*
Torres et al. (2011)	397	31.20	74.6	USA	H	N/A	Y	C	Racial	PRSL	BSI	.24*
Wegner (2014)	302	30.76	45.0	USA	M	LGB	N	C	LGBTQ	HMS	RSES	.10*
Whicker (2016)	179	34.56	0.0	USA	M	LGB	N	C	LGBTQ	HMS	DASS/ SWLS	.27*
Williams (2014)	268	36.1	75.4	USA	B	N/A	N	C	Racial	REMS	MHI/PHQ-9	.04
Wilson (2014)	51	24.65	52.9	USA	B	N/A	N	E	Racial	N/A	HR/BP	.17
Woodford (2014)	299	24.00	57.2	USA	M	LGB	Y	C	LGBTQ	LGBQMCS	GAD/PSS	.27*
Woodford et al. (2015a)	580	23.00	54.0	USA	M	LGB	Y	C	LGBTQ	LGBQMCS	PHQ-9	.27*
Woodford et al. (2015b)	187	21.00	54.5	USA	M	LGB	Y	C	LGBTQ	EMAS	GAD-7/ RSES	.16*
Woodford et al. (2017)	152	23.00	NR	USA	M	T	Y	C	LGBTQ	EMAS	PHQ-9	-.23*
Wright & Wegner (2012)	120	34.00	44.0	USA	M	LGB	Y	C	LGBTQ	HMS	RSES	.37*

Study (Cont.)	<i>N</i>	<i>M_{age}</i>	%F	Ctry	Race	LGBTQ	Pub	Design	Social Group	MA Measure	Adjustment Measure	<i>r</i>
Yoo et al. (2010-S1)	155	NR	NR	USA	A	N/A	Y	C	Racial	SABRA ²	RSES	.23*
Yoo et al. (2010-S2)	193	20.00	45.6	USA	A	N/A	Y	C	Racial	SABRA ²	DASS	.30*

Note. NR = not reported. N/A = not applicable. %F = percent of women in the sample. **Ctry** = study's country of origin: EG = Spain, IN = India, NL = Netherlands, SA = South Africa, USA = United States. **Race** = racial groups in the sample (only applicable to U.S. studies): A = Asian Americans, B = Black/African Americans, H = Hispanic/Latinx Americans, M = multiple groups or unspecified, N = Native American/American/Indians, W = White/Euro American. **LGBTQ** = sexual orientation or gender identity of participants in the sample: (only applicable to LGBTQ microaggression studies): LGB = cisgender lesbian, gay, or bisexual individuals, T = transgender individuals, LGBTQ = lesbian, gay, bisexual, transgender, or queer individuals. **Pub** = published (Y) or unpublished (N) research data. **Design** = correlational survey (C) or experimental research design (E). **Social Group** = microaggression motivated by gender, health status, LGBTQ, and/or racial biases. **MA Measure** = methods of measuring or manipulating experiences with microaggressions: AMS = *Ableist Microaggressions Scale*; AARMS = *Asian American Racial Microaggressions Scale*; BMES = *Black Men's Experiences Scale*; DLE = *Daily Life Experiences Scale*; EMA = *Ethnic Microaggression Scale*; EMAS = *Distal and Proximal Environmental Microaggression Scale*; GRMS = *Gender Microaggression Scale*; GSMMS = *Gender and Sexual Minority Microaggressions Scale*; HMS = *Homonegative Microaggression Scale*; IMABI = *Inventory of Microaggressions Against Black Individuals*; LGBQMCS = *LGBQ Microaggression on Campus Scale*; LGBT-PCMS = *Lesbian, Gay, Bisexual, Transgender-People of Color Microaggression Scale*; MAS = *Microaggression Scale*; MDS = *Microaggression Distress Scale*; MSPD = *Multidimensional Scale of Perceived Discrimination*; PRSL = *Perceived Racism Scale for Latinos*; REMS = *Racial and Ethnic Microaggression Scale*; RMAS = *Racial Microaggression Scale*; RMHES = *Racial Microaggression in Higher Education Scale*; SABRA² = *Subtle and Blatant Racism Scale for Asian Americans*; SOMI = *Sexual Orientation Microaggression Inventory*; SRS = *Subtle Racism Scale*. **Adjustment Measure**: ATLFB = *Alcohol Timeline Follow-back*; ASEBA-ASR = *Achenbach System of Empirically Based Assessment-Adult Self-Report*; ASSIST = *Alcohol, Smoking and Substance Involvement Screening Test*; AUDIT = *Alcohol Use Disorder Identification Test*; BAI = *Beck Anxiety Inventory*; BDI = *Beck Depression Inventory*; BMI = body mass index; BP = mean arterial pressure; BSI = *Brief Symptom Inventory*; CAGE-AID = *CAGE Adapted to Include Drugs*; CDI = *Children's Depression Inventory*; CESD = *Center for Epidemiologic Studies-Depression Scale*; CSES = *Collective Self-Esteem Scale*; DASS = *Depression Anxiety Stress Scale*; DML = *Depressive Mood List*; HADS = *Hospital Anxiety and Depression Scale*; HDSQ-SS = *Hopelessness Depressive Symptoms Questionnaire-Suicidality Scale*; HP = hypertension ratings; HR = heart rate; HSCL = *Hopkins Symptom Checklist*; K6 = *Kessler Psychological Distress Scale*; MHC-SF = *Mental Health Continuum-Short Form*; MHI = *Mental Health Inventory*; MWA = *Multidimensional Well-being Assessment*; ONS-WB = UK Office of National Statistics Well-Being Measure; OSDUS = *Ontario Student Drug Use Survey*; PANAS = *Positive Affect and Negative Affect Schedule*; PDSQ = *Psychiatric Diagnostic Screening Questionnaire*; PHQ-4/PHQ-9 = *Patient Health Questionnaire*; PMS = *Profile of Mood States*, Anxiety and Depression Subscales; PSI = *Physical Symptoms Inventory*; PSS = *Perceived Stress Scale*; PSS-SR = *Post-Traumatic Stress Disorder Symptom Scale-Self Report*; PWBS = *Psychological Well-being Scale*; QOL = *World Health Organization Quality of Life Scale*; RAND-SF =

RAND Short Form Health Survey; RAPI = Rutgers Alcohol Problem Index; RSES = Rosenberg Self-Esteem Scale; SF-36 = Short Form-36; SLDS = Satisfaction with Life Domains Scale; SRS = Sexual Risk Survey; SRPH = self-reported global physical health; STAI = State-Trait Anxiety Inventory; STAXI = State-Trait Anger Expression Inventory; SWLS = Satisfaction With Life Scale. r = study-level univariate correlation between microaggression and adjustment outcomes.

** $p < .05$*

Table 2

Summary of Descriptive Information about the 72 Study Samples Included in the Meta-Analysis

<i>k</i>	72
<i>N</i> (Range)	18,718 (51-1,207)
Median <i>M</i> _{age}	24.73 years
Median % Women	61.5%
Data from Published Sources	61.9%
Countries	United States (<i>k</i> = 62) Spain (<i>k</i> = 4) Netherlands (<i>k</i> = 3) South Africa (<i>k</i> = 2) India (<i>k</i> = 1)
Social Groups Being Affected by Microaggression ¹	Racial (<i>k</i> = 49) LGBTQ (<i>k</i> = 15) Health Status (<i>k</i> = 5) Gender (<i>k</i> = 1) Racial/LGBTQ (<i>k</i> = 2) Racial/Gender (<i>k</i> = 1)

Note: *k* = number of studies. *N* = sample size.

¹ One study produced effect size indicators for both racial microaggression and racial/LGBTQ microaggression.

Table 3

Effect Size Estimates from Standard and Robust Variance Estimation Meta-Analyses (k = 72)

	Standard	RVE					
		$\rho = 0.0$	$\rho = 0.2$	$\rho = 0.4$	$\rho = 0.6$	$\rho = 0.8$	$\rho = 1.0$
<i>r</i>	.195*	.196*	.196*	.197*	.197*	.197*	.197*
95% CI	[.164, .225]	[.166, .226]	[.166, .226]	[.167, .226]	[.166, .227]	[.166, .227]	[.166, .228]
<i>z</i>	12.234	12.400	12.557	12.574	12.418	12.314	12.261
τ^2	.013	.016	.015	.014	.014	.014	.014
<i>Q</i>	319.858	1431.722	668.246	500.928	421.967	374.495	333.466
I^2	77.803	95.041	89.375	85.826	83.174	81.041	78.708
Prediction Interval	[-.032, .403]	[-.056, .424]	[-.047, .418]	[-.038, .412]	[-.039, .412]	[-.039, .412]	[-.039, .412]

Note: RVE = robust variance estimation. 95% CI = 95% confidence intervals around the weighted mean correlation. All analyses were computed in a random-effects model.

