12-20-2017

# Validation of the Multilayered Gender Identity Questionnaires

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A Dissertation Submitted to The Graduate School at the University of Missouri-St. Louis
in partial fulfillment of the requirements for the degree
Doctor of Philosophy in Psychology with an Emphasis in Clinical-Community
Psychology

August 2018

Advisory

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Table of Contents

Abstract

Gender identity shapes the ways transgender adults experience themselves and relate to the world around them. Although research and theory suggest that gender identity is a multidimensional construct, most measures of gender identity have viewed gender as primarily a unitary construct tied to the gender binary. The aim of this study was to develop and validate the Multilayered Gender Identity Questionnaires (MGIQ), a set of measures of gender identity, in a sample of transgender adults. Qualitative data collected through focus groups with transgender adults ($N = 7$) helped refine and develop these measures. A series of analyses involving a larger sample of transgender adults ($N = 521$) established the factor structure of the MGIQ. The final MGIQ contained four scales corresponding to different gender identities (Trans, Nonbinary, Unassigned Gender, and Assigned Gender); each scale had three subscales representing the constructs of community, physical identity, and centrality. The current study demonstrated that the finalized MGIQ demonstrates internal consistency, convergent validity with identity labeling, social identification, and involvement in activism, and divergent validity from measures of gender role identification and psychological distress. The MGIQ also demonstrated incremental validity over an existing measure of gender identity in predicting social identification and involvement in activism. The clinical implications of this measure in conceptualization and treatment planning, as well as the types of research questions the MGIQ can be used to address, are also discussed.

Validation of the Multilayered Gender Identity Questionnaires

Gender identity is a core aspect of how individuals experience themselves socially and interpersonally (Kozee, Tylka, & Bauerband, 2012). Measures that thoroughly explore gender identity can provide rich information about the ways in which gender identity shapes both individual experience and psychosocial outcomes. For racial and sexual minorities, identity variables have been shown to relate to perceptions of discrimination, coping with these experiences, and overall psychological well-being (Burron & Ong, 2010; Frost & Meyer, 2012; Jones, Lee, Gaskin, & Neblett Jr., 2014; Puckett, Levitt, Horne, & Hayes-Skelton, 2015; Rucker, Neblett Jr., & Anyiwo, 2014; Sellers & Shelton, 2003). Identity measures that thoroughly explore key factors of gender identity are necessary to establish the role these factors play in the experiences and psychosocial functioning of transgender individuals.

Gender identity measures must attend to the way gender identity is experienced by the target population. Measurement of gender identity is particularly important to transgender individuals, who may feel their gender identities are poorly understood by their clinicians (Benson, 2013). The traditional view of gender identity assumes that two polarized categories, man and woman, comprise the entirety of gender identity (see Butler, 2004, for a critique of this limited view). Yet many individuals, particularly among those who identify as transgender, feel their identities do not fall neatly into one of these two categories. They may feel a single, stable category does not adequately describe their identities, or they may feel that they embody both or neither of the socially prescribed identities of "man" and "woman" (Nagoshi, Brzuzy, & Terrell, 2012). Most measures of gender identity in psychology remain tied to the traditional view and thus do

not incorporate these individuals' experiences into the field's understanding of how gender identity shapes psychosocial outcomes.

Measures of gender identity consistent with the lived experience of transgender individuals are essential for both clinical and research settings. Measurement can further clinicians' knowledge and understanding of clients' gender identities by providing a framework for conceptualizing gender identity more thoroughly than traditional assumptions allow. Such understanding allows for a stronger therapeutic alliance and more targeted attention to the particular needs of the client. Furthermore, the conclusions drawn from research, particularly regarding the experiences of transgender clients, may be limited or inaccurate if measures are based on traditional, non-inclusive assumptions about gender identity.

The current study will focus exclusively on gender identity in adults, as clinical psychology has traditionally examined gender identity concerns separately in children and adults. In particular, research and clinical practice around gender identity concerns in children focus more on overt behavior, whereas adult gender identity is primarily understood through the adults' subjective experience (Kamens, 2011). Given the current study's emphasis on gender identity as subjective, the study of gender identity in children and adolescents is not considered here.

### Definitions

The definitions of terms such as "sex," "gender," and "gender identity" are often ambiguous and inconsistent in research and theoretical literature (Muehlenhard & Peterson, 2011); as such, the following definitions of key terms are provided. In this paper, *sex* is defined as the sex category assigned at birth. Although more complex and

nuanced definitions exist (e.g., Rosenblum & Travis, 2003) and are essential in many

contexts, the current paper focuses on sociocultural relationships rather than the effect of

sex hormones or chromosomes on gender identity. As such, assigned sex category is the

most appropriate definition for the current paper.

The current paper will distinguish between "gender expression" and "gender

identity." *Gender expression* is defined here as one's self-presentation and the ways in

which one acts out socially expected roles associated with the male and/or female sex

within a specific cultural and historical context (Rosenblum & Travis, 2003; West &

Zimmerman, 1987). Note that some sources simply describe gender expression as

"gender," but given the explicit contrast between gender expression and gender identity

in the current paper, the term "gender expression" is used for clarity. *Gender identity* here

refers to the private experience of gender (Money & Ehrhardt, 1972) and one's

perception of oneself relative to the cultural norms and expectations placed on people on

the basis of their sex. Such cultural norms can be described as *gender roles*: behaviors

and traits a culture defines as conveying the status of being a man or woman. Note that

the current paper's definition of gender identity contrasts with the assumed definition in

Wood and Eagly (2015), who describe measures of endorsement of stereotypical

masculine and feminine traits as gender identity measures. In the current paper, though

one's *identification* as masculine or feminine may be an aspect of one's gender identity,

endorsement of stereotypically gendered traits is not viewed as part of gender identity. To

clarify references to a specific binary gender category relative to biological sex, the term

*assigned gender* will be used to refer to the gender typically associated with one's

assigned sex (i.e. "man" for natal males, "woman" for natal females), while the term

*unassigned gender* will be used to refer to the gender typically associated with the other sex.

      *Gender dysphoria* refers to an individual's distress due to dissatisfaction with their assigned sex, which may include negative feelings about their prescribed gender roles and/or their physical body. *Transgender* refers to any individual whose gender identity is inconsistent with their assigned sex (Fassinger & Arseneau, 2013); notably, this definition includes individuals who have gone through social, legal, or medical gender transition but do not personally identify with the term "transgender." Note that the current paper does not use the term, *gender non-conforming* (Coleman et al., 2011), as the current paper focuses on personal gender identity as opposed to gender nonconforming behavior. The term *nonbinary* refers to any gender categorization that rejects the primacy of the gender binary and assumed coherence between biological sex and gender identity and can therefore be used to refer to a subset of transgender individuals who may use identity labels such as *genderqueer* or *androgynous* to describe their identities. In the current study, the term *gender minority* refers to individuals who identify to any extent with a gender identity besides "man" and "woman," including individuals who identify primarily as men or women but also hold "transgender" as an identity label. Individuals with a disorder of sex development (i.e. a condition in which the reproductive tract develops in an atypical manner; Coleman et al., 2011) are not categorized as transgender on the basis of such a condition, and are only categorized as transgender if they identify with a gender other than "man" or "woman."

**Traditional Assumptions in Existing Measurement Strategies**

The dominant model of gender identity in clinical psychology and mainstream society has assumed that adult gender identity divides into a natural binary between male/man and female/woman, with these distinctions established on the basis of biological sex (Butler, 2004; West & Zimmerman, 1987). This essentialist model holds several assumptions about gender identity. These assumptions manifest in existing measures to varying degrees.

1. *Gender identity is unitary*. Traditionally, gender identity has been viewed as a monolithic construct, in which identifying as a man or a woman implies identifying with all the roles and traits associated with these groups (Daley & Mulé, 2014; Kozee et al., 2012, West & Zimmerman, 1987). For example, our modern conception of dominant masculinity involves physical strength and institutional and political power (Pascoe, 2007). The unitary assumption holds that all men therefore identify with and aspire to obtain these qualities.

2. *Gender identity is polarized.* The traditional model also holds that "man" and "woman" are opposites. As such, individuals who reject identity as a man are assumed to embrace an identity as a woman, and vice versa (Kamens, 2011; Markman, 2011).

