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Development of the nonbinary gender microaggressions (NBGM) scale

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ABSTRACT

Background: While research pertaining to nonbinary microaggressions has become increasingly comprehensive in recent years, a measure specifically assessing this construct does not yet exist.

Aims: The purpose of the present research was to develop and validate the Nonbinary Gender Microaggressions (NBGM) scale, which will allow future researchers to quantitatively examine nonbinary individuals' experiences of microaggressions.

Methods and Results: In Study 1 ($n=5$), interviews with nonbinary individuals were conducted to explore their microaggressive experiences. The results of this study, as well as findings from previous qualitative research, were used to generate an initial pool of 92 items. In Study 2 ($n=158$), a principal component analysis, which was used for item reduction, resulted in the retention of 41 items. In Studies 3 ($n=151$) and 4 ($n=266$), an exploratory factor analysis yielded a 23-item 5-factor solution (i.e., Negation of Identity [6 items], Inauthenticity [6 items], Deadnaming [4 items], Trans Exclusion [3 items], and Misuse of Gendered Terminology [4 items]), and a confirmatory factor analysis found that this solution demonstrates adequate model fit. Evidence of the measure's scale score reliability, convergent validity, and incremental validity also were provided.

Discussion: These findings indicate that, overall, the NBGM scale is a psychometrically sound measure of nonbinary individuals' experiences of microaggressions. As such, this measure can be utilized by future researchers and clinicians to better understand nonbinary individuals' microaggressive experiences.

KEYWORDS

Nonbinary; transgender; microaggressions; prejudice; scale development

Research involving prejudice and discrimination toward transgender¹ individuals has typically focused on blatant forms of discrimination (Nadal, 2013). Over the last decade, however, some researchers have shifted their emphasis to more subtle forms of discrimination, such as microaggressions. Microaggressions are verbal, nonverbal, or environmental insults that intentionally or unintentionally communicate derogatory or hostile messages to members of marginalized groups (Sue et al., 2007). There are three forms of microaggressions that transgender individuals may encounter: (1) microassaults (i.e., overt and deliberate statements or behaviors targeting one's gender identity; e.g., refusing to use a transgender person's correct pronouns); (2) microinsults (i.e., verbal or nonverbal slights or insults that unintentionally demean a person based on their gender identity; e.g., asking a transgender person about their genitalia); and (3)

microinvalidations (i.e., messages that dismiss or erase the thoughts, feelings, or oppressive experiences of transgender individuals; e.g., denying that transnegativity exists; Nadal et al., 2016; Sue et al., 2007). Notably, these subtle forms of discrimination occur more frequently than do blatant forms of discrimination (McCabe et al., 2013; Yost & Gilmore, 2011) and are associated with numerous mental health decrements in their targets, such as increased levels of anxiety, depression, psychological distress, and suicidality (Lui & Quezada, 2019; Parr & Howe, 2019; Salim et al., 2019; Woodford et al., 2014). Given such findings, it is imperative that researchers have access to appropriate tools to examine this construct.

Several researchers (e.g., Chang & Chung, 2015; Fisher et al., 2019; Nadal et al., 2016) have noted that, to date, little attention in the area of transgender microaggressions has been directed

to nonbinary gender individuals, or those who do not exclusively endorse a binary gender identity (i.e., man, woman; Matsuno & Budge, 2017).² This omission is surprising, as researchers have found that nonbinary individuals experience poorer mental health than both their cisgender and binary transgender counterparts (James et al., 2016; Lefevor et al., 2019; Reisner & Hughto, 2019), which may be due, in part, to their frequent microaggressive experiences (Pulice-Farrow et al., 2017). However, at present, a measure specifically assessing nonbinary microaggressions does not exist, which makes quantitative investigations into this construct and its correlates difficult. The purpose of the current studies is to address this gap by outlining the development and preliminary validation of a nonbinary microaggressions measure, which will enable future researchers to quantitatively assess nonbinary individuals' experiences of microaggressions and how they relate to these individuals' mental well-being. First, however, research on transgender and nonbinary microaggressions is reviewed.

Transgender microaggressions

While much of the early work on microaggressions focused on racial and ethnic minorities, researchers have begun to also investigate the microaggressive experiences of other minority groups, such as transgender individuals (Chang & Chung, 2015). This research indicates that transgender microaggressions reflect a number of different themes. Perhaps most notably, Nadal and colleagues (2012) developed a taxonomy of transgender microaggressions comprised of 12 themes: (1) "use of transphobic and/or incorrectly gendered terminology;" (2) "assumption of universal transgender experience;" (3) "exoticization;" (4) "discomfort/disapproval of transgender experience;" (5) "endorsement of gender normative and binary culture or behaviors;" (6) "denial of the existence of transphobia;" (7) "assumption of sexual pathology/abnormality;" (8) "physical threat or harassment;" (9) "denial of individual transphobia;" (10) "denial of bodily privacy;" (11) "familial microaggressions;" and (12) "systemic or environmental microaggressions."

Transgender microaggressions have been studied and shown to occur within a wide range of contexts, such as therapeutic relationships (Morris et al., 2020), friendships (Pulice-Farrow et al., 2017), romantic relationships (Pulice-Farrow et al., 2020), familial relationships (Nadal et al., 2012), educational settings (Austin et al., 2019), in the workplace (Galupo & Resnick, 2016), and on social media platforms (Ingram et al., 2017). Further, researchers have demonstrated the importance of considering the context in which the microaggressions occur (Galupo et al., 2014). In particular, Galupo et al. (2014) found that their transgender participants rated microaggressions as most hurtful when they came from a friend (versus other contexts, such as romantic relationship), especially if that friend was transgender (rather than cisgender).

Importantly, while microaggressions may seem harmless, research suggests they are associated with a host of adverse mental health outcomes in transgender individuals. Using qualitative methods, researchers have found that experiences of microaggressions related to one's transgender identity are associated with feelings of invalidation, emotional distress, anger, betrayal, and hopelessness (Nadal et al., 2014; Price et al., 2021). These findings are supported by quantitative investigations, which have shown that transgender individuals' microaggressive experiences are associated with poorer general well-being as well as higher rates of psychological distress, depression, anxiety, suicide ideation and attempts, internalized gender identity stigma, and academic-related difficulties (Igarashi, 2021; Millar & Brooks, 2021; Parr & Howe, 2019; Timmins et al., 2017; Wolford-Clevenger et al., 2021; Woodford et al., 2017). As well, Wesselmann and colleagues (2021) found that transgender microaggressions have similar mental health consequences as experiences of social exclusion, such as greater feelings of subjective pain and lower levels of psychological needs satisfaction and perceived relational value. Given the sequelae of microaggression experienced by transgender individuals, it is imperative that researchers have a nuanced understanding of their microaggressive experiences.