* $p < .05$

Table 4

Weighted Mean Correlations between Microaggressions and Five Adjustment Outcomes

Adjustment Outcome	<i>k</i>	<i>r</i>	95% CI	<i>z</i>	<i>p</i>	<i>Q(df)</i>	τ^2	I^2
Internalizing Problems	44	.240*	[.202, .278]	11.847	< .001	209.970*(43)	.014	79.521
Externalizing Problems/Health Risk Behaviors	8	.123*	[.054, .190]	3.488	< .001	64.926 (7)	.006	64.926
(Di)Stress/Negative Affect	32	.187*	[.113, .258]	4.931	< .001	408.133*(31)	.042	92.404
Positive Adjustment/Positive Affect	29	-.171*	[-.208, -.133]	8.706	< .001	71.087*(28)	.006	60.612
Physical Symptoms	14	.087	[-.087, .175]	1.912	.056	74.684*(13)	.022	82.593

Note. Weighted mean correlations computed using standard univariate meta-analysis. *k* = number of study samples. 95% CI = 95% confidence intervals around the weighted mean correlation effect. One study produced effect size indicators for both racial microaggression and racial/LGBTQ microaggression. Moderation analyses using a mixed-effects model showed that the difference in effect size estimates across adjustment outcomes was marginally significant ($Q = 10.60, p = .06$).

* $p < .05$

Table 5

Weighted Mean Correlations between Microaggression and Adjustment Outcomes Across Social Groups, Social Levels, and Categories of Microaggression

	<i>k</i>	Mean <i>r</i>	95% CI	<i>z</i>	<i>p</i>	<i>Q(df)</i>	τ^2	I^2
Social Group								
Racial	49	.175*	[.138, .212]	9.117	< .001	202.376*(48)	.013	76.282
LGBTQ	15	.232*	[.167, .295]	6.855	< .001	70.612*(14)	.013	80.173
Health Status	5	.252*	[.186, .316]	7.274	< .001	7.274 (4)	.002	24.808
Gender	1	.029	[-.227, .282]	.221	.825	--	--	--
Racial/LGBTQ Intersection	2	.230*	[.134, .321]	4.615	< .001	.492 (1)	--	--
Racial/Gender Intersection	1	.248*	[.117, .371]	3.651	< .001	--	--	--
Social Level								
Interpersonal	71	.199*	[.168, .230]	12.280	< .001	322.854* (70)	.014	78.318
Group	9	.155*	[.062, .246]	3.245	.001	44.430* (8)	.016	81.994
Microaggression Category								
Overall/Unspecified	66	.198*	[.166, .231]	11.692	< .001	323.949* (65)	.015	79.935
Microinsult	18	.141*	[.092, .190]	5.529	< .001	41.812* (17)	.006	59.342
Microinvalidation	13	.142*	[.075, .207]	4.127	< .001	43.943* (12)	.011	72.692
Microassault	2	.231*	[.156, .303]	5.925	< .001	.784 (1)	--	--

Note. Weighted mean correlations computed using standard univariate meta-analysis. *K* = number of study samples. 95% CI = 95% confidence intervals around the weighted mean correlation effect. Moderation analyses using a mixed-effects model showed statistically nonsignificant differences in the summary effects across social groups ($Q = 9.98, p = .13$), social levels ($Q = 1.09, p = .58$), and categories of microaggression ($Q = 4.40, p = .11$).

* $p < .05$

Table 6

Summary of Basic Psychometric Properties of Survey Measures Used to Assess Racial, LGBTQ, Health Status, Racial/LGBTQ, Racial/Gender, and General Microaggressions

Measure and Description	Cronbach's α	Evidence for Validity
Racial Microaggression		
<i>Asian American Racial Microaggressions Scale</i> (AARMS; Lin, 2011): The AARMS is a 49-item scale specifically constructed to measure the experiences of racial microaggression among Asian Americans. Items include, "You were not given proper credit for something that you did/said," and "Someone assumed that you are smart." Respondents are prompted to rate the frequency of encountering each of the incidents on a scale of 1 (<i>never</i>) to 6 (<i>almost all the time</i>).	.90	A principal axis factoring analysis yielded a four-factor solution: Asian Inferior Status, Assumptions of Model Minority, Alien in Own Land, and Aberrant Sexual Stereotypes. The AARMS scores were positively correlated with the Asian American Racism Related Stress Inventory (AARRSI) scales ($r = .23$ to $.64$), and demonstrated criterion-related validity ($r = .14$ to $.35$ with negative affect).
<i>Black Men's Experiences Scale</i> (BMES; Bowleg et al., 2016): The BMES is a 12-item scale that assesses Black men's racial experiences. Three items measure racial microaggression, including "How often have White people seemed uncomfortable when they pass you on the street?" Respondents rate the frequency of having the respective experiences on a scale of 1 (<i>never</i>) to 6 (<i>always</i>).	.80	Exploratory and confirmatory factor analyses supported a three-factor solution underlying the scale scores: Overt Discrimination, Positives, and Microaggressions. The microaggressions subscale scores showed construct validity with racial discrimination ($r = .46$), and criterion-related validity with depression ($r = .23$).
<i>Daily Life Experiences Subscale, Racism and Life Experiences Scale</i> (Harrell, 1994): The DLE consists of 20 items that assess the frequency of which people experience racial microaggression. Sample items include "being treated rudely or disrespectfully" and "being mistaken for someone else of your same race." Items are rated on a scale of 0 (<i>never</i>) to 5 (<i>once a week or more</i>) over the past year.	.94-.97	Not available; the DLE has been used in many studies.

Measure and Description	Cronbach's α	Evidence for Validity
<p><i>Ethnic Microaggression Scale</i> (EMA; Huynh, 2011; Huynh, 2012): The EMA is a 12-item measure that assesses people's experiences with various microaggression events in the past year. Items include "Someone tells you that racism does not exist anymore" and "You are asked 'what you are.'" Items are rated on a scale of 0 (<i>0 times/never</i>) to 5 (<i>almost everyday/all the time</i>) for frequency, and 1 (<i>this event made me feel good</i>) to 5 (<i>this event upset me extremely</i>) for the degree of which microaggression bothered respondents.</p>	<p>.66-.71 (ED) .71-.76 (DRR) .71-.72 (NT)</p>	<p>Confirmatory factor analysis supported a three-factor solution: Emphasis on Differences (ED), Denial of Racial Reality (DRR), and Negative Treatment (NT). The frequency of microaggression was correlated with the frequency of peer and adult discrimination. The EMA scales demonstrated concurrent validity, as evident by their correlations with depressive ($r = .24$) and somatic symptoms ($r = .28$).</p>
<p><i>Inventory of Microaggressions Against Black Individuals</i> (IMABI; Mercer et al., 2011): The IMABI is a 14-item scale of racial microaggression developed specifically for Black Americans. The scale is intended to capture both microinsults and microinvalidations. The IMABI assesses seven aspects of racial microaggression: Ascription of Intelligence, Assumption of Inferior Status, Assumption of Criminality, Assumed Superiority of White Cultural Values, Assumed Universality of the Ethnic Minority Experience, Denial of Individual Racism/Colorblindness, Myth of Meritocracy. Sample items include "I was treated like I was of inferior status because of my racial/ethnic background" and "Someone reacted negatively to the way I dress because of my racial/ethnic background." Respondents rate the frequency of which they experience each incident over the past year on a scale of 0 (<i>this has never happened to me</i>) to 4 (<i>this event happened and I was extremely upset</i>).</p>	<p>.94</p>	<p>Factor analysis supported that a single factor underlies the IMABI scores. The IMABI was correlated with perceived stress ($r = .38$), negative affect ($r = .21$), racial identity public regard ($r = .29$), and global psychological symptoms index ($r = .30$).</p>