3. *Variance in gender identity is congruent with dysfunction*. Particularly relevant for psychology, this assumption holds that an individual's gender identity can primarily be assessed through the lens of dysfunction or dysphoria. Traditionally, gender identity has been evaluated from a *dysfunction-focused* perspective. In such an approach, a person's gender identity is simply categorized as "dysphoric"

(i.e. biological sex is not consistent with gender identity), or "non-dysphoric"

(i.e. biological sex is consistent with gender identity). As such, measures need

only attend to dysphoria (or the match or mismatch between biology and identity)

to determine all relevant information about gender identity (Lev, 2013). On the

basis of this assumption, measures of gender identity have been heavily informed

by diagnoses in the Diagnostic and Statistical Manual of Mental Disorders

(DSM): the Gender Identity Disorders in the Fourth Edition, and the Gender

Dysphoria diagnosis in the Fifth Edition (American Psychiatric Association,

2000; 2013).

### Manifestations of Traditional Assumptions in Existing Measurement Strategies

Most approaches to assessing and measuring gender identity within psychology

rely on one or more of these traditional assumptions. Researchers and clinicians rely on a

range of methods of assessing gender identity, ranging from the use of one or two simple

questions (Tate, Ledbetter, & Youssef, 2013) to more complex measures (e.g.,

Deogracias et al., 2007). The appropriate measurement strategy varies based on the

research questions. Nonetheless, the conclusions drawn from research are constrained by

the assumptions manifest in the researchers' approach to measuring gender identity.

**One- or Two-Question Approaches.** The most common, and most basic, method

of assessing gender identity is through a single question: "What is your gender?" (see

Tate et al., 2013, for a discussion), with a limited set of response choices. Commonly,

these response choices include only "Male" and "Female," demonstrating a unitary and

polarized view of gender identity. Yet for researchers who wish to examine gender

variance or transgender identities, one or more additional response choices may be added, with "Transgender" as a common choice (e.g., Melendez et al., 2006).

Tate et al. (2013) compared the one-question method (i.e. "What is your gender?") to a two-question approach to assessing gender identity. Their two-question method asked, "What is your current gender identity?" and "What gender were you assigned at birth?," with response choices of "female, male, transgender, genderqueer, and intersex" for the former question and "female, male, and intersex" for the latter. This method, though useful for categorizing people who utilize certain identity labels and avoiding a strict binary approach to gender identity, maintains that gender identity is a unitary construct. As such, it has limited utility for identifying the specific factors of gender identity that predict outcomes in research.

Bockting, Benner, and Coleman (2009) also utilized a two-question approach to assessing gender identity in a study examining the sexual identity development of female-to-male transsexuals who identified as gay or bisexual. Unlike Tate et al. (2013), however, they utilized five-point Likert scale items, which inquired about the degree to which participants "psychologically experience" themselves as men and as women. Kuyper and Wijsen (2014) expanded on this approach in an exploration of gender identity and gender dysphoria in the Netherlands by using the same scales to categorize participants identities' as ambivalent (equal identification between both sexes) or incongruent (stronger identification with the unassigned gender) on the basis of their responses to these two Likert scale items. These authors also assessed gender dysphoria using two four-point Likert scale items, inquiring about dislike of their biological sex and desire for hormones or surgery to change their gender presentation.

The practice of using two Likert scale items to assess gender identity, though simple, rejects some of the traditional assumptions about gender identity. Through conceptualizing gender identity along two separate continua, it rejects the notion that gender identity is polarized, such that identification as female implies lack of identification as male (and vice versa). By differentiating between gender identity and gender dysphoria, the original authors (Bockting et al., 2009) demonstrated a rejection of the assumption that gender identity can be considered along a continuum from congruent (functional) to incongruent (dysfunctional). Nonetheless, Kuyper and Wijsen's (2014) approach to scoring the scale maintained the assumption that gender identity is unitary and utilized a dysfunction-focused approach, as these researchers reduced the responses on the "male" and "female" continua to three categories: congruent with biological sex, incongruent with biological sex, or ambivalent.

**Transgender Identity Questionnaire.** Docter and Fleming (2001) published an article describing an unnamed scale developed to explore the component elements of the experience of transgender individuals who were assigned male at birth. The authors developed a scale to broadly assess beliefs and behaviors presumed important for transsexualism and transvestism (i.e., cross-dressing), as determined by the authors' clinical experience and collaboration with individuals who identified as transsexuals or transvestites. The broad scale assessed experiences beyond gender identity. Scale items were administered to 516 natal males who described themselves as transvestites or transsexuals recruited from transgender conventions and support groups in the United States and Canada. Participants were primarily European American (90%). Using factor analysis of the broader scale, Docter and Fleming identified a 26-item subscale, which

they described as assessing the participants' "transgender identity." The items on this

scale assessed these natal males' desires to live as women (e.g., "I wish I had been born a

woman," "I'd prefer to live as a full-time woman") and their self-reported identity as

women (e.g., "My true gender is feminine," "The 'real me' is a woman"). Transsexuals

had higher scores on this scale than transvestites, indicating a higher degree of

identification as women. Because male-to-female transsexuals identify primarily or fully

as women and male transvestites (by definition) periodically dress in feminine attire

without identifying fully as women, the finding of higher scores among the transsexual

group demonstrated criterion validity. Factor loadings of the individual items on the

subscale ranged from .48 to .92.

This scale implicitly defined transgender identity among natal males as the desire

to live as a woman, and, consistent with the assumption that gender identity is polarized,

presumed that individuals who identified as women on this scale did not identify as men.

The scale itself also reflected a unitary view of gender identity; scale items primarily

explored participants' feelings about their physical presentation as female, without

acknowledging other potential relevant factors of gender identity.

**Gender Identity/Gender Dysphoria Questionnaire for Adolescents and**

**Adults (GIDYQ-AA).** Deogracias et al. (2007) developed and reported on a 27-item

measure of gender identity and dysphoria. Items were developed based on the authors'

clinical experience working with patients with gender dysphoria. This measure was

administered to an undergraduate control group and a clinical sample of patients in

treatment for Gender Identity Disorder. The undergraduate sample was racially diverse

(53% European American, 29% East or South Asian, 18% other); the clinical sample was

less so (78% European American). Factor analysis revealed that a single factor solution

best suited the data. Item content focused on participants' feeling like the "opposite" sex,

satisfaction with their current sex, gender presentation, and thoughts of oneself as

"transgendered." Higher scores on the measure indicated greater levels of comfort with

one's biological sex and assigned gender. The GIDYQ-AA demonstrated very strong

internal consistency (Cronbach's alpha = .86). The measure significantly differentiated

between the clinical sample and the undergraduate sample, demonstrating criterion

validity.

   The GIDYQ-AA embodies the assumptions that gender identity is unitary,

polarized, and dysfunction-focused. The authors describe the scale as follows:

> "…the gender identity/gender dysphoria questionnaire for adolescents and adults
>
> (GIDYQ-AA), which was designed to assess gender identity (gender dysphoria)
>
> dimensionally…we conceptualized gender identity/gender dysphoria as a bipolar
>
> continuum with a male pole and a female pole and varying degrees of gender
>
> dysphoria, gender uncertainty, or gender identity transitions between the poles"
>
> (371).

As such, the authors explicitly label gender identity as polarized, such that any degree of

identification as a woman implies less identification as a man, and low levels of

identification with both masculinity and femininity are not possible. The scale also

conflates any lack of congruence between sex and gender identity with gender dysphoria,

regardless of distress. Item content (e.g., "felt more like opposite sex," "thought of self as

opposite sex") primes participants to consider their gender identities relative to their

biological sex, thereby reducing their gender identity to their feelings of connection to

their male and female anatomy and the gender roles assigned to these sexes. By reducing gender identity to gender dysphoria, the GIDYQ-AA fails to account for the elements of gender experience that are not captured by one's satisfaction or dissatisfaction with one's biological sex.