Nonbinary microaggressions

To date, much of the research involving transgender individuals treats the transgender population as a homogenous group or focuses exclusively on binary transgender persons. This is problematic, as a growing body of scholarship has demonstrated that nonbinary and binary transgender individuals' experiences differ in several regards. For instance, recent work has shown that nonbinary individuals often experience gender dysphoria differently than their binary transgender counterparts (Galupo et al., 2021; Pulice-Farrow et al., 2020), suggesting that current measures of the construct may not be appropriate for use with nonbinary individuals (Galupo & Pulice-Farrow, 2020).

Researchers have suggested that nonbinary individuals' also have unique experiences of microaggressions (e.g., Chang & Chung, 2015; Matsuno & Budge, 2017). For example, in a critical review of the literature, Matsuno and Budge (2017) asserted that, much like other individuals that challenge socially constructed binaries (e.g., bisexual individuals), nonbinary individuals may face unique microaggressions suggesting they are invisible or dismissing the legitimacy of their gender identity. Recent research supports this contention. For instance, using qualitative interview data, Fiani and Han (2019) found that, compared to their binary transgender counterparts, nonbinary individuals were more likely to report experiencing macroaggressions and microaggressions that made them feel invisible or that reflected binary assumptions about gender. The theme of "binary assumptions" also was reported in a recent qualitative study exploring nonbinary individuals' experiences of microaggressions in the context of romantic relationships (Pulice-Farrow et al., 2020).

Other research further supports the contention that microaggressions manifest differently for nonbinary individuals. Pulice-Farrow et al. (2017) qualitatively explored how microaggressive experiences in friendships differed based on the gender identity of the participant and found differences across all three themes (i.e., "authenticity," "visibility," and "negotiation of identity in social context"). For example, in the theme

"authenticity," while binary transgender individuals were questioned by their friends about whether they were "real women" or "real men," nonbinary individuals were questioned about whether they were "really trans." In the theme entitled "visibility," the researchers observed that binary and nonbinary transgender individuals' experiences of being misgendered were different. Whereas binary transgender individuals' narratives focused on being misgendered when they were referred to as their sex assigned at birth, nonbinary individuals' narratives focused on their friends refusing to use their gender-neutral pronouns. Additionally, given that most infrastructures (e.g., public washrooms, changing rooms, etc.) are designed for binary gender individuals, nonbinary individuals also frequently encounter environmental microaggressions that reflect the theme of "visibility" (Matsuno & Budge, 2017). The aforementioned findings demonstrate that nonbinary and binary transgender microaggressions are not synonymous.

As noted earlier, researchers have found that, in comparison to their cisgender and binary transgender counterparts, nonbinary individuals experience poorer mental health, including lower rates of familial social support and higher rates of depression, anxiety, psychological distress, suicidality, self-harm, and hazardous alcohol consumption (James et al., 2016; Lefevor et al., 2019; Reisner & Hughto, 2019). Nonbinary individuals' frequent and unique experiences of microaggressions may help explain these mental health disparities; however, at present, there is a lack of research focusing on nonbinary microaggressions to support this explanation. The dearth of quantitative research on nonbinary microaggressions may be due, in part, to the shortage of measures designed to assess this construct. Currently, the only microaggression measures that examine nonbinary individuals' experiences of microaggressions are composite measures, such as Nadal's (2019) recently developed Gender Identity Microaggressions Scale (GIMS), which assesses both nonbinary and binary transgender microaggressions. However, given the growing body of research suggesting that microaggressions manifest differently for nonbinary and binary individuals, a composite measure may not be appropriate.

Current studies

Despite reporting frequent and unique microaggressions as well as high rates of mental health problems, a measure specifically assessing nonbinary individuals' experiences of microaggressions currently does not exist. The purpose of the current studies was to address this omission by developing and validating a measure of nonbinary microaggressions. In Study 1, interviews with nonbinary individuals were conducted to help generate an initial pool of items. In Study 2, the resultant pool of items was piloted through an online survey and a principal component analysis (PCA) was used for item reduction. In Study 3, an exploratory factor analysis (EFA) was used to assess the dimensionality of the measure. The scale's convergent validity and scale score reliability also were investigated. Finally, in Study 4, a confirmatory factor analysis (CFA) was conducted, and the validity (i.e., convergent and incremental) and scale score reliability were assessed further.

Study 1: Item generation

The purpose of Study 1 was to generate an initial pool of items for the Nonbinary Gender Microaggressions (NBGM) scale. To do so, interviews were conducted with nonbinary individuals to explore their experiences of microaggressions. Data were analyzed using thematic analysis, with items being generated based on the emergent themes. Additional items also were generated based on findings from previous qualitative research on nonbinary microaggressions (e.g., Nadal, 2019; Pulice-Farrow et al., 2017).

Method

Participants

Interview participants were five Canadian individuals who identified with a nonbinary gender identity. Two participants identified as nonbinary, two identified as agender, and one identified as genderqueer/transmasculine. The mean age of the participants was 25.2 years, and all participants used they/them pronouns. In terms of sex assigned at birth, three were assigned female at

birth and two were assigned male at birth. Finally, three participants identified as queer, one identified as bisexual/pansexual, and one identified as gay. No other demographic information was collected.

Measures and procedure

After receiving ethics approval, potential participants (i.e., self-identifying nonbinary individuals known by the researchers or by members of the researchers' lab) were invited to participate through email. As the study took place during the COVID-19 pandemic (i.e., in November and December of 2020), all interviews took place via WebEx. At the beginning of the interview, participants were asked to provide basic demographic information (i.e., age, pronouns, gender, sex assigned at birth, and sexual orientation), as well as a description of what their gender identity meant to them (i.e., how they conceptualized and experienced it). Then, for the four questions that followed, participants were provided with a definition of each of the following types of microaggressions: microassaults, microinsults, microinvalidations, and environmental microaggressions. After the provision of each definition, participants were prompted to talk about any experiences they might have had with that type of microaggression. For the final question, participants were asked about any other experiences they might have had with subtle forms of discrimination that had not been discussed thus far. At the end of the interview, participants were debriefed and received \$10 (CAD) cash as compensation for their time. Each interview took approximately 30 minutes to complete, and was audio-recorded for ease of transcription.

Data analysis

In accordance with past research involving the development of scales measuring microaggressions (Flanders et al., 2019), thematic analysis was used to examine the interview transcripts (Braun & Clarke, 2006). This qualitative method involved both of the researchers noting important and repeating statements related to the participants' experiences of nonbinary microaggressions,

and then meeting to discuss and combine themes. Following the meeting, the researchers developed items for the measure based on each of the themes. They also developed items based on extant literature and measures (e.g., Nadal, 2019; Pulice-Farrow et al., 2017). The researchers then met again to combine item lists, which involved editing, deleting, and adding items as they deemed fit.