Measure and Description	Cronbach's α	Evidence for Validity
Microaggressions Scale (MAS; Chae & Walters, 2009): The MAS is a 10-item scale that measures both overt and subtle discriminations in the past year, and has been developed for Native Americans specifically. The MAS is a modified version of the Microaggressions Distress Scale (MDS; unpublished).	.97	Not available
Perceived Racism Scale for Latinos (PRSL; Collado-Proctor, 1999): The PRSL is a 34-item scale that assesses frequency of overt discrimination events experienced in the work-academic places, and public and healthcare settings. The PRSL also includes a subscale measuring specifically covert discrimination. The scale was modified from the original PRS (McNeilly et al., 1996) to capture Latino/as' experiences. Items are rated on a scale of 1 (<i>never</i>) to 5 (<i>several times a day</i>).	.92	Not available; the PRSL has been used validly in other studies (e.g., Torres, Driscoll, & Voell, 2012).
Racial and Ethnic Microaggression Scale (REMS; Nadal, 2011): The REMS is a 45-item scale that measures people's experiences with racial microaggression over the past six months. Items include "Someone assumed that I would have a lower education because of my race," "I was told that I should not complain about race," and "I observe that someone of my race portrayed positively in movies." Items are rated on a scale of 1 (<i>I did not experience this event in the past six months</i>) to 5 (<i>I experienced this event 10 or more times in the past six months</i>). There is a shortened, revised version of the REMS. The <i>Revised 28-Item Racial and Ethnic Microaggressions Scale</i> (R28REMS; Forrest-Bank, Jenson, & Treccarin, 2015) has been validated across Asian, Black, and Hispanic groups with similar factor structure and psychometric properties as the original REMS.	.93 .85-.89 (subscales)	Principal components analysis and confirmatory factor analysis (with less than adequate fit) showed that the scale items could be reduced to six components: Assumption of Inferiority (AI), Second-class Citizen/Assumptions of Criminality (SC/AC), Microinvalidations (MI), Exoticization/Assumptions of Similarity (E/AS), Environmental Microaggressions (EM), and Workplace and School Microaggressions (WSM). The REMS was positively correlated with the DLE ($r = .70$).

Measure and Description	Cronbach's α	Evidence for Validity
<p>Racial Microaggressions Scale (RMAS; Torres-Harding et al., 2012): The RMAS is a 32-item scale that measures people of color's experiences with racial microaggression. Sample items include "I am mistaken for being a service worker or lower-status worker simply because of my race," "Other people treat me like a criminal because of my race," and "Other people ask me where I am from, suggesting that I don't belong." Items are rated on a scale of 0 (<i>never</i>) to 3 (<i>often/frequently</i>) for frequency, and 0 (<i>not at all</i>) to 3 (<i>high level</i>) for how stressful, upsetting, or bothersome the incident is.</p>	.95 .78-.89 (subscales)	Exploratory and confirmatory factor analyses showed that a six-factor solution was adequate: Invisibility, Criminality, Low-Achieving/Undesirable Culture, Sexualization, Foreigner/Not Belonging, and Environmental Invalidations. The RMAS demonstrated construct validity ($r = .15$ to $.69$ with Schedule of Racist Events subscales).
<p>Racial Microaggression in Higher Education Scale (RMHES): The RMHES is a 14-item scale that measures the frequency of racial microaggression experiences among people in a higher education setting (Choi et al., 2017). Items include "I have experienced someone making offensive jokes to me on this campus because of my race." Respondents rate the frequency to which they experience these incidents in the past year on a scale from 0 (<i>never</i>) to 5 (<i>once a week or more</i>).</p>	.92	Not available
<p>Subtle and Blatant Racism Scale for Asian Americans (SABR-A2; Yoo et al., 2010): The SABR-A² is a 10-item scale that measures perception of blatant and subtle racism among Asian Americans. Items tapping subtle racism include "In America, I am viewed with suspicion because I'm Asian" and "In America, I am faced with barriers in society because I'm Asian." Items are rated on a scale of 1 (<i>almost never</i>) to 5 (<i>almost always</i>).</p>	.83	Principal axis factor analysis and confirmatory factor analysis suggested a two-factor solution: Blatant Racism and Subtle Racism. Subtle Racism demonstrated construct validity ($r = .53$ to $.72$ with the Brief Perceived Ethnic Discrimination Questionnaire-Community Version), and criterion-related validity ($r = -.23$ with self-esteem and $r = .26$ to $.33$ for internalizing symptoms).

Measure and Description	Cronbach's α	Evidence for Validity
<p><i>Subtle Racism Scale</i> (SRS; Duckitt, 1991): The SRS is a 10-item scale that measures modern racist attitudes toward Blacks held by South African Whites. Items tapping subtle racism include “The large scale extension of political rights to blacks will inevitably lead to chaos” and “Although black living conditions should be improved, it is crucial for the stable development of the country that whites retain political control.” There is no specific information about how items are rated. The SRS also has a 4-item abbreviated version.</p>	.91 .86 (4-item version)	Exploratory factor analysis showed that the 10-item scale data were unidimensional. The SRS demonstrated criterion-related validity ($r = .83$ with interracial behavioral intent and $r = .80$ with social distance with other group members).
<p>LGBTQ Microaggression</p>		
<p><i>Distal and Proximal Environmental Microaggression Scale</i> (EMAS; Woodford, Pacey, et al., 2015): The EMAS is a scale designed to measure exposure to environmental microaggression based on sexual orientation biases. Sample items include “I’ve heard politicians oppose equal rights and protections for LGBQ people” and “I saw people holding signs with religiously based anti-LGBQ messages.” Items are rated on a scale from 0 (<i>never</i>) to 5 (<i>very frequently</i>) over the past year.</p>	.68 (D) .65 (P)	The EMAS reportedly was shown to consist of two factors in an exploratory factor analysis: Distal Environmental Microaggressions (D) and Proximal Environmental Microaggressions (P).
<p><i>Gender and Sexual Minority Microaggressions Scale</i> (GSMMS; Timmins et al., 2017): The GSMMS is a 12-item scale developed to measure experiences of anti-LGBT+ microaggression. Items include, “People suggesting that your sexual orientation or gender identity is just a phase, a choice or not real.” Participants respond to each of the items by rating the frequency of the incident occurring in the past year, on a scale of <i>never to all of the time</i>.</p>	.85	The GSMMS has been reported to demonstrate convergent and discriminant validity: it correlates with lifetime victimization ($r = .42$) and experiences with harassment, rejection, and discrimination in the past year ($r = .65$) because of LGBTQ biases.

Measure and Description	Cronbach's α	Evidence for Validity
<p><i>Homonegative Microaggressions Scale</i> (HMS; Wright & Wegner, 2012): The HMS is a 45-item scale that measures the experiences of microaggressions among lesbian, gay, or bisexual people over the past six months, and throughout the lifetime. Sample items are “How often have people changed the subject/topic when reference to your sexual orientation comes up?” and “How often has someone done something else to make you feel like your values or communication style are wrong or bad?” Items are rated on a scale from <i>hardly ever/never</i> to <i>consistently</i> for frequency, and from <i>not at all</i> to <i>a great deal</i> for the extent to which homonegative microaggression incidents have bothered them.</p>	<p>.94-.96 (frequency) .96 (impact)</p>	<p>Current and past frequency scores, and the impact scores of the HMS demonstrated construct validity. HMS was correlated with experiences of gay and lesbian oppression ($r = .60$ to $.75$), perceived prejudice ($r = .46$ to $.56$) and perceived discrimination ($r = .39$ to $.52$). The HMS also demonstrated criterion-related validity as evident by its correlations with self-esteem and negative feelings toward LGB identity.</p>
<p><i>LGBQ Microaggressions on Campus Scale</i> (LGBQMCS; Woodford, Chonody, et al., 2015): The LGBQMCS is a 45-item scale developed to measure microinvalidations, microinsults/microassaults, and environmental microaggression experienced by college students of lesbian, gay, bisexual, and queer identities. Items include, “Someone said or implied that all LGBQ people have the same experiences,” “People have said that being lesbian, gay, bisexual, or queer is a sin,” and “I heard someone say ‘that’s so gay’ to describe something as negative, stupid, or uncool.” Scale items are rated on a scale of 0 (<i>never</i>) to 5 (<i>very frequently</i>) over the past year.</p>	<p>.94 (IM) .81 (EM)</p>	<p>Initial principal components analysis and principal axis factor analysis did not support the three-factor solution. A confirmatory factor analysis suggested that a two-factor solution that consisted of Interpersonal Microaggression (IM) and Environmental Microaggression (EM). The LGBQMCS demonstrated construct validity, evident by its correlations with sexual orientation victimizations ($r = .13$ to $.56$) and low levels of social acceptance on campus ($r = -.09$ to $-.10$). The LGBQMCS also showed adequate criterion-related validity ($r = .25$ to $.29$ with depression symptoms).</p>