The GIDYQ-AA has a number of notable strengths. As noted, it established criterion validity through its comparison of clinical and non-clinical samples, and it is useful as a measure of gender dysphoria for individuals who experience their identities as falling on a single male-female continuum. This measure may, however, have less utility for those who identify as genderqueer or nonbinary; indeed, the measure may fail to capture the relevant elements of the experience of such individuals.

## Evidence Contradicting Traditional Assumptions

Although existing measures of gender identity (e.g., Deogracias et al., 2007; Docter & Fleming, 2001) show strong internal consistency and effectively differentiate between clinical and nonclinical samples, more recent research conducted with transgender populations suggests that several assumptions of the traditional model are not always appropriate for these populations, which thus undermines the utility of measures that reflect these assumptions.

Many studies conceptualize transgender individuals in two categories: male-to-female (MtF) and female-to-male (FtM) (e.g., Iantaffi & Bockting, 2011; Ruppin & Pfäfflin, 2015; Stephens, Bernstein, & Philip, 2011). This categorization implies that gender is binary; individuals who do not identify as female must therefore identify as male. Yet a number of transgender individuals choose to reject these labels. Dugan, Kusel, and Simouney (2012) found that, when transgender participants were given only

the options of MtF and FtM to label their gender identity, 37% of them chose not to respond. Though some of these participants may have chosen not respond due to other factors (e.g., discomfort with reporting), other studies report findings suggesting a binary conceptualization of gender identity is too limiting. When given the choice between transsexual, drag, cross-dressing, and "other," 29.5% of participants selected the "other" category (Rosser, Oakes, Bockting, & Miner, 2007). Descriptions from transgender individuals in qualitative studies also challenge the binary assumption. One participant noted, "[people] assume female-to-male and male-to-female, and don't realize that there's probably over a hundred trans-identities" (Diamond & Butterworth, 2008, p. 368).

Gender identity, particularly in transgender individuals, may not present as polarized or unitary. A polarized view of gender identity implies that some degree of identification as a man cannot comfortably coexist with identification as a woman. Yet researchers have found that, to include all relevant elements of transgender individuals' gender identities, multiple labels may be necessary, some of which imply this coexistence. In consulting with other LGBT researchers and counselors, Kuper, Nussbaum, and Mustanski (2012) derived ten different identity labels, including genderqueer, two spirit, bigender, and intergender, all of which were endorsed by some members of their online sample of 292 transgender individuals. The label "androgynous" was also reported due to several participants providing it as a written response. Of these participants, 55.1% identified as "genderqueer," a term which suggests an identity that does not fit a binary view of gender. In addition, participants endorsed an average of 2.5 gender identity labels, which may reflect participants' feelings that their identities cannot be reduced to a single, unitary entity, or to a polarized view in which identity as a man

and identity as a woman are irreconcilable. One participant from a qualitative study conducted by Nagoshi et al. (2012) noted, "Some days I feel more male, some days I feel more female, but for the most part I feel I'm really neither or both" (p. 415), suggesting that, for this individual, gender identity does not lie on a single continuum from male to female.

Recent evidence also challenges the assumption that gender identity is stable across time. By exploring individuals' past gender identity labels, Kuper et al. (2012) found changes in identity labels. For example, 40.1% of the sample endorsed previously but not currently identifying as male, while 10.3% of the sample endorsed previously but not currently identifying as bigender. Although some participants may have changed identity labels without experiencing changes in their underlying identities, evidence from qualitative research suggests that, for others, changes in gender identity likely ran deeper than the labels. One participant in a qualitative study noted, "I think it's more fluid [compared to the binary of gender identity]. Because I think people switch back-and-forth," (Nagoshi et al., 2012, p. 415). Another stated, "I feel it's such a socially-constructed thing, and I feel that it's not something that's as stable as a personality, I feel like it's always changing with every year" (p. 415).

### Measurement Approaches Challenging Traditional Assumptions

Many researchers and theorists have sought to explore the ways in which gender identity defies the assumptions of the traditional model, particularly among transgender individuals. Although some researchers (e.g., Diamond & Butterworth, 2008; Nagoshi et al., 2012; Williams, Weinberg, & Rosenberger, 2013) have used interviews and qualitative analyses to begin to explore the nuances of gender identity, others have turned

to self-report questionnaires to provide quantitative data regarding transgender

individuals' experience of their gender identities.

**Descriptive Questionnaires**

Though most measures of gender identity have been tied to traditional

assumptions, some researchers have examined the experience of transgender individuals

using descriptive questionnaires that challenge these assumptions. Factor and Rothblum

(2008) provided 176 transgender individuals with the Gender

Expression/Experiences/Identities Questionnaire (GEEIQ), which explored numerous

facets of respondents' experience, including assigned sex, gender identity labels,

preferred pronouns, comfort with use of gendered restrooms, use of medical procedures

to transition, motivations for "cross dressing," and feelings of connection to transgender

communities. This questionnaire revealed the potential for individuals to experience their

gender identities as multifaceted, nonbinary, and fluid, and provide rich preliminary data

regarding the ways in which transgender individuals experience their gender identity.

Responses on the measure nonetheless were limited to descriptive analysis because the

measure did not produce any meaningful sum or average score that would allow for

quantitative analysis. Quantitative measures are necessary to adequately explore the

relationships between gender identity and outcomes.

**Transgender Congruence Scale**

One promising quantitative measure of certain components of gender identity, the

Transgender Congruence Scale, examines the degree to which transgender individuals

feel acceptance towards their gender identity and feel a sense of unity between their

physical presentation and their identity (Kozee et al., 2012). When validated on a sample

of 162 self-identified transgender individuals recruited from college and community

LGBTQ support groups, a two-factor model best fit the items on this scale. The identified

factors reflected Appearance Congruence (e.g., "My physical appearance adequately

expresses my gender identity") and Gender Identity Acceptance (e.g., "I am happy that I

have the gender identity that I do"). The internal consistency for the total scale was strong

($\alpha = .92$), and it demonstrated incremental validity in predicting anxiety and depression

beyond the number of steps taken to physically transition to the other sex. The scale also

demonstrated discriminant validity in that it did not correlate with measures of social

desirability and the search to create meaning in one's life. By focusing on one's

subjective experience of one's gender identity over the degree of adherence to the binary

categories of male and female, the Transgender Congruence Scale rejects the assumption

that gender identity is polarized by allowing for nonbinary identities. Furthermore, it

rejects the unitary assumption by providing evidence for two distinct factors of gender

identity experience.

The Transgender Congruence Scale demonstrates the potential utility in

challenging traditional assumptions about gender identity. By acknowledging the nuance

in gender experience, the authors were able to differentiate aspects of gender identity and

demonstrate each of their unique relationships to psychosocial outcomes. For example,

the Gender Identity Acceptance subscale showed a weaker relationship to a measure of

life satisfaction than the Appearance Congruence Subscale, suggesting unique importance

of physical presentation in life satisfaction for transgender individuals. Such data would

not be possible using scales tied to traditional assumptions, which reduce gender identity

to one's experience of oneself as a man or a woman.

**How Research in Other Areas of Identity Can Inform Gender Identity**

**Measurement**

By expanding beyond traditional assumptions about gender identity, measures allow for more nuanced exploration of identity among transgender people. To the extent that they reject the view that gender identity falls along a single male/female continuum, new measures of gender identity must identify the specific components of gender identity relevant for predicting outcomes among transgender people. Research in other areas of identity can inform this process.

*Centrality*, or the degree of significance one assigns to a certain identity, has emerged as a key component of racial identity (Sellers & Shelton, 2003). Research suggests that African-Americans for whom racial identity is more central perceive more experiences of discrimination (Burron & Ong, 2010; Sellers & Shelton, 2003) and process these instances differently than African-Americans for whom racial identity is less central (Jones et al., 2014; Rucker et al., 2014). Although a more central racial identity appears related to perceiving more discrimination, it may also protect African-Americans from experiencing negative mental health outcomes as a result of this discrimination (Sellers, Caldwell, Schmeelk-Cone, & Zimmerman, 2003).