Once the initial list of items was constructed and reviewed again by both researchers, the list was reviewed by two content experts (i.e., individuals experienced with scale development and sexual and gender minority research) and two layperson experts (i.e., nonbinary identifying individuals). These individuals evaluated each item in terms of its clarity and representativeness, and provided feedback in terms of comprehensiveness by suggesting the addition or deletion of any items they deemed fit (Rubio et al., 2003). Further, to preliminarily assess the factor structure and validity of the measure and as suggested by Rubio et al. (2003), the two content experts also were asked to match each item to their respective factor/theme. Finally, based on the feedback provided, the researchers, again, revised the initial pool of items and made note of the potential factor structure of the measure.

Results

The thematic analysis resulted in a total of nine initial themes and subthemes related to nonbinary individuals' experiences of microaggressions, and each theme was associated with 13–19 items (see Table 1 for the themes and examples of their associated items). As well, an additional 21 items were developed based on extant literature (e.g.,

"People have told me they find my gender identity 'fascinating'" and "I have been told that I complain too much about how people react to my gender identity"). This resulted in a total of 173 initial items.

Based on the experts' feedback, the initial pool of 173 items was revised. Specifically, several items were either edited (e.g., "People have asked when I intend to transition from being nonbinary to being trans" was edited to read "People have asked when I intend to transition from being nonbinary to being a trans man or trans woman"), deleted (e.g., "Someone has assumed that they were talking to a group of boys and girls when addressing a group that I was in [e.g., classroom]), or added (e.g., "Someone close to me [e.g., friend] has made no effort to use my correct pronouns). This process resulted in a reduced pool of 92 items. Further, based on the content experts' feedback on the factor structure of the measure, the preliminary factor structure was found to consist of eight factors: (1) authenticity (20 items); (2) institutional invisibility (13 items); (3) misgendering through pronouns (10 items); (4) misgendering through deadnaming (12 items); (5) misgendering through gendered terminology (9 items); (6) expectation to enlighten/educate others (13 items); (7) cisgender self-absorption (11 items); and (8) denial of individual and societal discrimination (4 items).

Study 2: Principal component analysis

The purpose of Study 2 was to reduce the number of items on the NBGM scale. To do so, the initial 92-item measure was piloted through an online survey, and a principle component analysis (PCA) was conducted using SPSS Version 27.

Table 1. Initial themes and examples of associated items (Study 1).

Themes	Example items
Authenticity	
Nonbinary identities as inauthentic	"People have told me that there are only two genders"
Not trans enough	"People have insinuated that I am not 'trans enough'"
Invisibility	
Lack of gender-neutral spaces	"I have found that most public spaces are gendered"
Exclusive language	"Someone has asked me if I am a boy or a girl"
Misgendering	
Incorrect pronouns	"People have told me that my pronouns are silly"
Deadnaming	"I have had to correct the name someone used for me"
Gendered terminology	"Friends have referred to me using gendered terms"
Expectation to enlighten others	"I have had to explain my gender identity to someone"
Cisgender self-absorption	"People have told me that they find being nonbinary confusing"

Method

Participants

In March of 2021, 158 participants were recruited through Tumblr ($n = 133$; 84.2%), Reddit ($n = 12$; 7.6%), Facebook ($n = 4$; 2.5%), and snowball sampling ($n = 9$; 5.7%). Participants ranged in age from 18 to 42 ($M = 23.24$, $SD = 4.86$),³ and all participants identified with a nonbinary gender identity: 83 (52.5%) identified as nonbinary; 27 (17.1%) identified as agender; 17 (10.8%) identified as genderfluid; 16 (10.1%) identified as genderqueer; and 15 (9.5%) identified as another gender (e.g., bigender, multigender, etc.) or with multiple gender labels (e.g., genderfluid and nonbinary, nonbinary transman, etc.). In terms of sex assigned at birth, 139 (88.0%) respondents were assigned female, 18 (11.4%) were assigned male, and 1 (0.6%) was assigned intersex. With respect to sexual orientation, 39 (24.8%) participants identified as bisexual, 31 (19.7%) identified as queer, 29 (18.5%) identified as asexual, 20 (12.7%) identified as pansexual, 16 (10.2%) identified as lesbian, and 22 (14.0%) identified with another label (e.g., gay, omnisexual, etc.) or with multiple labels (e.g., asexual and gay, asexual and bisexual, etc.). The majority of the participants were from the United States ($n = 99$; 63.1%). A smaller number of participants were from the United Kingdom ($n = 16$; 10.0%), Canada ($n = 8$; 5.1%), or another country ($n = 34$; 21.8%; e.g., Germany, Sweden, Australia, etc.). Finally, the sample consisted mostly of Caucasian individuals ($n = 136$; 86.1%), with smaller proportions identifying as another ethnicity ($n = 22$; 11.0%; e.g., Indigenous, East Asian, mixed).

Procedure

Participants accessed the online survey through one of the following channels: Tumblr, Reddit, or Facebook. Participants also could be recruited through snowball sampling. After consent was obtained, participants completed the initial NBGM scale and four other measures that were not used in the present study. Participants also were asked to provide basic demographic information. At the end of the survey, participants were given the opportunity to offer feedback about the study and were provided with a

debriefing form. The survey was administered in English and took approximately 20 minutes to complete.

Measures

Nonbinary Gender Microaggressions (NBGM) Scale. The preliminary version of the NBGM scale contains 92 items designed to assess nonbinary individuals' experiences of microaggressions. Using a 5-point scale (1 = *never*; 5 = *10 or more times*), participants were asked to indicate how often they experienced each microaggression (e.g., "People have told me that they find the idea of being nonbinary confusing") in the past six months. (It should be noted that participants also could select "N/A: *This experience does not apply to me*," which was coded as zero.) Scores on this measure could range from 0 to 460, with higher scores denoting more frequent microaggressive experiences.

Results

Principal component analysis

The data were found to be suitable for PCA using Bartlett's test of sphericity, which was statistically significant ($\chi^2 = 13394.43$, $p < .001$), and the Kaiser-Meyer-Olkin measure of sampling adequacy, which was .86. Both the parallel analysis (using syntax from O'Connor (2000)) and the screen test suggested a six-component solution. Items were retained if their loadings were greater than 0.5 and their cross loadings were less than 0.35. This procedure resulted in the initial retention of 46 items. Next, each item was reviewed by the authors to ensure its content matched the theme of its respective component, which resulted in the removal of an additional five items.⁴ The final solution consisted of 41 items reflecting: (1) Negation of Identity (9 items); (2) Inauthenticity (10 items); (3) Queer/Trans Exclusion (5 items); (4) Deadnaming (6 items); (5) Institutional Invisibility (6 items); and (6) Misuse of Gendered Terminology (5 items). These components accounted for 37.39%, 6.23%, 4.55%, 4.02%, 3.46%, and 2.78% of the variance, respectively. To view item loadings for the retained items (see Table 2).

Table 2. Component and factor loadings (Studies 1, 2, and 3).