Measure and Description	Cronbach's α	Evidence for Validity
<p><i>Sexual Orientation Microaggression Inventory</i> (SOMI; Swann et al., 2016): The SOMI is a 26-item scale that measures the microaggression experiences among LGBTQ people. Sample items are “You were told, ‘you’re not really gay’ and “A family member expressed disappointment about you being gay, lesbian, or bisexual.” Items are rated on a scale from <i>not at all</i> to <i>about every day</i>.</p>	NR	<p>Exploratory factor analyses suggested a four-factor solution, but the confirmatory factor analysis showed that a bifactor structure was the best fitting model. Analyses indicated that the general factor but not the specific factors reliably predicted the item indicators. The SOMI showed convergent and discriminant validity, and demonstrated both criterion-related validity with internalizing symptoms both concurrently and predictively. Finally, SOMI showed incremental validity over and above LGBT victimization when predicting internalizing symptoms.</p>
<p>Health Status</p>		
<p><i>Ableist Microaggressions Scale</i> (AMS; Conover, 2015): The AMS is a 20-item measure constructed to measure people’s lifetime experiences with microaggression based on disability. Items include “People don’t see me as a whole person because I have a disability,” and “People ask me about my disability at inappropriate times or places.” Items are rated from 0 (<i>never</i>) to 5 (<i>very frequently</i>).</p>	.92	<p>Exploratory and confirmatory factor analyses yielded a four-factor solution: Helplessness, Minimization, Denial of Personhood, and Otherization. The AMS showed criterion-related validity, evident by its correlations with perceived stress ($r = .23$) and depression symptoms ($r = .28$).</p>
<p>Racial/LGBTQ</p>		
<p><i>LGBT People of Color Microaggressions Scale</i> (LGBT-PCMS; Balsam et al., 2011): The LGBT-PCMS is an 18-item scale measuring microaggression associated with both racism and heterosexism that are unique to the experiences of LGBT people of color (POC). To examine both frequency and perceived distress, items are rated on a scale of 0 (<i>did not happen/not applicable to me</i>) to 5 (<i>it happened and it bothered me extremely</i>).</p>	.92	<p>Principal components analysis suggested three components: LGBT Racism, POC Heterosexism, and LGBT Relationship Racism. The LGBT-PCMS was correlated with stigma sensitivity, internalized homonegativity, superiority, and outness ($r = .03$ to $.42$), and LGBT discrimination ($r = .20$ to $.45$). The scale scores also showed criterion-related validity, evident by associations with depression ($r = .08$ to $.24$) and perceived stress ($r = .06$ to $.22$).</p>

Measure and Description	Cronbach's α	Evidence for Validity
Racial/Gender		
<p><i>Gendered Racial Microaggression Scale</i> (GRMS; Lewis & Neville, 2015): The GRMS is a 25-item scale that measures both the frequency of microaggression based on sexist biases toward Black women, and people's stress appraisal in the context of these microaggression experiences. Sample items are, "Unattractive because of size of butt," "My comments have been ignored," and "Someone assumed I was sassy and straightforward," and "Someone has told me to calm down." Items are rated on a scale of 0 (<i>never</i>) to 5 (<i>once a week or more</i>) for frequency in their life time, and from 0 (<i>not at all stressful</i>) to 5 (<i>extremely stressful</i>) for stressfulness.</p>	.92-.93 (total) .74-.88 (subscales)	An exploratory factor analysis showed a four-factor solution: Assumptions of Beauty and Sexual Objectification, Silenced and Marginalized, Strong Black Woman, and Angry Black Woman. The GRMS demonstrated construct validity by correlating with both REMS scores and scores from the Schedule of Sexist Events ($r = -.04$ to $.64$). The GRMS also showed criterion-related validity associating with mental health outcomes ($r = .15$ to $.32$).
General Microaggression		
<p><i>Multidimensional Scale of Perceived Discrimination</i> (MSPD; Molero et al., 2013): The MSPD is a 20-item scale that measures perceived discrimination across different marginalized and stigmatized groups in Spain. Sample items tapping subtle discrimination include "Spanish society mistrusts _____ (marginalized group membership)" and "Even though there is no express[ed] rejection, people treat me differently when they see I am _____." Items are rated on a 5-point Likert scale indicating respondents' degree of agreement. The MSPD was validated in five distinct stigmatized groups, including Latin American immigrants in Spain, Romanian immigrants in Spain, people with HIV, gay men, and lesbian women.</p>	.79 (SGD) .84 (SID)	Confirmatory factor analysis supported a four-factor structure for the MSPD: Subtle Group Discrimination (SGD), Subtle Individual Discrimination (SID), Blatant Group Discrimination (BGD), and Blatant Individual Discrimination (BID). The SGD and SID subscales demonstrated construct validity with stigma consciousness ($r = .49$ to $.55$), and showed criterion-related validity, evident by their associations with affect balance ($r = -.14$ to $-.22$) and self-acceptance ($r = -.10$ to $-.20$).

Table 7

Summary of Meta-Regression Analyses in the Associations between Microaggression and Adjustment Outcomes

Categorical Moderator	<i>k</i>	<i>b/r</i>	<i>SE</i>	<i>p</i>	<i>F(df)</i>
Racial Microaggression Measure	49				1.300 (15)
REMS (Reference)	12	.115/.115*	.049	.044	
IMABI	8	.081/.196	.054	.158	
RMAS	6	.025/.140	.064	.709	
Other	23	.089/.204	.023	.108	
LGBTQ Microaggression Measure	15				.598 (7.3)
LGBQMCS (Reference)	5	.269/.269*	.01	< .001	
HMS	4	-.051/.218	.060	.423	
Other	6	-.049/.220	.061	.443	
College Student Status	72				.048 (52.7)
No (Reference)	45	.188/.188*	.021	< .001	
Yes	27	.006/.194	.028	.828	
U.S. Race Group¹	59				7.33* (10.4)
White American (Reference)	2	.191/.191	.064	.106	
Asian American	9	.062/.253	.069	.432	
Black American	15	.031/.222	.067	.687	
Hispanic American	5	.026/.218	.082	.763	
Native American/American Indian	1	-.066/.125	.064	.417	
Multiple (Reference)	30	-.042/.150	.068	.599	
LGBTQ Group²	15				.127 (3.32)
LGB (Reference)	10	.250/.250*	.028	< .001	
LGB/T	2	-.015/.235	.034	.681	
Transgender	3	-.065/.185	.154	.699	
Publication Status	72				5.270* (50.3)
Published (Reference)	46	.216/.216*	.020	< .001	
Unpublished	26	-.0642/.149*	.028	.026	
Continuous Moderator	<i>k</i>	<i>b</i>	<i>SE</i>	<i>p</i>	<i>F(df)</i>
Mean Age	68	.002	.002	.374	.958 (24)
% Women	69	-.001*	< .001	.047	4.500* (19.2)

Note. *b* = intercept for the reference group or slope for comparison groups in meta-regression models. *r* = weighted mean correlation for each group. HMS = *Homonegative Microaggression Scale*; IMABI = *Inventory of Microaggressions Against Black Individuals*; LGBQMCS = *LGBQ Microaggression on Campus Scale*; REMS = *Racial and Ethnic Microaggression Scale*; RMAS = *Racial Microaggression Scale*. Racial microaggression measure was tested as a moderator among studies examining the association between racial microaggression and adjustment outcomes only. LGBTQ microaggression measure was tested as a moderator among studies examining the association between LGBTQ microaggression and adjustment outcomes only.

¹ Race was tested as a moderator among U.S. studies examining racial, racial/LGBTQ, and racial/gender microaggressions only.

² LGBTQ group was tested as a moderator among studies examining LGBTQ and racial/LGBTQ microaggressions only.