Centrality may be a key element of gender identity, particularly for people who identify as transgender or who have undergone some form of gender transition. These individuals face frequent experiences of discrimination in areas such as housing, employment, healthcare, and education (American Psychological Association, 2015). Transgender people, like racial minorities, may process such experiences differently if gender is a more central aspect of their identities. Additionally, individuals for whom a

minority gender identity is more central may act in ways that trigger more discriminatory

behaviors by defying norms of gender expression. A related construct, gender

schematicity (i.e., the degree to which gender schema are readily accessible to an

individual across situations), relates to non-transgender individuals' adherence to gender

norms and their use of language in gender-typed ways (Palomares, 2004), suggesting that

the centrality of one's gender identity affects behavior. Measures of gender identity that

incorporate centrality can allow researchers to investigate the ways in which this aspect

of identity shapes the behavior and outcomes of transgender individuals, as well as the

ways in which it influences how they experience, process, and cope with discrimination.

Though measures of gender identity have primarily explored individual

experiences, feelings of belonging to a community of like-minded others may be a key

aspect of identity for many transgender people. Humans appear to have a fundamental

need to belong, and connection to others with similar identity group membership stands

out as a key mechanism for meeting this need (Baumeister & Leary, 1995). Factor and

Rothblum (2008) explored such feelings of belonging in the Gender

Expression/Experiences/Identities Questionnaire with items that inquired about the

degree to which respondents feel connected to the transgender community, as well as the

lesbian, gay, and bisexual (LGB) community. Nuru (2014), in adapting Hecht's (1993)

Communication Theory of Identity to transgender individuals, highlighted this

component of identity, suggesting that one's sense of belonging to a certain group of

individuals becomes an axis by which individuals understand their own identities.

Although few researchers have explored the relationship between feelings of community

belonging and psychosocial outcomes in transgender people, research on sexual

minorities suggest this component of identity can affect such outcomes. In particular, feelings of community belonging affect the behavior and psychological well-being of sexual minorities; a stronger sense of connection or belonging with a gay, lesbian, and/or bisexual community predicts lower internalized homophobia, greater behavioral involvement in LGBT community activities, and increased psychological and social well-being, as well as serving as a mediator in the relationship between internalized homophobia and psychological distress (Frost & Meyer, 2012; Puckett et al., 2015).

Though research in other areas of identity suggests potentially relevant areas of gender identity, one's attitude towards one's physical presentation appears to have a unique significance for gender identity that does not translate to other identity categories. Several measures and questionnaires that explore gender identity among of transgender people attend to participants' desires and behaviors regarding their physical presentation (e.g., Deogracias et al., 2007; Docter & Fleming, 2001; Factor & Rothblum, 2008; Kozee et al., 2012; Kuper et al., 2012). As such, measures of gender identity are likely to be incomplete if they do not attend to the ways in which respondents do or do not view their physicality as a way of expressing their gender identities.

### A Model of Gender Identity for the Proposed Measure

In rejecting the traditional assumptions about gender identity, new measurement approaches must orient gender identity in domains other than a single axis from male to female and consider the ways in which gender identity can influence one's psychosocial functioning. As noted above, research and theoretical literature suggests two key components of gender identity that are likely to relate to adjustment for transgender individuals: *centrality*, or the degree to which gender identity is a significant and salient

component of identity for that individual, and *community*, or the degree to which the

individual feels a sense of connection and belonging to others on the basis of gender

identity. As such, the current study will aim to validate a measure of gender identity that

investigates these two components.

In addition to centrality and community, feelings about one's physical

presentation serve as a key area of exploration for many transgender individuals.

Although researchers should avoid reducing the entirety of gender identity to medical

transition (APA, 2015), the perception of oneself relative to physically expressed gender

cues remains a key factor of one's experience of oneself as gendered. Prior research has

explored the relationship between appearance congruence and outcomes, and has found

that greater satisfaction with one's physical embodiment and presentation predicts

positive mental health outcomes for people who identify as transgender (Kozee et al.,

2012). Yet few researchers have explored physical embodiment as a component of

identity, or have conceptualized the ways in which one envisions one's physical

presentation and gender expression as central to one's gender identity. Some transgender

people may view physical presentation as a core aspect of their gender identity, while

others may assign relatively little importance to physical presentation. Furthermore,

rejecting the assumption that gender identity is unitary allows individuals to experience

their identities as multifaceted, and they may prioritize physical embodiment differently

for the different aspects of their identity. For instance, an individual who identifies to

some degree with both a nonbinary gender identity (e.g., genderqueer) and with a

masculine identity (e.g., transmasculine) may place a great deal of importance on the

physical expression of his nonbinary identity while viewing the physical expression of his

masculine identity as less paramount. The degree to which individuals tie their identities to their physical presentation may predict future desire for gender-confirming surgeries and hormone treatments, and may mediate the relationship between satisfaction with physical presentation and life satisfaction. In an effort to further explore these areas of identity, the measure used in the current study will consider the degree to which one prioritizes physical appearance as an aspect of one's gender identity. The term *physical identity* will be used to describe this component of gender identity.

Identity researchers have highlighted several others areas of identity that are not explored here. The three components of identity used in the current study – centrality, community, and physical identity – have been chosen for their apparent relevance for transgender people based on the existing literature. Notably, the current study does not explore two areas often described along with centrality in the racial identity literature: regard and ideology. When described as a component of identity, *regard* refers to one's feelings and judgments about the identity group to which one belongs, and *ideology* refers to beliefs about how members of one's own identity group should act (Rucker et al., 2014; Sellers & Shelton, 2003). For an individual who identifies as transgender, a measure of regard might explore the degree to which that individual views transgender people positively, and a measure of ideology might explore the degree to which this individual believes transgender people need to assimilate to the norms and expectations of non-transgender individuals. These characteristics are not explored here, as the definition of identity used in the current study refers to feelings and beliefs about the self, whereas regard and ideology instead refer to beliefs about an external category (e.g., "transgendered" people in general) with which an individual identifies. Nonetheless,

these characteristics may relate to one's gender identity; individuals who hold more negative views of transgender people may view their identity as transgender as less central, for example.

Rejecting the assumption that gender identity is unitary allows for multifaceted gender identities that cannot necessarily be reduced to a single gendered self that is uniform across contexts. Furthermore, these different facets of identity may be expressed differently across the three components of identity being explored in the current study. Hypothetically, an individual who was born female and identifies as a transgender man may view his identity as a man as highly central and may prioritize the physical expression of this identity, but feel little sense of connection and belonging with other men. Conversely, his identity as transgender may not be highly central, and he may have no interest in physically presenting as transgender, but he may feel a strong sense of connection and belonging with other transgender individuals. Measures that reduce identity to a unitary entity and assess centrality, community, or physical identity for that entity do not allow for such variability, yet this variability may drive some differences in experiences and outcomes among transgender individuals.

Additionally, identification with minority gender identities has become more prevalent in recent years (Solomon, 2012). Individuals with these identities likely have a somewhat different experience of their gender identities than those who transition from one binary identity to another; they may affirm identities that are unique and do not adhere to culturally recognized gender categories (Coleman et al., 2011). Although male- and female-identified transgender individuals who pursue physical transition often seek to conform to masculine or feminine gender norms and expectations, respectively,

individuals who identify with a minority gender often challenge these norms and expectations simply by virtue of their identities. Systems of care designed for transgender individuals who primarily identify with a male and female gender identity may be poorly suited for those who do not aspire to these categories (APA, 2015).

One's identity as a man, a woman, and/or a minority gender identity drives one's relationships with larger society around the issue of gender. These distinct identities are all expected to influence one's social behaviors, physical presentation, and relationships with broader communities in different ways. As such, the current study will examine identity centrality, sense of community, and physical identity separately for each relevant identity category (man; woman; gender minority). An individual who identifies with multiple categories may therefore show distinct identity patterns of each category.

## The Present Study

Prior measures of gender identity for transgender people have primarily focused on gender dysphoria. The constructs of identity centrality and community, which have demonstrated predictive value for racial and sexual minorities respectively, have only been explored in a cursory way for this population. Furthermore, although physical identity likely moderates the demonstrated relationship between appearance congruence and psychological well-being, this construct has not been thoroughly explored within a transgender population. These limitations in past measures will be addressed in the present research.