Subscales and items	PCA	EFA	CFA
Negation of identity			
People have told me that it is difficult for them to use the pronouns that I want them to use	.70	.76	.80
Someone close to me (e.g., family member) has refused to use the pronouns I wanted them to use	.63		
I have had to explain my gender identity to a loved one (e.g., family member)	.56	.58	.60
A loved one (e.g., family member) has told me how difficult it is for them that I identify as nonbinary	.75		
A loved one (e.g., family member) has told me that adjusting to my nonbinary identity has been a struggle for them	.76	.82	.77
People have told me that it is too difficult to use plural pronouns when referring to me	.59		
People have told me that it will take time for them to adjust to using different pronouns in my presence	.73	.92	.88
People have told me that it will take time for them to adjust to my gender identity	.68	.78	.84
When I corrected someone on the pronouns they use for me, they complained about how difficult it is for them to get it right	.73	.76	.76
Inauthenticity			
I have been told that nonbinary identities are not real gender identities	.76	.72	.88
I have heard individuals debate whether nonbinary identities are "real"	.81		
I have heard people say that being nonbinary isn't a "thing"	.76	.77	.80
People have insinuated that my gender identity does not exist	.74		
People have insinuated that my gender identity is just a "fad"	.73		
People have insinuated that my gender identity is just a phase	.68	.64	.63
People have suggested that being nonbinary is just a way to get extra attention	.70	.85	.83
People have told me that being nonbinary is just a way to stand out and be different	.73	.85	.82
People have told me that I am "confused" about my gender identity	.67		
People have told me that there are only two genders	.76	.64	.80
Deadnaming			
Even though I have asked them not to, friends have continued to use my deadname (i.e., birth name)	.72		
I have had to correct the name someone used for me	.75	.85	.89
Someone has asked me why I don't like my "real" name	.65	.79	.71
Someone has continued to use my deadname (i.e., birth name) even after I asked them to use my current name	.80	.89	.85
Someone has referred to me with my deadname (i.e., birth name) on social media	.61	.63	.67
Someone who knows my current name has referred to me by my deadname (i.e., birth name)	.80		
Trans exclusion			
I have struggled to find a queer support group that was inclusive of nonbinary people	.65		
People have asked when I intend to transition from being nonbinary to being a trans man or trans woman	.52		
I have been rejected by members of the trans community because of my gender identity	.73	.78	.94
I have been told by trans people that I do not fit in with the trans community	.64	.95	.97
I have been told that being nonbinary simply means one isn't brave enough to be a trans man or trans woman	.72	.66	.56
Institutional invisibility			
I have been forced to use a men's or women's changing room in a public space	.58		
I have been forced to use a men's or women's washroom in a public space	.58		
I have found that most public spaces are gendered	.64		
I have had difficulty finding a gender-neutral changing room in a public space	.67		
I have had difficulty shopping for clothes because of how gendered they are	.52		
I have had difficulty finding a gender-neutral washroom in a public space	.72		
Misuse of gendered terminology			
I have had to remind someone not to use gendered terminology (e.g., "bro," "girl") when referring to me	.83	.81	.83
Someone has referred to me using a gendered term (e.g., "bro," "girl") that is inconsistent with my gender identity	.81	.75	.66
Someone has said I am too sensitive about people using gendered terminology (e.g., "bro," "girl") when they refer to me	.71	.73	.76
Someone has used gendered terminology (e.g., "bro," "girl") when referring to me even though they knew it bothered me	.76	.86	.85
I have had to correct someone on the terminology (e.g., "bro" or "girl") they use when referring to me	.64		

Note. Bolded items are those retained in the final version of the NBGM scale.

Reliability

The descriptive statistics for the NBGM scale and its subscales are reported in Table 3. In terms of scale score reliability, the overall alpha coefficient for the NBGM scale was .95. The six subscales also demonstrated adequate scale score reliability, with alpha coefficients ranging from .82 to .94.

Study 3: Exploratory factor analysis and initial validation

The primary purpose of Study 3 was to investigate the dimensionality of the NBGM scale. Thus, an exploratory factor analysis (EFA) was conducted using SPSS Version 27. A subsidiary purpose of Study 3 was to examine the initial

Table 3. Scale descriptives (Study 2).

Measure	<i>M (SD)</i>	Alpha coefficient (95% CI)
NBGM scale	83.58 (33.16)	.95 (.94–.96)
Negation of Identity	20.25 (11.94)	.94 (.92–.95)
Inauthenticity	27.79 (11.49)	.94 (.92–.95)
Deadnaming	10.23 (8.51)	.93 (.91–.94)
Queer/Trans Exclusion	7.52 (4.60)	.85 (.81–.88)
Misuse of Gendered Terminology	9.54 (6.95)	.89 (.87–.92)
Institutional Invisibility	19.56 (7.99)	.82 (.77–.86)

convergent validity of the measure. To do so, two hypotheses were formulated and tested. As previously noted, much research has demonstrated that microaggressions are associated with decrements in psychological well-being (e.g., Parr & Howe, 2019; Salim et al., 2019; Timmins et al., 2017; Woodford et al., 2014); therefore, it was hypothesized that scores on the NBGM scale would correlate positively with anxiety (H1) and perceived stress (H2).

Method

Participants

In June of 2021, 151 participants were recruited through Reddit ($n=93$; 61.6%), Tumblr ($n=43$; 28.5%) and snowball sampling ($n=15$; 9.9%). Participants ranged in age from 18 to 49 ($M=24.57$, $SD=6.44$), and all participants expressed a nonbinary gender identity: 62 (41.1%) identified as nonbinary, 18 (11.9%) identified as agender, 13 (8.6%) identified as genderqueer, and 12 (7.9%) identified as genderfluid. An additional 46 (30.5%) identified with another gender identity (e.g., bigender, multigender) or multiple labels (e.g., agender, demiboy; nonbinary, trans man). In terms of sex assigned at birth, 97 (64.2%) of the participants were assigned female at birth, 40 (26.5%) were assigned male at birth, and 14 (9.3%) selected “prefer to not to say.” Regarding sexual orientation, 35 (23.2%) participants identified as queer, 30 (19.9%) identified as bisexual, 28 (18.5%) identified as asexual, and 21 (13.9%) identified as pansexual. An additional 37 (24.5%) identified with another sexual orientation (e.g., lesbian, demisexual) or with multiple labels (e.g., biromantic, asexual; asexual lesbian). Most ($n=94$; 62.3%) participants were from the United States, and the remainder were from the United Kingdom ($n=18$; 11.9%), Canada ($n=15$; 9.9%), or another location ($n=23$; 15.2%; e.g., Australia, Russia).

Finally, in regards to ethnicity, the majority of participants identified as Caucasian ($n=127$; 84.1%), with smaller proportions identifying as mixed ($n=7$; 4.6%), East Asian ($n=5$; 3.3%), Latin American ($n=5$; 3.3%), or another ethnicity ($n=4$; 2.6%; e.g., Indigenous, South Asian).

Procedure

Other than the measures presented to the participants (detailed below), the procedure for Study 3 was identical to the one used in Study 2.