**p* < .05

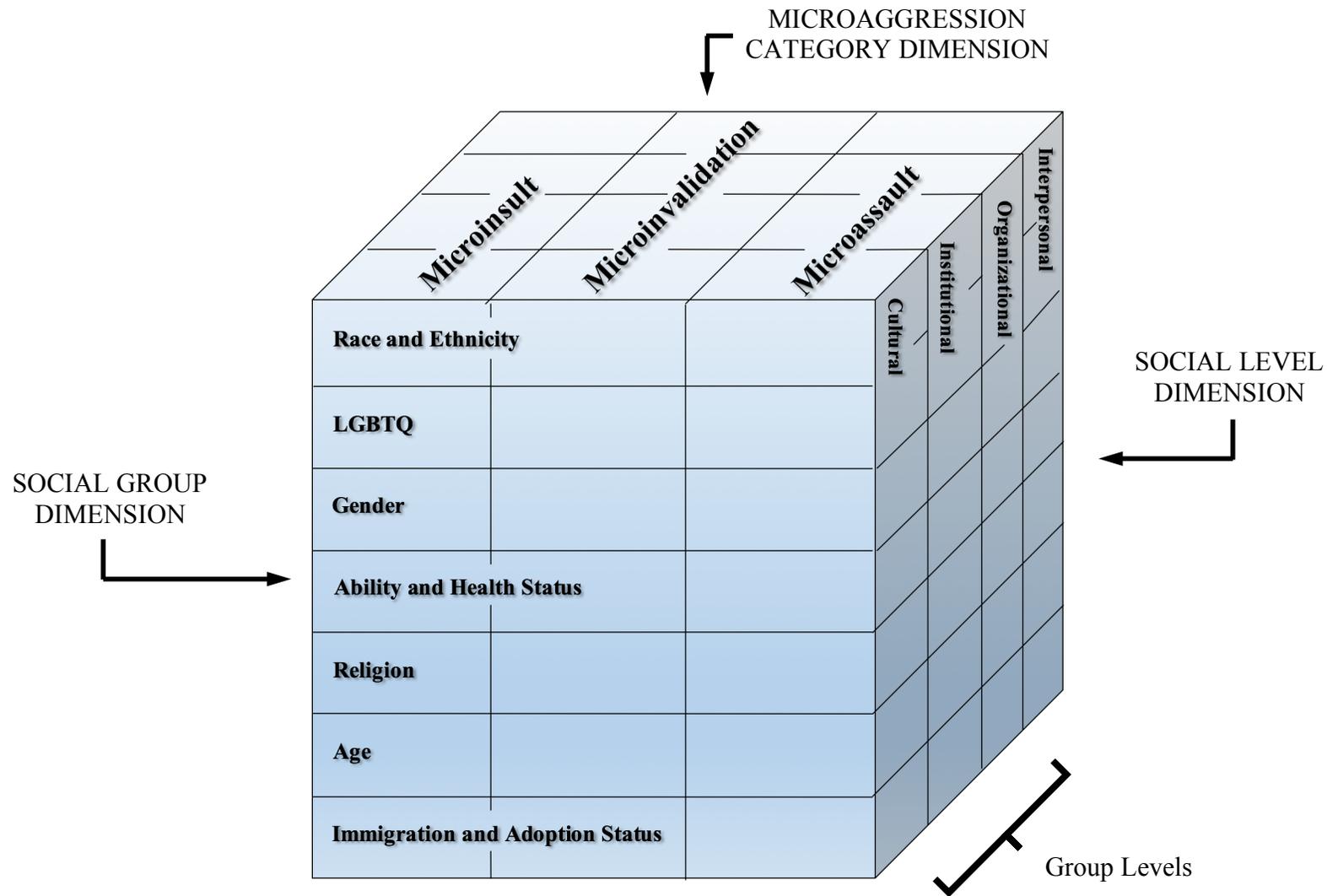


Figure 1. A cube showing the three orthogonal dimensions of microaggression manifestations: social group membership, category, and social level. Per Sue’s taxonomy, microaggression categories include microinsult, microinvalidation, and microassault, although microassault may be a domain of overt discrimination. Group membership includes, but is not limited to, these seven social identities.

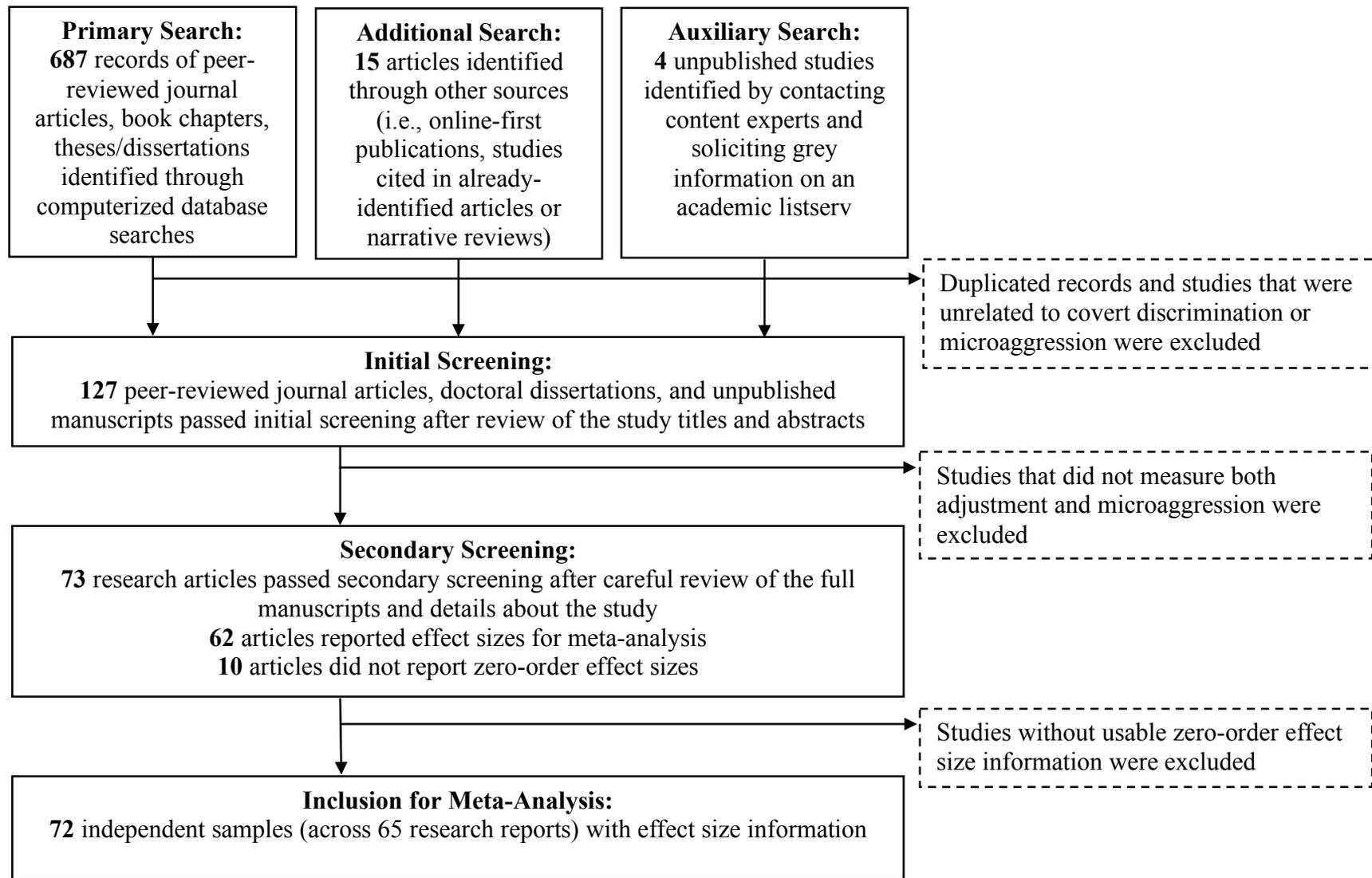


Figure 2. PRISMA flowchart summarizing the processes involved in literature search, screening, and inclusion to the present research synthesis and meta-analysis.