The aim of the present study is to develop and validate a new set of measures of gender identity, the Multilayered Gender Identity Questionnaires (MGIQ), that address these gaps in the research literature. The first phase of the study, the Item Development

Phase, assessed the face validity and construct validity of the measures with a small

community sample of transgender individuals. Next, the Scale Development Phase

established the factor structure of the MGIQ. Finally, the Scale Validation Phase assessed

the revised measures in a large online sample of transgender individuals through

evaluating criterion validity, convergent validity, divergent validity, and incremental

validity.

<div align="center">**Item Development Phase Methods**</div>

**Participants**

For the Item Development Phase of the study, three semistructured interviews

were held to discuss the initial pool of MGIQ items with transgender individuals

recruited from a local transgender organization in St. Louis, Missouri. Participants were

eligible if they were 18 years of age or older and identified as transgender or gender

nonbinary, or if they had gone through social, legal, or medical gender transition. The

first interview was held with a leader in the organization who identifies as a transgender

woman (N=1). The second interview had a single participant (N=1) who identified as

transmasculine, and a third focus group interview (N=5) had individuals who identified

as transgender men, transgender women, and nonbinary.

**Procedure**

The original MGIQ items were constructed based on the research and theory

described above. Questions addressing identity centrality were adapted from measures of

racial identity for African-Americans (e.g., Sellers et al., 1997), while items addressing

sense of community were adapted from the Gender Expression/Experiences/Identities

Questionnaire (Factor & Rothblum, 2008) and research on sexual minorities (e.g., Frost

& Meyer, 2012). Questions addressing physical identity were adapted from the

Transgender Congruence Questionnaire (Kozee et al., 2012) to better suit the construct of

physical identity.

The structure of the initial MGIQ involved three questionnaires with parallel sets

of items asking participants about their identities as a Man, as a Woman, and as a Gender

Minority. Each set of items began with a question of whether the participant identifies as

that identity "to any extent"; individuals who denied identifying with a certain identity

category would not complete those items. As a result, participants could complete

between one and three different scales depending on the number of gender categories

with which they identify.

The organization leader met with me in a public location to discuss the MGIQ.

She completed an informed consent in which she agreed to participate in the interview

and to have her responses audio recorded. Following the informed consent, she reviewed

the MGIQ, read and completed the items, then proceeded with a semistructured interview

regarding her reactions to the measures. Interview questions (Appendix A) assessed

general reactions to the scales, the degree to which important aspects of gender identity

are omitted by the measures, the clarity of scale items, reactions to the structure of the

scales, and the balance between inclusivity and clarity on the scales. During the

interview, I proposed possible modifications to the measure on the basis of her feedback

to establish whether she perceived that these modifications improved the validity of the

questionnaires, and I noted modifications that she agreed would be helpful. Preliminary

modifications were made to the measures prior to the subsequent interview and focus

group.

Following the individual interview, participants were recruited through the

Facebook page of the same transgender organization to achieve a small sample of

transgender individuals to participate in an interview or focus groups. Interviews (N=1

and N=5) took place in a public location known for being a safe space for sexual and

gender minorities; responses were again audio recorded. Following the informed consent,

participants completed the MGIQ and proceeded to a semistructured interview (Appendix

A). All participants in the Item Development Phase received a $10 gift card for

participation.

<div align="center">**Item Development Phase Results**</div>

After the individual interview with the organizational leader, the language and

instructions in the measures were modified to emphasize participants' ability to identify

with more than one identity category and to provide a more thorough list of possibility

identity labels in the area where participants write in their own identity labels; Appendix

B reflects the updated measure. Participants in the later interview and focus group

indicated that the MGIQ demonstrated face validity. However, they expressed concern

about the conflation of transgender and nonbinary identities within the Gender Minority

scale, with nonbinary participants indicating that they relate to their trans identities

differently than their nonbinary identities. All participants advocated separating the

Gender Minority scale into two separate scales (Trans and Nonbinary). They also

suggested displaying the Trans scale first to improve the clarity of the task. Finally, they

suggested additional items to assess sense of belonging within a gender community ("I

would like to go to a political rally targeted to [gender group]").

The MGIQ items were updated based on this feedback by separating the Gender Minority scale into two scales: Trans and Nonbinary. On the scale, the term "Transgender" was changed to "Trans" to reflect more common colloquial usage within the community. The suggested community item was added, and the order of the scales was changed, with the Trans scale first, followed by the Man scale, the Woman scale, and the Nonbinary scale.

## Scale Development Phase Methods

### Participants

For the Scale Development Phase of the study, participants were recruited through transgender organizations in the St. Louis area, online forums that serve transgender individuals, Craigslist, and groups targeted to transgender individuals on social media sites (Facebook, Reddit). Participants were eligible to participate if they were over 17 years of age and identified with any gender identity other than the gender assigned at birth (i.e., any identity other than "Man" for natal males and any identity other than "Woman" for natal females; all adult participants who selected "Intersex" as their assigned sex were eligible to participate). Recruitment materials specified that participants needed to reside in the United States to participate due to the resources provided in the debriefing only being available for U.S. residents. Participants were screened for eligibility with questions about age, sex assigned at birth, and current gender identity; those who were under 18 years of age or who only identified with their assigned gender were not eligible to participate.

A total of 596 participants were initially deemed eligible and consented to participate; of these, 442 (74.2%) completed the measures used in the entire Scale

Development/Scale Validation studies. Participants who did not complete all measures were used for data analyses for the items they did complete. Of the initial 596 participants, 75 (12.6%) were excluded for all analyses. Participants were excluded for the following reasons: failing to complete any items after the first question (N=74; 98.7%), and a natal male participant who was initially deemed eligible because he selected "Man" and "Another gender identity" on the initial screener question and wrote in, "There are only two genders" (N=1; 1.3%). As such, a final sample of 521 participants were included in at least some of the analyses.

**Measures**

> **Sex.** Screener questions (Appendix C) were used to determine assigned sex.

> **Gender identity.** The initial Multilayered Gender Identity Questionnaires used in this study (Appendix D) contained four parallel scales (Trans, Man, Woman, Nonbinary) which each contained 16 items. Participants only completed scales for those gender categories with which they identified "to any extent"; as such, participants could complete between one and four of these scales. The implications of the binary gender scales ("Man" and "Woman") differ on the basis of biological sex. As such, these scales were recoded on the basis of one's sex into Unassigned Gender (i.e., the "Man" scale for natal females and the "Woman" scale for natal males) and Assigned Gender (i.e., the "Man" scale for natal males and the "Woman" scale for natal females); the final MGIQ items were coded along the Trans scale, Unassigned Gender scale, Nonbinary scale, and Assigned Gender scale.

> **Demographics.** A self-report questionnaire assessed demographic questions including race/ethnicity, education, income, and religious affiliation.

**Procedures**

Participants received a link to the study survey through the above-noted recruitment sites. After determining eligibility through screener questions, participants read and agreed to an informed consent statement and completed study measures. These measures included the above-listed measures as well as the measures used in the Scale Validation phase (see below). After completing all measures, participants selected a charity from a list to receive a $5 donation on their behalf as compensation for their participation.

**Data Analysis**

First, the number of missing responses for each MGIQ item were analyzed to identify if particular items showed high (>5%) proportions of missing data among respondents who completed that MGIQ scale. Confirmatory factor analysis (CFA) was then used to analyze the factor structure of the MGIQ. For each of the four scales (Trans, Nonbinary, Unassigned Gender, Assigned Gender), two separate factor structures were examined: A single-factor model containing all items, and three-factor model in which the factors corresponded to the constructs of Community, Physical Identity, and Centrality. The single-factor model was examined for the purpose of parsimony, as no prior research has examined these three concepts and established that they operate as separate but related constructs for gender identity. These two models were compared using comparative fit index (CFI) and root mean square error of approximation (RMSEA), as well as $\chi^2$-value.

Once the factor structure of the MGIQ was established, Cronbach's α was used to analyze the internal consistency of the MGIQ subscales. Pearson correlations between the subscales were also calculated.

## Scale Development Phase Results

**Descriptive analyses.** Participants' mean age was 25.6 (SD = 7.44). A total of 280 participants (53.7%) were assigned male at birth, 238 participants (45.7%) were assigned female at birth, and 3 participants (0.6%) were assigned intersex. Most participants (394; 84.9%) had completed at least some college, with 43.7% having earned a four-year-college degree; 10.9% of the sample did not report their level of education. The modal category for household income was less than $15,000; 50% of the sample reported a household income of $60,000 or below. The majority of the sample (63.9%) indicated that they do not identify with any religion. Demographic variables are summarized in Table 1.