Measures

Nonbinary Gender Microaggressions (NBGM) Scale. The reduced version of the NBGM scale consists of 41 items designed to assess nonbinary individuals’ experiences of microaggressions. Participants were asked to indicate how often they experienced each microaggression in the past six months on a 5-point scale (1 = *Never*; 5 = *10 or more times*). Participants also could select “N/A: *This experience does not apply to me*,” which was coded as zero in the present study. Scores on this measure can range from 0 to 205, with higher scores denoting more frequent microaggressive experiences.

Generalized Anxiety Disorder-7 Scale (GAD-7; Spitzer et al., 2006). The 7-item GAD-7 was used to assess symptoms of anxiety. Respondents indicate on a 4-point scale (1 = *Not at all*; 4 = *Nearly every day*) how often they felt each item (e.g., “Worrying too much about different things?”). Total scores on the GAD-7 can range from 7 to 28, with higher scores denoting greater anxiety symptomatology. Scale score reliability for this measure was .91 among a sample of transgender individuals (Timmins et al., 2017). In support of the construct validity of the GAD-7, researchers have shown that scores on the measure correlate positively with frequency of LGBTQ microaggressions (Woodford et al., 2014).

Perceived Stress Scale-4 (PSS-4; Cohen et al., 1983). The 4-item PSS-4 was used to assess perceived stress. On a 5-point scale (1 = *Never*; 5 = *Very often*), participants rate how often they have felt a certain way in the past month (e.g., “In the last month, how often have you felt that you were unable to control the important things in your life?”). Total scores on this measure can range from 4 to 20, with higher scores denoting greater perceived stress. Scores on this scale have been found to correlate positively with perceived distress associated with microaggressions targeting LGBT people of color, and scale score reliability for this measure was .84 among a sample of LGBT participants (Balsam et al., 2011).

Results

Exploratory factor analysis

An EFA was conducted using the principal axis factoring (PAF) method and oblique rotation (i.e., direct oblimin). The data were determined to be suitable for EFA using the Kaiser-Meyer-Olkin measure of sampling adequacy, which was .90, and Bartlett’s test of sphericity, which was statistically significant ($\chi^2 = 4909.42$, $p < .001$). Next, factor retention was determined by examining findings from a parallel analysis (using syntax from O’Connor (2000)), the scree plot, eigenvalues, and interpretability of the factors. The parallel analysis suggested a four-factor solution and the scree plot suggested a four-factor or five-factor solution. However, the first factor in both of these solutions contained what appeared to be a conceptually random cluster of items; therefore, neither of these solutions were selected. As seven of the factors had eigenvalues greater than 1, the six-factor and seven-factor solutions were then assessed. Both these solutions made more conceptual sense. However, inspection of the seven-factor solution indicated that only two items uniquely loaded onto the sixth factor, and that the sixth and seventh factors contained conceptually similar items. Therefore, the six-factor solution was selected.

Item retention was determined by examining item loadings and cross loadings, with cutoffs being set at .45 and .30, respectively, as well as by reviewing the items within each factor for

conceptual redundancy. These relatively stringent cutoffs were selected in order to further reduce the number of items on the scale, as well as to ensure the retained items demonstrated simple structure (i.e., they load strongly only onto one factor; Worthington & Whittaker, 2006). This procedure resulted in the initial retention of 26 items; however, as only two items were retained on the factor reflecting environmental microaggressions (Costello & Osborne, 2005), it was decided by the authors that the measure would focus exclusively on interpersonal microaggressions, and this factor was subsequently dropped from the measure. Finally, as significant changes were made to the factors, the EFA was rerun, this time forcing a five-factor solution. This secondary analysis resulted in the removal of one additional item because its loading (i.e., .39) was below the .45 cutoff. With the removal of this item, the final solution consisted of 23 items across the following five factors: Negation of Identity (6 items), Inauthenticity (6 items), Deadnaming (4 items), Trans Exclusion (3 items), and Misuse of Gendered Terminology (4 items). These factors accounted for 41.02%, 12.13%, 9.4%, 5.94%, and 4.6% of the variance, respectively. See Table 2 for factor loadings of the retained items.

Reliability

To assess the scale score reliability of the NBGM scale and its subscales, Cronbach’s alphas were calculated. Cronbach’s alpha for the total NBGM scale was .93. The subscales also demonstrated good reliability, with alpha coefficients ranging from .86 to .93 (see Table 4). Alpha coefficients for the validation measures also were acceptable (GAD-7 = .89; PSS-4 = .80).

Validity

Table 4 presents the correlations between all major study variables. As expected, and in support of the measure’s convergent validity, scores on the NBGM scale and its subscales were positively correlated with scores on measures of both anxiety and perceived stress. The only exception was the correlation between the Deadnaming subscale and perceived stress, which did not reach statistical significance.

Table 4. Intercorrelations and Scale Descriptives (Study 3).

Measure	1	2	3	4	5	6	7	8	<i>M</i>	<i>SD</i>	α
1. NBGM scale		.86**	.73**	.69**	.65**	.73**	.30**	.36**	48.03	23.04	.93
2. Negation of Identity			.42**	.51**	.46**	.63**	.20*	.30**	13.70	8.48	.93
3. Inauthenticity				.38**	.49**	.37**	.33**	.31*	16.07	7.44	.90
4. Deadnaming					.42**	.26**	.13	.21**	5.81	5.93	.88
5. Trans Exclusion						.34**	.20*	.23**	4.12	2.87	.87
6. Misuse of Gendered Terminology							.21*	.24**	8.11	5.96	.89
7. Perceived Stress								.72**	13.25	3.19	.80
8. Generalized Anxiety									18.52	5.50	.89

Note. * $p < 0.05$; ** $p < 0.01$.

Study 4: Confirmatory factor analysis and further validation

The primary purpose of Study 4 was to confirm the dimensionality of the NBGM scale. To do so, a confirmatory factor analysis (CFA) was conducted using Amos Version 26. A subsidiary purpose of Study 3 was to investigate further the validity of the measure. To assess the convergent validity of NBGM scale, three hypotheses were tested. Based on past research indicating that microaggressions are associated with decrements in psychological well-being (e.g., Parr & Howe, 2019; Salim et al., 2019; Timmins et al., 2017; Woodford et al., 2014), it was hypothesized the scores on the NBGM scale would correlate positively with depression (H1) and negativity with self-esteem (H2). Extant research also has shown that individuals who are more “out” about their sexual orientation experience more prejudice and victimization (Coleman et al., 2017; D’Augelli & Grossman, 2001); therefore, it also was hypothesized that scores on the NBGM would correlate positively with gender identity disclosure (H3). To assess the incremental validity of the measure, an additional two hypotheses were tested. Specifically, research has shown that neuroticism and self-esteem are associated with depressive symptoms (Schmitz et al., 2003); thus, it was hypothesized that scores on the NBGM scale would predict higher depression scores above and beyond scores on measures of neuroticism (H4) and self-esteem (H5).