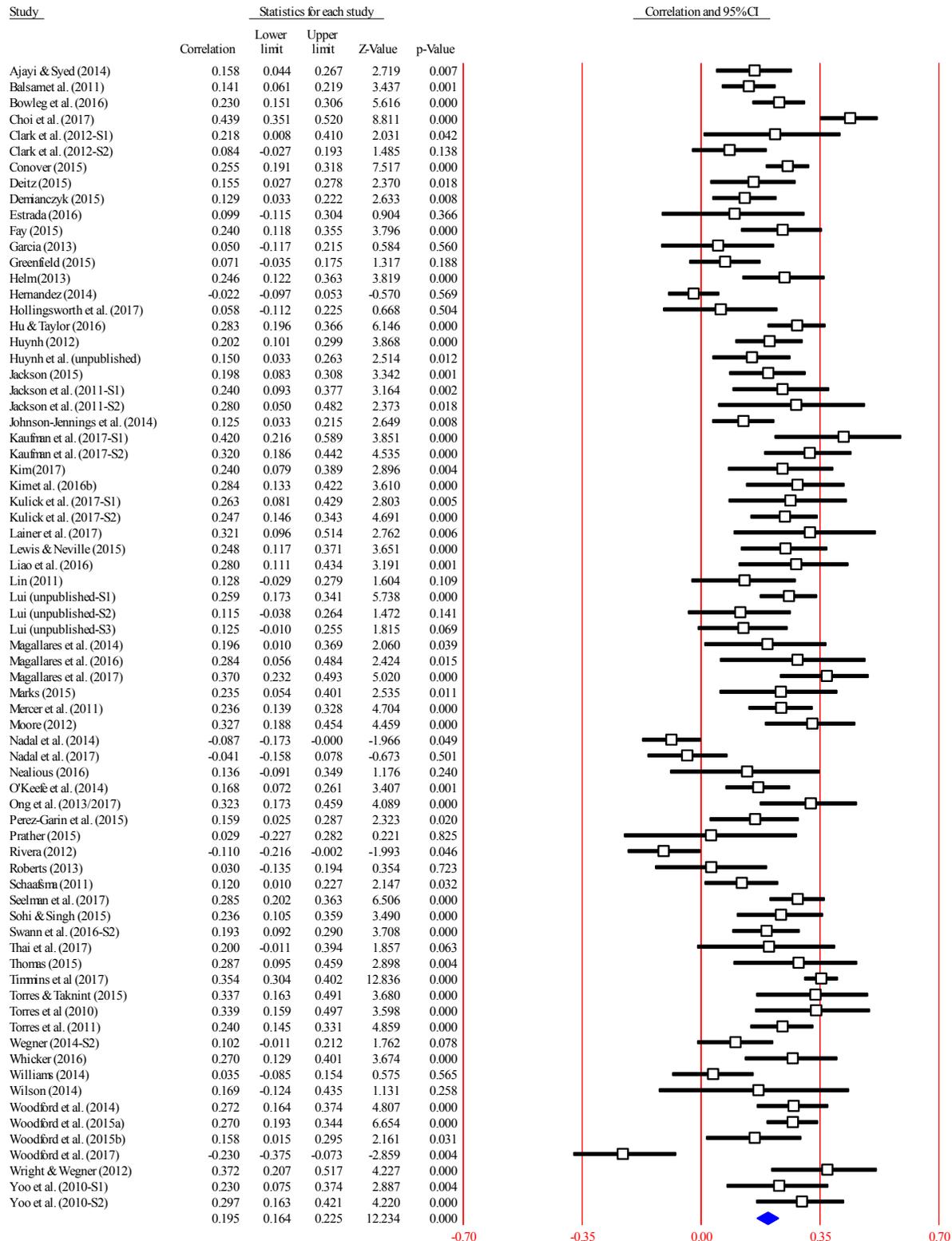


Figure 3. Forest plot summarizing the mean study-level correlations (Pearson’s r) between microaggression and adjustment outcomes and their 95% confidence intervals ($k = 72$). Squares represent effect size estimates from individual study samples, and the diamond represents the weighted mean effect size estimated in a random-effects model.

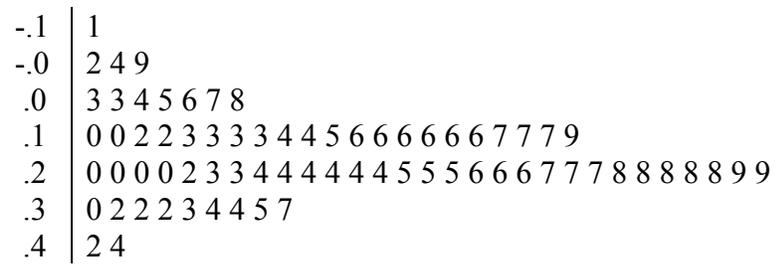


Figure 4. Stem-and-leaf plot of univariate correlation effect size estimates across 72 study samples.

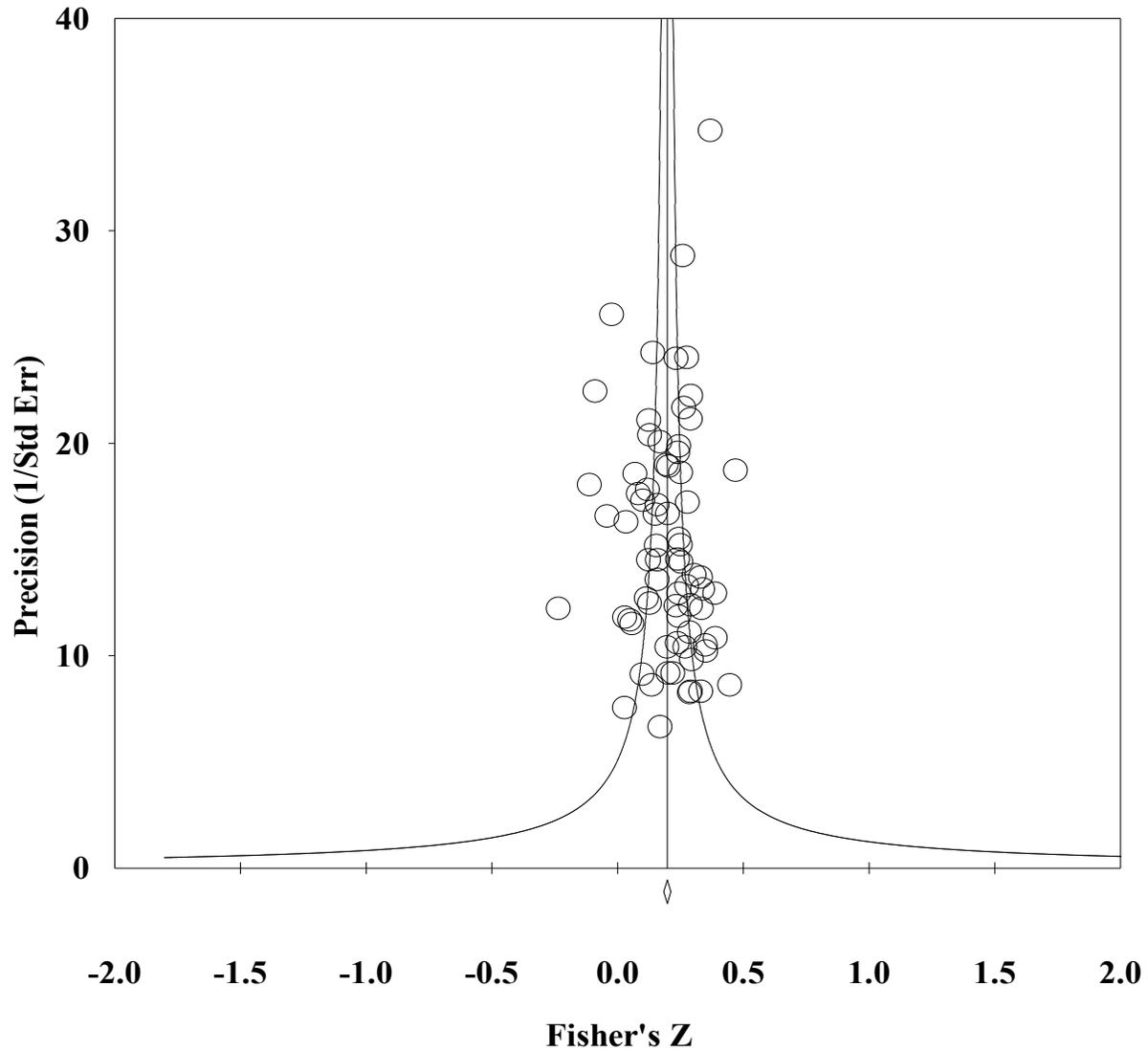


Figure 5. Funnel plot showing the precision of the associations between microaggression and adjustment outcomes using all 72 studies included in this meta-analysis.