In terms of their identification on the MGIQ, 480 participants (92.1%) identified as "trans" to some extent, 165 (33.1%) reported some degree of identification with a nonbinary gender, 461 (88.5%) endorsed some degree of identification with the unassigned gender, and 78 (15.0%) endorsed some degree of identification with assigned gender.

**Data screening.** Tables 2-5 demonstrate the proportion of missing responses for each item among participants who completed the scale; none of the items had missing responses for over 5% of participants. The four MGIQ scales were screened for multivariate outliers; Mahalanobis distance for each completed MGIQ scale was computed for each case. Distance scores were evaluated with a chi-square distribution

using 39.25 as the cutoff score (16 degrees of freedom, $p < .001$). In analyzing the MGIQ

Unassigned Gender scale, 23 cases were identified as multivariate outliers; 19 cases were

identified as multivariate outliers on the MGIQ Trans scale; and three cases were

identified as multivariate outliers on the MGIQ Nonbinary scale. No multivariate outliers

were detected on the MGIQ Assigned Gender scale. All analyses in the Scale

Development Phase were conducted twice, once including these outliers and once

excluding them. Because all results were nearly identical, multivariate outliers were not

excluded in the results reported here.

　　　Univariate normality was assessed for each MGIQ item. Using Ryu's (2005)

cutoffs of absolute values of above 2 for skewness and 7 for kurtosis as cutoffs for

significantly nonnormal data, Unassigned Gender scale items 3 (skewness = -2.57), 11

(skewness = -2.90), 12 (skewness = -3.03), and 16 (skewness = -3.31) were significantly

skewed. In addition, MGIQ Unassigned Gender scale items 11 (kurtosis = 11.43), 12

(kurtosis = 11.20), and 16 (kurtosis = 14.07) were significantly kurtotic. None of the

items on the other MGIQ scales were excessively skewed (range=-1.53 to 1.96) or

kurtotic (range = -1.60 to 3.00). Although some items were significantly skewed or

kurtotic, these items have been included without transformation for the purposes of

parsimony. Notably, Ryu (2011) noted that positive kurtosis is associated with deflated

chi-square values in confirmatory factor analysis and other forms of structural equation

modeling; as such, results of the present analysis are likely to underestimate the goodness

of model fit using the two fit indices described here (CFI and RMSEA), both of which

rely on chi-square.

**Factor structure.** For each identity scale, the single-factor model was compared to the three-factor model. For all four scales, the three-factor model fit the data significantly better than the one-factor model (see Table 6). For all four scales, however, the fit of the three-factor model did not meet recommended thresholds for the CFI or the RMSEA. Hu and Bentler (1999) suggested values of 0.95 or higher as indicative of good fit with the CFI, as well as values of 0.06 or below for the RMSEA (with values about 0.08 indicating poor fit). The original three-factor model did not meet these thresholds for any of the four scales, with CFI values of .927 for the Trans scale, .920 for the Nonbinary scale, .885 for the Unassigned Gender scale, and .875 for the Assigned Gender scale. In addition, the RMSEA values were .090 for the Trans scale, .096 for the Nonbinary scale, .096 for the Unassigned Gender scale, and .105 for the Assigned Gender scale.

Modification indices suggested covariation between items 1 and 2, indicating that these items may form a fourth factor. Both of these items loaded onto the Community subscale. The content of these items ("I like to spend time with groups of [gender] when given the opportunity" and "I feel a strong sense of connection to people who identify as [gender]") reflected a sense of fondness for people who identify with that gender, whereas the other items on the Community subscale ("I would enjoy going on a [gender]-only night out, assuming I would feel safe and accepted," "I would like to go to a political rally targeted to [gender]," and "I would like to attend events specifically designated for [gender], assuming I would feel safe and accepted") reflect interest in events that specifically target a gender group. The former items appear to reflect one's fondness for people who identify with that gender, while the latter appear to more closely

reflect one's feeling of belonging and involvement within a community of people who

belong to that gender. As such, Items 1 and 2 were excluded from the final MGIQ.

When analyzing the MGIQ using a three-factor model that excluded those two

items, modification indices suggested significant covariation between two items on

separate subscales ("The way I want to present myself physically is unrelated to my

identity as [gender]" on the Physical Identity subscale and "My identity as [gender] has

very little to do with how I see myself" on the Centrality subscale). For the sake of

parsimony, the former item was excluded, as the Physical Identity subscale had more

items (seven) than the Centrality subscale. resulting in a final MGIQ with 13 items on

each scale: three items on the Community subscales, five items on the Physical subscales,

and five items on the Centrality subscales.

The revised three-factor model resulted in significant improvement of fit for all

four scales ($\chi^2$(39) = 200.6, $p$ < .001 for the Trans scale; $\chi^2$(39) = 118.7, $p$ < .001 for the

Nonbinary scale; $\chi^2$(39) = 311.0, $p$ < .001 for the Unassigned Gender scale; $\chi^2$(39) = 89.3,

$p$ < .001 for the Assigned Gender scale). In addition, fit indices met the thresholds for

acceptable fit outlined by Hu and Bentley (1999) for the Trans, Nonbinary, and

Unassigned Gender scales (RMSEA = .067, .072, and .064 respectively; CFI = .959,

.960, and .960 respectively). The Assigned Gender scale did not meet these thresholds

(RMSEA = .090; CFI = .930). A ratio of five to twenty participants per parameter

estimate is recommended for confirmatory factor analysis (Suhr, 2006); with 16

parameters in this model (13 variables and three factors), the 73 participants who

completed the Assigned Gender scale achieved a ratio of only 4.6 participants per

parameter estimate. Because identification with the assigned gender is expected to be

relatively low in transgender samples, the small number of participants who completed

this scale is to be expected. Furthermore, the Assigned Gender scale is expected to have

less clinical and research utility with transgender populations due to this expected low

degree of identification.

     **Internal consistency.** The MGIQ showed good internal consistency for all Trans

subscales ($\alpha = .87$ for Community; $\alpha = .85$ for Physical Identity; $\alpha = .83$ for Centrality),

Nonbinary subscales ($\alpha = .83$ for Community; $\alpha = .90$ for Physical Identity; $\alpha = .87$ for

Centrality), and Unassigned Gender subscales ($\alpha = .80$ for Community; $\alpha = .84$ for

Physical Identity; $\alpha = .84$ for Centrality). The MGIQ also showed good or acceptable

internal consistency for all Assigned Gender subscales ($\alpha = .88$ for Community; $\alpha = .87$

for Physical Identity; $\alpha = .77$ for Centrality). Intercorrelations between subscales are

reported on Tables 7 and 8; factor loadings are reported on Tables 9-12.

     Given that the revised three-factor structure was a good fit for the data and

showed strong internal consistency, this factor structure was used to validate the MGIQ

in the Scale Validation phase. When analyzing convergent and divergent validity, certain

subscales are theoretically expected to be more closely linked to certain variables. The

Scale Validation phase of this study nonetheless uses all subscales for all analyses, as

demonstrating that subscales have stronger relationships to variables they are

theoretically linked to serves to further validate the multidimensional structure of the

MGIQ. The final MGIQ, including instructions for scoring, is presented in Appendix E.

### Scale Validation Phase Hypotheses

     Because this phase of the study aimed to validate the MGIQ, the following

hypotheses were examined.

**Hypothesis 1: Convergent validity**

It was hypothesized that the MGIQ would demonstrate convergent validity, or a relationship with related constructs.

**Hypothesis 1a**. MGIQ scores were expected to be related to identity labeling, with higher MGIQ Trans scores for individuals who selected a "trans" identity label ("transgender," "transman" or "transwoman") than for those who did not select such a label, and higher MGIQ Unassigned Gender scores for individuals who selected a label that used a corresponding identity label ("woman," "transwoman," "man," or "transman") than those who did not. I also expected higher MGIQ Nonbinary scores for individuals who selected a nonbinary identity label ("genderqueer," "nonbinary," "bigender," "intergender," "androgynous," or "unlabeled").