Method

Participants

In July and August of 2021, 266 individuals were recruited to participate through Reddit ($n = 232$;

87.2%), Tumblr ($n = 26$; 9.8%), Facebook ($n = 2$; 0.8%), and snowball sampling ($n = 6$; 2.3%). Participants ranged in age from 18 to 70 ($M = 25.32$, $SD = 6.36$), and all participants expressed a nonbinary gender identity: 121 (45.5%) identified as nonbinary, 49 (18.4%) identified as agender, 20 (7.5%) identified as gender-queer, and 16 (6.0%) identified as genderfluid. An additional 60 (22.6%) participants identified with another gender identity (e.g., bigender, demigirl) or multiple labels (e.g., nonbinary, genderfluid; nonbinary, trans man). Regarding sex assigned at birth, 151 (56.8%) of the participants were assigned female at birth, 87 (32.7%) were assigned male at birth, and 2 (0.8%) were assigned intersex. An additional 26 (9.8%) selected “prefer to not to say.” In terms of sexual orientation, 55 (20.7%) participants identified as bisexual, 54 (20.3%) identified as queer, 45 (16.9%) identified as pansexual, and 42 (15.8%) identified as asexual. An additional 69 (26.1%) identified with another sexual orientation (e.g., lesbian, gynesexual) or with multiple labels (e.g., biromantic, asexual; aegosexual, panromantic). Most ($n = 181$; 68.0%) participants were from the United States, and the remainder were from Canada ($n = 23$; 8.6%), the United Kingdom ($n = 22$; 8.2%), Australia ($n = 9$; 3.4%), or another location ($n = 31$; 11.8%; e.g., Germany, Norway). Finally, in regards to ethnicity, the majority of participants identified as Caucasian ($n = 216$; 81.2%), with smaller proportions identifying as mixed ($n = 31$; 11.7%), Latin American ($n = 7$; 2.6%), or another ethnicity ($n = 11$; 4.2%).

Procedure

Other than the measures presented to the participants (detailed below), the procedure for Study 4 was identical to the one used in Studies 2 and 3.

Measures

Nonbinary Gender Microaggressions (NBGM) Scale. The NBGM scale consists of 23 items designed to assess nonbinary individuals' experiences of microaggressions. Participants were asked to indicate how often they experienced each microaggression in the past six months on a 5-point scale (1 = *Never*; 5 = *10 or more times*). Participants also could select "N/A: *This experience does not apply to me*", which was coded as zero in the present study. Scores on this measure can range from 0 to 115, with higher scores denoting more frequent microaggressive experiences.

Big Five Inventory – Neuroticism Subscale (BFI-N; John & Srivastava, 1999). Neuroticism was examined using the Neuroticism subscale from the Big Factor Inventory. This 8-item subscale asks participants to indicate on a 5-point scale (1 = *strongly disagree*; 5 = *strongly agree*) the extent to which each item is characteristic of them. Sample items on this measure include "Gets nervous easily" and "Worries a lot," and scores can range from 8 to 40, with higher scores representing higher levels of neuroticism. Researchers have found that this subscale is correlated with constructs such as higher levels of depression and lower levels of life satisfaction (Shenkman et al., 2020), and alpha coefficients have ranged from .70 to .87 in past studies (Mekawi & Todd, 2018; Shenkman et al., 2020).

Center for Epidemiological Studies Depression Scale (CES-D 10; Andresen et al., 1994). Depressive symptoms were assessed using the 10-item version of the CES-D. Respondents indicate the frequency of occurrence for each item on a 4-point scale, ranging from 1 (*Rarely or none of the time [less than 1 day]*) to 4 (*Most or all of the time [5–7 days]*). Sample items on this measure include: "I felt depressed" and "I felt lonely." Scores can range from 10 to 40, with higher scores representing greater depressive symptomatology. Scores on this scale have been found to correlate positively with perceived distress associated with microaggressions targeting LGBT people of color (i.e., the extent at which the microaggressions "bothered" them), and scale score reliability for this measure was .91 among a sample of LGBT participants (Balsam et al., 2011).

Nebraska Outness Scale—Disclosure Subscale (NOS-D; Meidlinger & Hope, 2014). Gender identity disclosure was measured using the 5-item NOS-D, which was adapted for use with nonbinary individuals in the present study by changing "sexual orientation" to "gender identity" in the questionnaire prompt. Participants indicate on a 11-point scale (1 = 0%; 11 = 100%) the percentage of people in each group (i.e., immediate family members, extended family members, people they socialize with, people at their work/school, and strangers) that they believe are aware of their nonbinary identity. Scores can range from 5 to 55, with higher scores denoting greater gender identity disclosure. Scores on the NOS-D have been shown to be inversely related to constructs such as internalized homonegativity and negative affect (Meidlinger & Hope, 2014). As well, Meidlinger and Hope reported an alpha coefficient of .80 among their sample of sexual minority individuals.

Rosenberg Self-Esteem Scale (SES; Rosenberg, 1965). Self-esteem was assessed in the current study using the 10-item SES. This measure asks participants to respond to statements such as "On the whole, I am satisfied with myself" on a 4-point scale (1 = *Strongly disagree*; 4 = *Strongly agree*). Scores can range from 10 to 40, with higher scores denoting greater self-esteem. Scores on this scale have been found to correlate inversely with frequency of homonegative microaggressions (Wright & Wegner, 2012), and alpha coefficients have ranged from .72 to .91 in past studies (Gray-Little et al., 1997; Wright & Wegner, 2012).

Results

Confirmatory factor analysis

The validity of the five-factor solution obtained in Study 3 was tested using CFA with maximum likelihood. To assess model fit, multiple criteria were used: (1) Root Mean Square Error of Approximation (RMSEA); (2) Comparative Fit Index (CFI); and Tucker-Lewis Index (TLI), and RMSEA values of <.08 and CFI and TLI values of >.90 were used to indicate adequate model fit (Byrne, 2005). The chi-square fit index also was assessed. However, this statistic has been shown

to be sensitive to large sample sizes (i.e., $N > 200$; Bollen, 1990). Therefore, rather than aiming for a statistically non-significant result, a chi-square to df ratio of < 3 was used to indicate adequate model fit (Kline, 1998). Overall, results indicated that the five-factor solution demonstrates acceptable model fit: RMSEA = .071, 90 CI [.063=.079]; CFI = .93; TLI = .91; $X^2(220) = 516.44$, $p < .001$; and $X^2/df = 2.35$. To view factor loadings, see Table 2.

Reliability

To investigate the scale score reliability of the NBGM scale and its subscales, Cronbach's alphas were calculated. Cronbach's alpha for the total NBGM scale was .90. The subscales also demonstrated good reliability, with alpha coefficients ranging from .85 to .91 (see Table 5). Alpha coefficients for the validation measures also were acceptable (NOS-D = .72; RSES = .90; BFI-N = .82; CES-D = .85).