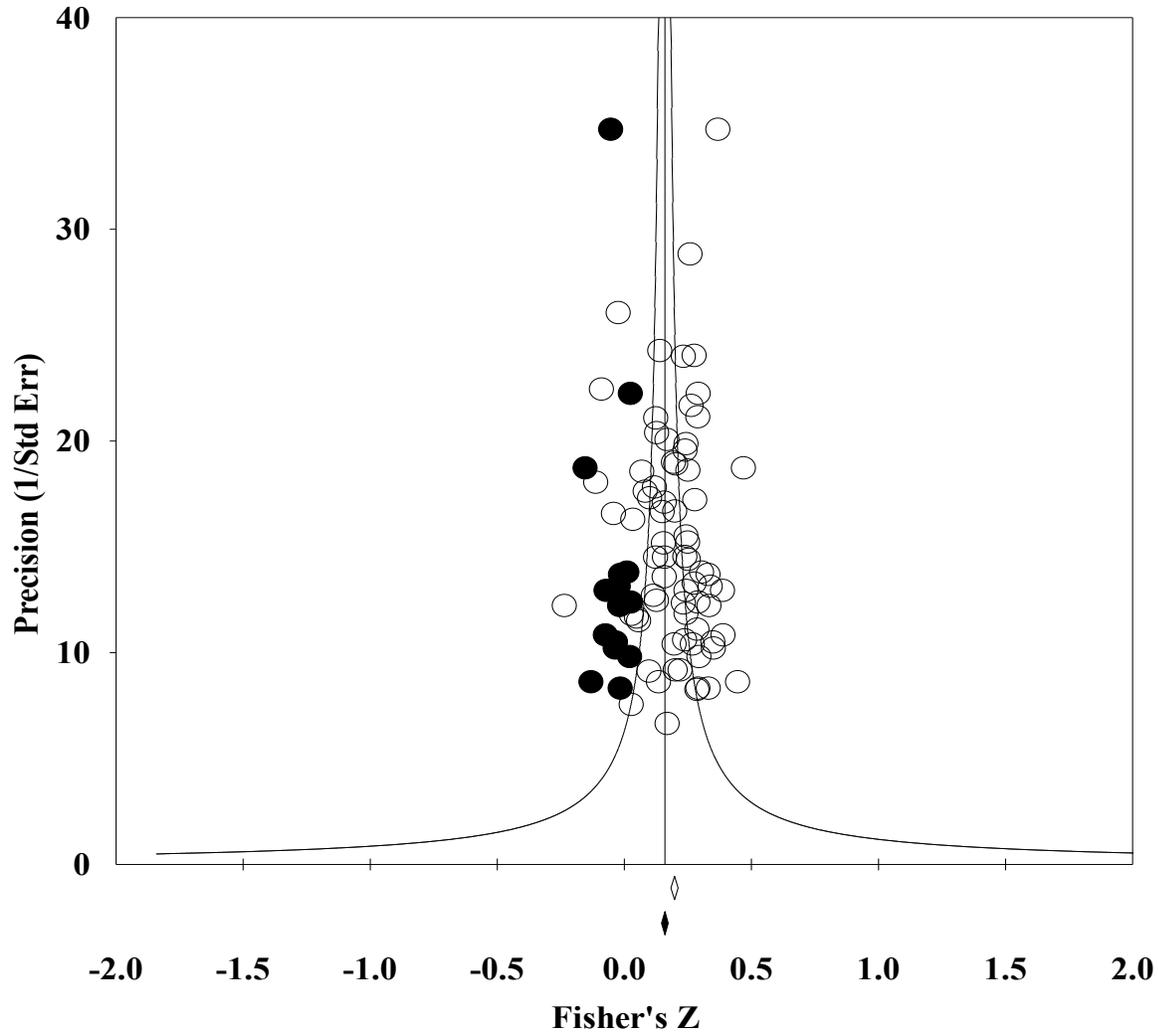


Figure 6. Funnel plot of precision showing both observed and imputed studies on the associations between microaggression and adjustment outcomes to illustrate the possible impact of publication bias. Open circles indicate the 72 observed studies in this meta-analysis, and the open diamond represents the observed correlation estimate. Filled circles represent 15 imputed studies, and the filled diamond represents the adjusted correlation estimate should the meta-analysis include these imputed studies.

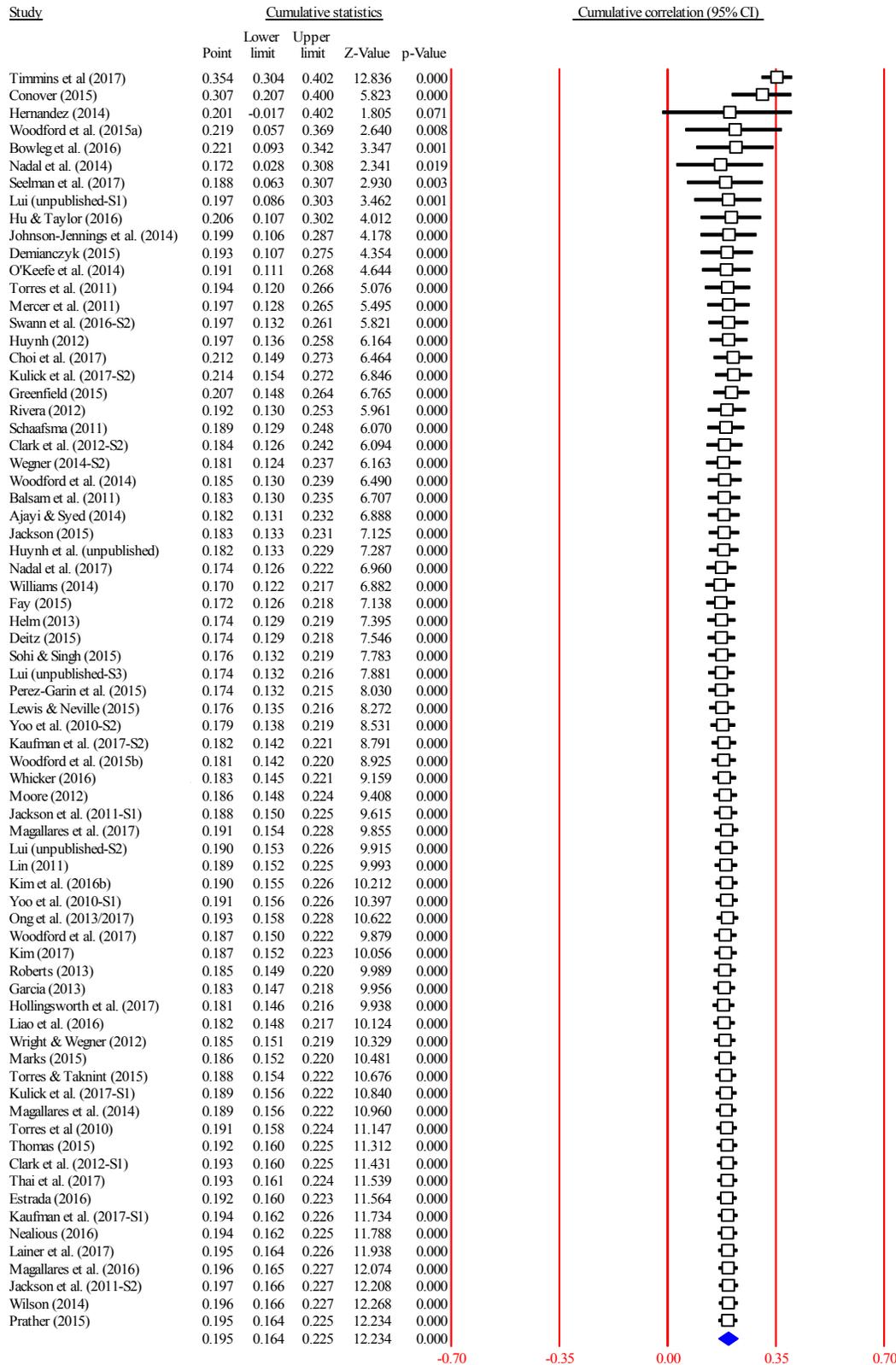


Figure 7. Cumulative forest plot summarizing the associations between microaggression and adjustment outcomes, in which study samples are displayed by descending sample sizes (i.e., most precise to least precise) to illustrate the potential impact of publication bias.