**Hypothesis 1b**. I expected MGIQ Unassigned Gender scores to correlate positively with desire to physically transition.

**Hypothesis 1c**. I hypothesized that MGIQ Trans scores would correlate positively with involvement in trans activism.

**Hypothesis 1d**. I hypothesized that MGIQ scores would predict the proportion of one's social circle who identified with a certain identity label, with higher MGIQ Unassigned Gender scores predicting a higher proportion of friends who primarily identify as the unassigned gender, and higher MGIQ Trans and Nonbinary scores predicting a higher proportion of friends who primarily identify as trans or nonbinary.

**Hypothesis 1e**. Finally, I hypothesized that stronger global identification with any single gender identity would positively predict life satisfaction.

**Hypothesis 2: Divergent validity**

I hypothesized that the MGIQ would demonstrate divergent validity in that it would differentiate itself from unrelated constructs.

**Hypothesis 2a**. I predicted that MGIQ scores would show little to no correlation with anxiety, depression, and stress.

**Hypothesis 2b**. In addition, I predicted that MGIQ Unassigned Gender scores would show weak or no correlations with identification with stereotypically masculine and feminine traits, as gender identity is distinct from identification with gender-typed traits.

**Hypothesis 3: Incremental validity**

Finally, I hypothesized that the MGIQ would provide additional predictive power over existing measures of gender identity. Because the MGIQ focuses more on personal identification with specific gender categories than the Transgender Congruence Scale (Kozee et al., 2012), I hypothesized that the MGIQ would show incremental validity over the Transgender Congruence Scale in predicting the gender identification of one's social circle (**Hypothesis 3a**) and one's involvement in transgender activism (**Hypothesis 3b**).

<div align="center">

**Scale Validation Phase Methods**

</div>

**Participants**

The Scale Validation phase used the same participants and dataset as the Scale Development phase.

**Measures**

In addition to the measures described in the Scale Development Phase, the following measures were analyzed in the Scale Validation Phase.

**Physical transition.** Participants selected the methods of physical gender transition they have completed. Several of these types of medical transition are selected on the basis of their inclusion in the GEEIQ (Factor & Rothblum, 2008). For each type of medical transition, participants also indicated whether they plan to undergo that type of transition in the future, as well as whether they would plan to undergo that type of transition if it were financially feasible for them.

**Gender identification of social support network.** Participants estimated the proportion of their friends who identify as men, women, and another gender identity category. Participants completed this task by allocating percentage points to each of three identity categories using bars on a bar graph, which default to a total of 100%.

**Trans activism.** Due to the lack of published scales assessing transgender activism, a 15-item scale was constructed by adapting the Involvement in Feminist Activities Scale (IFAS), a measure developed to assess both formal and informal involvement in feminist activism (Szymanski, 2004). This measure has been successfully adapted to measure race-related activism among African-American populations in the past (Szymanski, 2012; Szymanski & Lewis, 2015). In the current study, the measure was adapted by changing the word "feminist" to "trans." Two items were removed due to their focus on other identity groups (i.e., sexual and racial identities). In this study, Cronbach's alpha for the adapted IFAS was .92.

**Psychological distress.** The 21-item Depression Anxiety Stress Scale (DASS-21) is a measure that measures anxiety, depression, and feelings of stress or tension. The DASS-21 has been adapted into several other languages and is widely used for assessing these constructs across cultures (Wang et al., 2016). The current study used the DASS

total score as an overall measure of psychological distress. In the current sample, the

DASS-21 demonstrated strong reliability, with a Cronbach's alpha of .94.

**Gender-typed traits.** The Bem Sex Role Inventory (BSRI) is a widely used

measure of sex-typed traits (Choi, Fuqua, & Newman, 2009). A short form of the

measure has been released due to the socially undesirable nature of some of the initial

items (Bem, 1979); research suggests this short form has stronger reliability than the

original BSRI (Choi et al., 2009). In the current study, the BSRI had good reliability, with

Cronbach's alphas of .85 and .89 for the Masculine and Feminine scores, respectively.

**Transgender congruence.** The 12-item Transgender Congruence Scale (Kozee et

al., 2012) assesses gender identity through appearance congruence and gender identity

acceptance. This scale has shown strong internal validity, construct validity, and

discriminant validity, as well as demonstrating incremental validity over steps taken to

physically transition in predicting anxiety and depression (Kozee et al., 2012). Notably,

this scale assesses adaptive gender identity development, with higher scores reflecting

greater acceptance of and pride in one's own gender identity and stronger feelings that

one's physical appearance accurately reflects one's identity. In the current study,

Cronbach's alpha for the Transgender Congruence Scale was .92.

**Life satisfaction.** The Satisfaction with Life Scale (SWLS) is a five-item measure

that assesses overall satisfaction with one's life on the basis of the respondent's priorities

(Diener, Emmons, Larsen, & Griffin, 1985). The SWLS is the most widely used measure

of life satisfaction, and it has demonstrated measurement invariance within the United

States as well as across cultures (Whisman & Judd, 2016). In the current study, the

SWLS showed strong internal consistency (Cronbach's alpha = .88).

**Procedures**

Participants followed the same procedure outlined in the Scale Development phase.

**Data Analysis**

**Scale calculation.** For all scales with five or more items, mean imputation was used to calculate total scores for respondents who answered at least 80% of the items. For scales with fewer than five items or for scales in which less than 80% of items were completed, individuals with missing data were excluded from analyses in a pairwise fashion.

**Missing data.** Cases were excluded pairwise in each analysis. Participant dropout across the study was recorded.

**MGIQ score calculation.** Because items for specific identity categories on the MGIQ are only administered if the respondent identifies with that category "to some extent," many participants did not have MGIQ scores for some of the analyzed identity categories (Trans, Nonbinary, or Unassigned Gender). For the purposes of these analyses, such participants were considered not to have any identification with that gender category; as such, their scores for that identity were set to the minimum possible MGIQ score for that identity (zero). Because this pattern of analysis reduces the predictive value of the measure for individuals who did complete the scale, all analyses were subsequently repeated excluding all participants who did not complete the MGIQ scale in question. Full analyses are only reported for the former analyses here, except in cases where the conclusions of the two forms of analysis differ; effect sizes are reported for both sets of analyses, with "responding participants only" used to signify those who responded to the

items on the scale. For all analyses, all three MGIQ subscales will be included as separate

variables, consistent with the results of the Scale Development Phase.

   **Hypothesis 1: Convergent validity.** A variety of methods were used to assess

convergent validity. One-way ANOVA was used to assess the relationship between

identity labels and MGIQ scores (1a). Individuals were grouped based on whether they

selected an identity label consistent with an identity category (i.e., they were categorized

as "yes" or "no" for Trans, for Nonbinary, and for the Unassigned Gender), and the

MGIQ scores for that category were compared between those that did and did not endorse

the relevant identity associated with the MGIQ scale. Similarly, one-way ANOVA was

used to compare the MGIQ Unassigned Gender scores of individuals who indicated that

they desired physical gender transition to those scores of individuals who indicated that

they did not desire physical gender transition (1b). Pearson correlation was used to assess

the relationship between MGIQ Trans scores and involvement in trans activism (the

adapted IFAS; 1c). Pearson correlation was also used to assess the relationship between

MGIQ scores for a certain identity category (Unassigned Gender, Trans, or Nonbinary)

and the proportion of one's friends who primarily identify with that identity category

(1c). For these analyses, correlations of 0.3 or higher between at least one MGIQ

subscale and the expected correlates provide strong evidence for convergent validity,

with somewhat weaker correlations (i.e., 0.2) providing moderate evidence. Finally,

linear regression was used to examine the relationship between identification with a

certain gender identity and life satisfaction (1d). MGIQ scores for the three subscales

(Community, Physical Identity, and Centrality) were summed to create three MGIQ Total

scores (Trans, Unassigned Gender, and Nonbinary) for each participant; this total score

was only used to identify which category they identified with the most strongly. All

participants were grouped together, using the three subscale scores for the strongest

identified category to predict life satisfaction.