Validity

Table 5 presents the correlations between all major study variables. In support of the measure's convergent validity, scores on the NBGM scale and its subscales were positively correlated with depression scores. Also, as expected, scores on the NBGM scale, Inauthenticity subscale, and Trans Exclusion subscale were inversely correlated with scores on a measure of self-esteem; however, scores on the Negation of Identity, Deadnaming, and Misuse of Gendered Terminology subscales were not significantly correlated with self-esteem. Finally, scores on the NBGM scale and its subscales were positively correlated with gender identity disclosure. The only exception was the correlation between the Inauthenticity subscale

and disclosure, which did not achieve statistical significance.

To assess the incremental validity of the NBGM scale, hierarchical multiple regression analyses were run (see Table 6). In the first analysis, neuroticism was entered in Block 1, the NBGM scale was entered in Block 2, and depression was entered as the dependent variable. Results indicated that, at Step 1, neuroticism significantly contributed to the model, $F(1, 254) = 91.41$, $p < .001$, and accounted for 26.5% of the variance in depression. As predicted, adding the NBGM scale at Step 2 significantly improved the model, $F(2, 253) = 58.38$, $p < .001$, and accounted for an additional 5.1% of the variance in depression.

In the second analysis, self-esteem replaced neuroticism in Block 1. Findings demonstrated that, at Step 1, self-esteem significantly contributed to the model, $F(1, 253) = 118.04$, $p < .001$, and accounted for 31.8% of the variance in depression. As expected, introducing the NBGM scale at Step 2 significantly improved the model, $F(2, 252) = 71.38$, $p < .001$, and accounted for an additional 4.4% of the variance in depression.

Demographic differences

Finally, scores on the NBGM scale did not differ based on race (i.e., White versus nonwhite), $t(261) = .242$, $p = .809$, or sex assigned at birth (female versus male versus "prefer not to say"), $F(2, 259) = 2.42$, $p = .108$. Scores also did not correlate with age, $r(263) = -.01$, $p = .881$.

General discussion

The present research contributes to the literature by outlining the development and preliminary validation of a measure that captures nonbinary

Table 5. Intercorrelations and Scale Descriptives (Study 4).

Measure	1	2	3	4	5	6	7	8	9	10	M	SD	α
1. NBGM scale		.80**	.65**	.63**	.53**	.69**	.40**	.30**	-.17**	.12*	45.74	19.06	.90
2. Negation of Identity			.24**	.41**	.29**	.58**	.49**	.22**	-.10	.05	12.96	7.32	.90
3. Inauthenticity				.20**	.47**	.23**	-.03	.19**	-.20**	.07	14.42	7.11	.91
4. Deadnaming					.30**	.28**	.32**	.14*	-.09	.17**	5.80	5.42	.86
5. Trans Exclusion						.13*	.14*	.25**	-.15*	.07	4.09	2.53	.86
6. Misuse of Gendered Terminology							.41**	.25**	-.03	.09	8.62	5.60	.85
7. Disclosure								.11	.05	.03	24.19	10.99	.72
8. Depression									-.56**	.51**	24.69	6.67	.85
9. Self-Esteem										-.57**	25.05	6.11	.90
10. Neuroticism											28.50	6.23	.82

Note. * $p < 0.05$; ** $p < 0.01$.

Table 6. Incremental validity (Study 4).

Predictor	<i>B</i>	β	<i>R</i> ²	<i>R</i> ² change	<i>F</i>	<i>p</i>
Step 1			.27	.27	91.41	.001
Neuroticism	.57	.51				
Step 2			.32	.05	58.38	.001
Neuroticism	.53	.48				
NBGM scale	.08	.23				
Step 1			.32	.32	118.04	.001
Self-Esteem	-.62	-.56				
Step 2			.36	.04	71.38	.001
Self-Esteem	-.58	-.53				
NBGM scale	.07	.21				

Note. Above the center line are the regression results for neuroticism versus the NBGM scale, below the line are the results for self-esteem versus the NBGM scale. Depression was the dependent variable in both analyses.

individuals' experiences of microaggressions. In Study 1, a total of 92 items were generated based on (1) findings from interviews with nonbinary individuals; (2) extant literature related to non-binary microaggressions; and (3) feedback from content and layperson experts. In Study 2, a PCA was used to reduce the number of items on the NBGM scale, which resulted in the retention of 41 items. In Studies 3 and 4, an EFA yielded a five-factor solution consisting of 23 items, and a CFA found that this solution demonstrates adequate model fit. Evidence of the measure's scale score reliability and validity (i.e., convergent and incremental) also were provided.

The NBGM scale consists of five subscales: (1) Negation of Identity, which includes nonbinary individuals' experiences of others struggling to accept their gender identity or use their correct pronouns; (2) Inauthenticity, which reflects microaggressions that suggest nonbinary individuals and identities are inauthentic; (3) Deadnaming, which involves misgendering by using a nonbinary individuals' deadname (i.e., birth name); (4) Trans Exclusion, which relates to nonbinary individuals' experiences of being viewed as "not trans enough" or "not really trans;" and (5) Misuse of Gendered Terminology, which includes items reflecting nonbinary individuals' experiences of people referring to them with gendered terminology that is inconsistent with their gender identity. These subscales reflect findings from previous research on nonbinary individuals' experiences of microaggressions (Matsuno & Budge, 2017; Morris et al., 2020; Pulice-Farrow et al., 2017; 2020).

In Studies 3 and 4, the scale score reliability and validity of the final version of the NBGM

scale and its subscales were assessed. Findings indicated that the NBGM scale and its subscales demonstrate good reliability, with alpha coefficients ranging from .85 to .93. Findings also suggest that, for the most part, the measure demonstrates convergent validity. As predicted and consistent with previous microaggression research (Lui & Quezada, 2019; Parr & Howe, 2019; Timmins et al., 2017), findings indicated that, overall, participants' who experienced microaggressions more frequently also experienced lower levels of self-esteem and higher levels of depression, anxiety, and perceived stress. The only exceptions were the correlation between perceived stress and the Deadnaming subscale, as well as the correlations between self-esteem and the Negation of Identity, Deadnaming, and Misuse of Gendered Terminology subscales, which did not reach statistical significance.

The COVID-19 pandemic may help explain these non-significant findings. Specifically, research indicates that the pandemic and its associated social distancing guidelines have had an adverse impact on the mental health of LGBTQ individuals (Zwickl et al., 2021). As well, while some research suggests that some microaggressions have increased during the pandemic (i.e., misgendering from family while isolating at home; Jones et al., 2021), others have found that, compared to before the pandemic, LGBTQ individuals have been less likely to state that their stress is due to their experiences of prejudice (Scroggs et al., 2021). As such, the non-significant correlations found in the present studies may have been due to the pandemic becoming a more pressing stressor for participants than their microaggressive experiences. To assess this

possibility, future research should determine whether associations between scores on the NBGM scale and mental health outcomes differ post-pandemic. Alternatively, it is possible that protective factors not measured in the present studies, such as social support, may have reduced the adverse impacts of microaggressions for participants (Kaufman et al., 2017; Matijczak et al., 2020), and future research should also investigate this possibility.