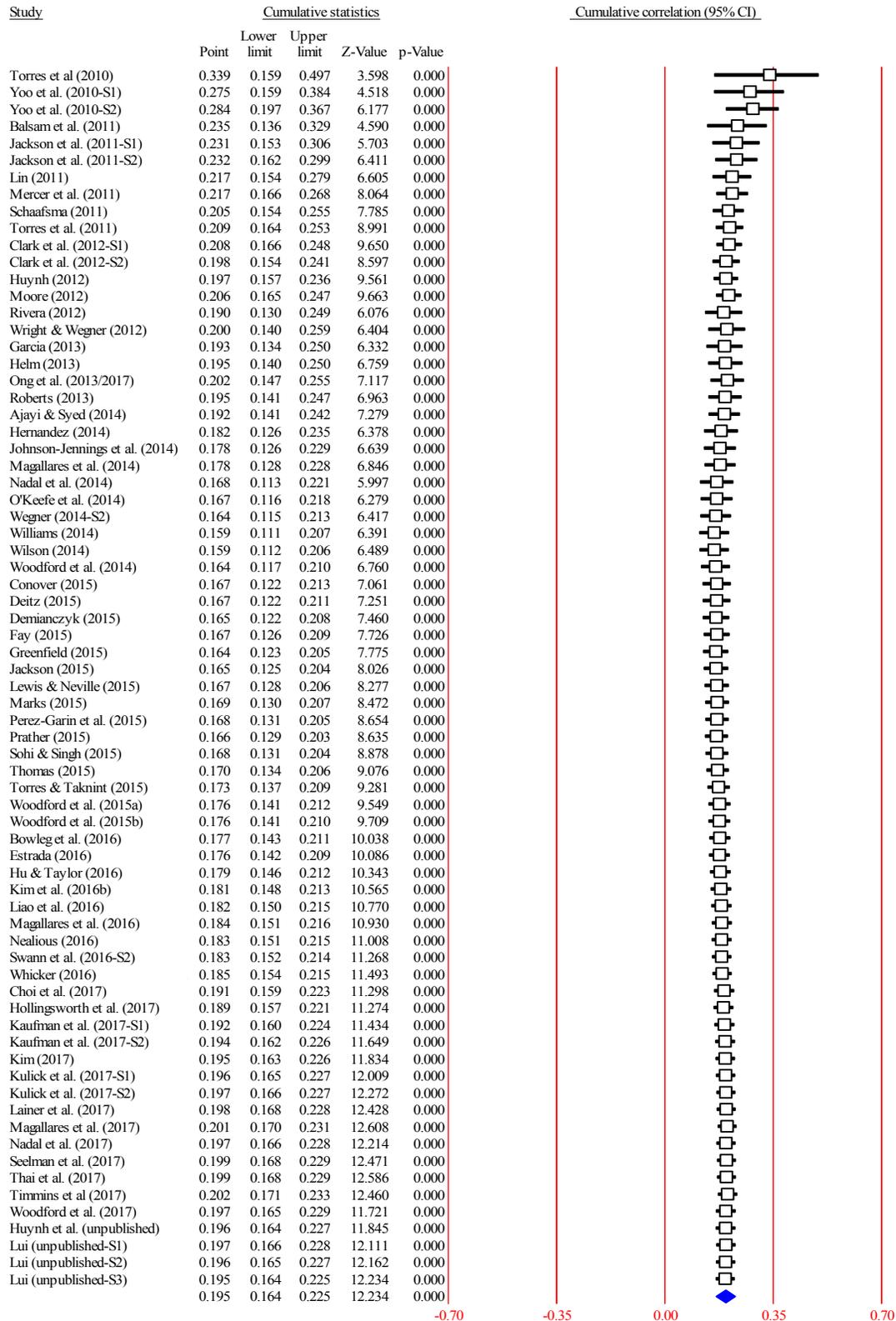


Figure 8. Cumulative forest plot summarizing the associations between microaggression and adjustment outcomes, in which study samples are displayed by years of publication (i.e., least recent to most recent) to illustrate the potential impact of publication bias over time.

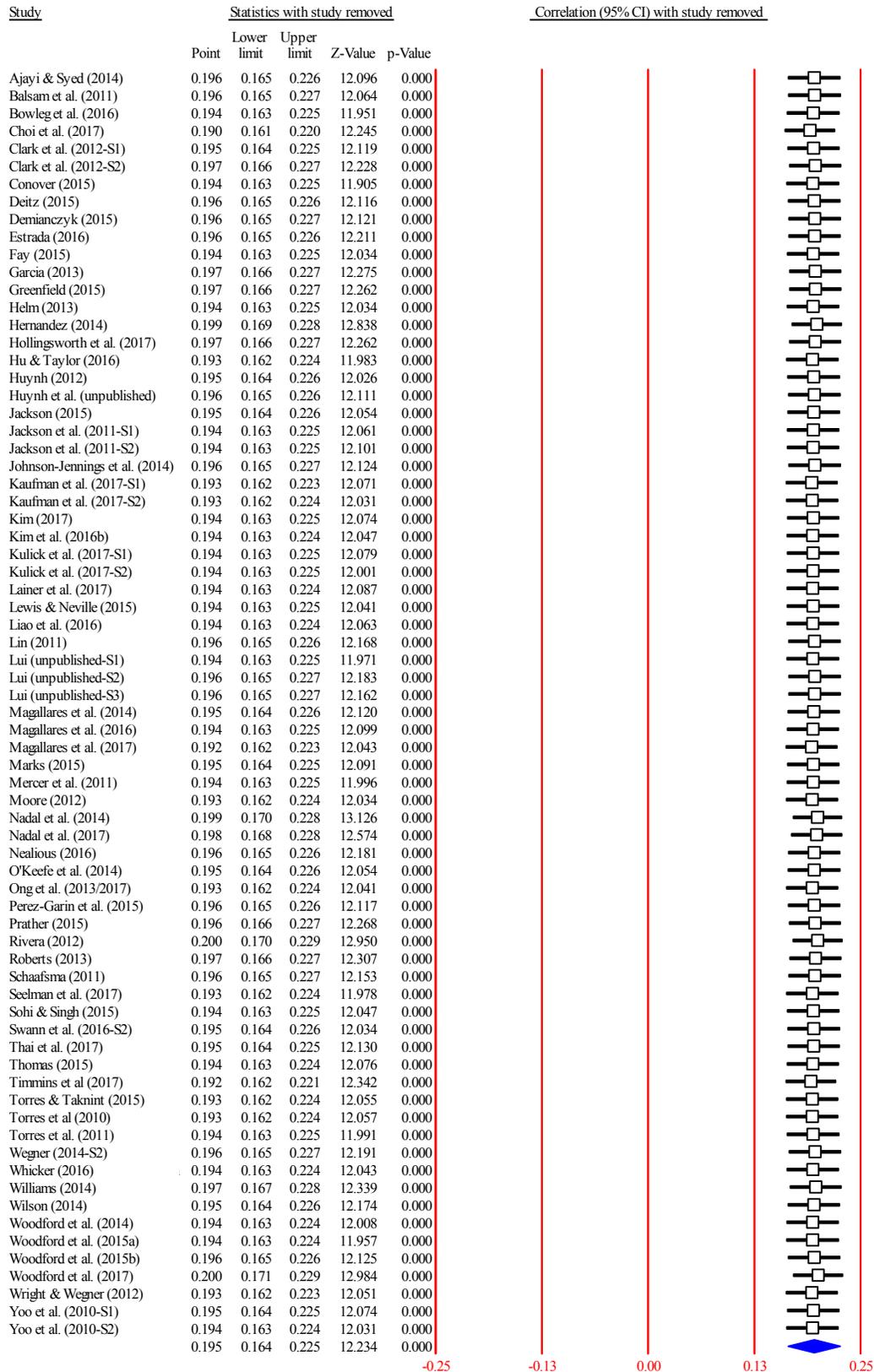


Figure 9. One-study-removed forest plot indicating the change in the weighted mean correlation estimate with each respective study being left out of the database for meta-analysis.

MICROAGGRESSION AND ADJUSTMENT OUTCOMES

Supplemental Table 1

Univariate Weighted Mean Correlations Between Adjustment Outcomes and Microaggression, and (Overt) Discrimination

Outcome	Microaggression (The present study)		Discrimination (Pascoe & Smart Richman, 2009)	
	Mean <i>r</i>	95% CI	Mean <i>r</i>	95% CI
Internalizing Problems/Positive Adjustment and Affect	.17-.24	[.13, .28]	.16	[.12, .20]
Physical Health	.09	[-.09, .18]	.13	[.10, .16]
Stress Response/Negative Affect	.19	[.11, .26]	.11	[.05, .18]
Externalizing Problems/Health Risk Behaviors	.12	[.05, .19]	.18	[.15, .21]

Note. Effect sizes are presented in the same directions across two meta-analyses, so that greater microaggression or discrimination is associated with higher levels of psychological maladjustment and health problems.