It also was hypothesized that scores on the NBGM scale and its subscales would be positively associated with gender identity disclosure. This hypothesis was mostly supported, suggesting that those who were more open about their gender identity were exposed to more microaggressions. This finding is consistent with past research showing that individuals who are more “out” about their sexual orientation have more frequent experiences of prejudice (Coleman et al., 2017; D’Augelli & Grossman, 2001). The only exception was the finding that scores on the Inauthenticity subscale were not significantly associated with disclosure, which suggests that the frequency at which a nonbinary person experiences this type of microaggression is not dependent on how many people know about their identity. This finding may be due to the nature of the items on this subscale. In particular, most of the items on the other subscales (e.g., “People have told me that it will take time for them to adjust to my gender identity”), assume that others know about the participants’ gender identity. In contrast, experiences of the microaggressions that are communicated in the Inauthenticity subscale (e.g., “I have been told that nonbinary identities are not real gender identities”) do not necessarily require or assume that the participant is “out” about their gender, and people may communicate these types of microaggressions to nonbinary individuals even without knowing about their gender identity.

In addition to convergent validity, evidence also was provided for the incremental validity of the measure. Specifically, based on previous research (Schmitz et al., 2003), it was hypothesized that scores on the NBGM scale would predict scores on a measure of depression above and beyond scores on measures of neuroticism and self-esteem. As predicted, the hierarchical multiple

regression analyses indicated that experiences of microaggressions uniquely contributed to participants’ depression scores. Taken together, the above findings suggest that, overall, the NBGM scale is a psychometrically sound measure of nonbinary microaggressions.

Limitations and future directions

Strengths to the present research include its mixed methodology and the involvement of nonbinary individuals in the item generation process. Despite such strengths, the present findings should be interpreted with a number of limitations in mind. First, it is important to note that nonbinary individuals are a heterogeneous group who report a diverse set of experiences and identities. For example, many nonbinary individuals use pronouns that are different than those typically associated with their sex assigned at birth while others do not. Similarly, while some nonbinary people change their name to better reflect their gender identity, many choose to keep the name given to them at birth. Given such differences, the NBGM scale may be better suited to measure some nonbinary people’s experiences of microaggressions than others.

Additional limitations pertain to the study samples. First, past research has demonstrated that LGBTQ people of color experience unique forms of microaggressions related to their intersecting minority identities that White LGBTQ people do not (e.g., Balsam et al., 2011). Given that the survey samples in the present studies were overwhelmingly White (and that the races of the interviewees in Study 1 were not collected), it is likely that the NBGM scale best captures the experiences of White nonbinary individuals. In turn, caution should be used when generalizing the findings of the present studies to nonwhite populations. It is also highly recommended that future research investigates the microaggressive experiences of nonbinary people of color, especially considering that, to the best of the current researchers’ knowledge, microaggression research focusing exclusively on nonwhite nonbinary individuals’ experiences does not yet exist. Second, in an effort to recruit as many nonbinary individuals as possible, participants from all countries were eligible

to participant in the present studies, and some participants were from nations where English is not the first language. Therefore, it is possible that some participants were not fluent in English, which could have influenced the findings of the present studies in unknown ways. However, such influence would have been small, as the majority of participants were from English-speaking countries (e.g., the United States, Canada, etc.). Finally, despite best efforts, the survey samples were smaller than what is often recommended for factor analysis (e.g., sample size should be >300; Clark & Watson, 1995; Guadagnoli & Velicer, 1988). Given this, future researchers may want to assess the factor structure of the NBGM scale using larger samples of nonbinary individuals.

As research pertaining to nonbinary microaggressions is only in its infancy, there are several additional areas for future research. First, future research should aim to identify factors that may reduce or exacerbate the sequelae of microaggressions among nonbinary individuals. For instance, research suggests that factors such as social support (Kaufman et al., 2017; Matijczak et al., 2020), self-acceptance (Woodford et al., 2014) and a sense of belonging (Choi et al., 2021) may serve as protective factors in the relationship between microaggressions and mental health. Research also indicates that constructs such as internalized stigma (Salim et al., 2020) and rumination (Kaufman et al., 2017) may exacerbate the impact of microaggressive experiences on people's well-being. However, such factors have not yet been examined in conjunction with nonbinary microaggressions and, therefore, constitute an important avenue for future research.

Finally, the NBGM scale may be useful within clinical contexts. Research has demonstrated that, in comparison to their cisgender counterparts, nonbinary and binary transgender individuals experience poorer mental health, such as higher rates of depression, anxiety, psychological distress, suicidality, and self-harm behaviors (Lefevor et al., 2019). Despite these disparities, mental health services are often ineffective in meeting the needs of the transgender population (Budge et al., 2017; Israel et al., 2008), and both nonbinary and binary transgender individuals report experiencing microaggressions within therapeutic

contexts (Morris et al., 2020). Importantly, then, the NBGM scale may help mental health service providers gain a better understanding of the microaggressions that nonbinary individuals encounter and how these microaggressive experiences come to impact these individuals' health and well-being. In turn, providers may be better equipped to help their nonbinary clients cope with microaggressive experiences. The measure also may foster better therapeutic relationships by helping providers avoid communicating microaggressions to their nonbinary clients.

Conclusion

In conclusion, the outlined series of studies resulted in a 23-item measure of nonbinary microaggressions comprised of five subscales: Negation of Identity, Inauthenticity, Deadnaming, Trans Exclusion, and Misuse of Gendered Terminology. Overall, the measure demonstrated good scale score reliability, and evidence for the scale's convergent and incremental validity were provided. Given the incremental nature of psychometric testing, further assessments of the measure's construct and factorial validity are needed. However, importantly, the NBGM scale will allow future researchers to more accurately examine the relationship between microaggressions and various health outcomes, as well as identify factors (e.g., social support) that may decrease the negative impact of microaggressive experiences on nonbinary individuals' lives.

Notes

1. The term "transgender" is used in the present paper to describe individuals who identify with a gender different from their sex assigned at birth (McFarland et al., 2018).
2. More specifically, nonbinary individuals may identify with a gender that falls between or outside the gender binary (e.g., intergender); with multiple gender identities simultaneously (e.g., androgyne) or at different times (e.g., bigender, genderfluid); or as not having a gender at all (e.g., agender; Matsuno & Budge, 2017). For more information on nonbinary identities, please see Abrams (2019).
3. A large number of participants (i.e., $n=47$) did not specify their age. However, results from chi-square tests indicated that these participants did not significantly

differ from those who provided their age on any of the remaining demographic variables. Thus, their data were not removed.

4. For example, the item "A family member has used gendered terminology (e.g., "daughter," "son") to refer to me even after I had told them about my gender identity" was removed as it did not fit the theme of its component (i.e., Negation of Identity).

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