   **Hypothesis 2: Divergent validity.** Pearson correlation was used to evaluate the

relationship between MGIQ scores on all analyzed three scales (Trans, Nonbinary, and

Unassigned) and the DASS Total score (2a). Similarly, Pearson correlation was used to

evaluate the relationship between MGIQ Unassigned Gender scores and the BSRI Short

Form subscale corresponding to the unassigned gender (Masculinity for natal females;

Femininity for natal males; 2b). Pearson correlations of less than 0.2 present strong

evidence of divergent validity, with correlations of less than 0.3 presenting moderate

evidence of divergent validity.

   **Hypothesis 3: Incremental validity.** Linear regression was used to evaluate the

incremental validity of the MGIQ in predicting gender identification of one's social circle

(3a), as well as involvement in trans activism (3b). In the first step of the model, the

Transgender Congruence Scale (TCS) was used to predict the dependent variable (either

the proportion of one's friends primarily identifying as the unassigned gender or the

proportion of one's friends primarily identifying as trans/nonbinary for 3a or the adapted

IFAS for 3b). In the second step of the model, all three MGIQ subscales score were

added as predictors (the Unassigned Gender subscales for predicting the proportion of

one's friends primarily identifying as the unassigned gender; the Trans and Nonbinary

subscales score for predicting the proportion of one's friends primarily identifying as

trans or nonbinary for 3a, and the Trans subscales for predicting the adapted IFAS for

3b).

## Scale Validation Phase Results

### Data Screening

All MGIQ subscales sufficiently approximate a normal distribution (skewness range: -1.96 to 1.167; kurtosis range; -1.00 to 2.44). No univariate outliers were identified on any of the MGIQ scales. See Table 13 for means, standard deviations, and ranges for each subscale. Participant dropout is detailed in Table 14.

### Hypothesis 1: Convergent Validity

**Hypothesis 1a: Identity labeling.** Consistent with my hypotheses, individuals who endorsed an identity label corresponding to their unassigned gender ("man" or "transman" for natal females or "woman" or "transwoman" for natal males) had significantly higher MGIQ Unassigned Gender scores than those without a relevant identity label for the Community subscale ($F(1, 486) = 259.1$, $p<.001$, $\eta_p^2 = .348$; $\eta_p^2 = .067$ with responding participants only), for the Physical Identity subscale ($F(1, 492) = 787.6$, $p<.001$, $\eta_p^2 = .616$; $\eta_p^2 = .256$ with responding participants only), and for the MGIQ Unassigned Gender Centrality subscale ($F(1, 492) = 560.0$, $p<.001$, $\eta_p^2 = .532$; $\eta_p^2 = .161$ with responding participants only). Similarly, individuals who endorsed a trans identity label (i.e., "transman," "transwoman," or "transgender") had significantly higher MGIQ Trans scores than those without a trans label for the Community subscale ($F(1, 511) = 103.2$, $p<.001$, $\eta_p^2 = .168$; $\eta_p^2 = .061$ with responding participants only), for the Physical Identity subscale ($F(1, 513) = 63.0$, $p<.001$, $\eta_p^2 = .109$; $\eta_p^2 = .041$ with responding participants only), and for the Centrality subscale ($F(1, 514) = 156.6$, $p<.001$, $\eta_p^2 = .234$; $\eta_p^2 = .111$ with responding participants only). Finally, individuals who endorsed a nonbinary identity label (i.e.,"genderqueer," "nonbinary," "bigender,"

"intergender," "androgynous," or "unlabeled") as compared to those that did not had significantly higher MGIQ Nonbinary scores for the Community subscale ($F(1, 493) =$ 934.5, $p<.001$, $\eta_p^2 = .655$; $\eta_p^2 = .068$ with responding participants only), the Physical Identity subscale ($F(1, 493) = 811.8$, $p<.001$, $\eta_p^2 = .622$; $\eta_p^2 = .073$ with responding participants only), and the Centrality subscale ($F(1, 493) = 1033.7$, $p<.001$, $\eta_p^2 = .677$; $\eta_p^2 = .133$ with responding participants only). Thus, hypothesis 1a was fully supported. The means and standard deviations for each MGIQ subscale score, separated by those who endorsed a corresponding identity label and those who did not, are presented in Table 15.

**Hypothesis 1b: Physical transition.** Only ten participants who answered questions about physical transition indicated that they did not desire any form of physical transition; none of these ten respondents indicated that they identify with the unassigned gender to any extent. As such, comparisons between those who desired physical transition and those who did not would not be meaningful. As such, I instead compared MGIQ Unassigned Gender scores between individuals who have already completed some form of physical gender transition ($n = 319$) to those who have not ($n = 202$). Individuals who had undergone some form of physical gender transition had higher MGIQ Unassigned Gender scores than individuals who had not for the Community subscale, $F(1) = 32.8$, $p<.001$, $\eta_p^2 = .067$; $\eta_p^2 = .030$ with responding participants only indicating small to medium effect sizes, the Physical Identity subscale, $F(1) = 42.1$, $p<.001$, $\eta_p^2 = .060$; $\eta_p^2 = .041$ with responding participants only indicating small to medium effect sizes, and the Centrality subscale, $F(1) = 32.5$, $p<.001$, $\eta_p^2 = .066$; $\eta_p^2 = .023$ with responding participants only indicating small to medium effect sizes. These results

offering support for hypothesis 1b. Means and standard deviations for MGIQ Unassigned

Gender scores separated by physical transition status are presented in Table 16.

**Hypothesis 1c: Involvement in trans activism.** Consistent with my hypothesis,

involvement in trans activism, as measured by the modified IFAS, was positively

correlated with MGIQ Trans scores for Community, $r = .583$, $p < .001$, Physical Identity,

$r = .270$, $p < .001$, and Centrality, $r = .372$, $p < .001$, subscales. These correlations were

still significant when only considering individuals who completed the items on the MGIQ

Trans scales, with $r = .621$ ($p < .001$) for the Community subscale, $r = .240$ ($p < .001$) for

the Physical Identity subscale, and $r = .367$ ($p < .001$) for the Centrality subscale.

**Hypothesis 1d: Gender composition of social circle.** Consistent with hypothesis

1d, the proportion of one's friends who primarily identify with the Unassigned Gender

was correlated with MGIQ Unassigned Gender scores for the Community, $r = .262$, $p <$

.001, Physical Identity, $r = .209$, $p < .001$, and Centrality, $r = .204$, $p < .001$, subscales.

When excluding individuals who do not identify with the Unassigned Gender, these

correlations remained significant, with $r = .206$ ($p < .001$) for the Community subscale, $r$

$= .130$ ($p = .011$) for the Physical Identity subscale, and $r = .117$ ($p = .021$) for the

Centrality subscale. The magnitude of these correlations suggest moderate support for the

convergent validity of the MGIQ Unassigned Gender subscales with identification of

one's social circle. Also consistent with my hypothesis, the proportion of one's friends

who primarily identify with as trans or nonbinary was correlated with MGIQ Trans

scores for the Community, $r = .303$, $p < .001$, Physical Identity, $r = .233$, $p < .001$, and

Centrality, $r = .224$, $p < .001$, subscales. When excluding individuals who do not identify

as trans, these correlations remained significant, with $r = .338$ ($p < .001$) for the

Community subscale, $r = .239$ ($p < .001$) for the Physical Identity subscale, and $r = .249$

($p < .001$) for the Centrality subscale. The magnitude of these correlations provides

strong support for the convergent validity of the MGIQ Trans subscales with

identification of one's social circle. Finally, for the entire sample, the proportion of one's

friends who primarily identify with as trans or nonbinary was correlated with MGIQ

Nonbinary scores for the Community. $r = .365$, $p < .001$, Physical Identity, $r = .335$, $p <$

.001, and Centrality, $r = .334$, $p < .001$, subscales. When only including individuals who

identified as nonbinary (N=143), these correlations remained significant, with $r = .311$ ($p$

<.001) for the Community subscale, $r = .182$ ($p = .029$) for the Physical Identity subscale,

and $r = .173$ ($p = .038$) for the Centrality subscale. Again, the strength of these

correlations provides strong support for the convergent validity of the MGIQ Trans

subscales with identification of one's social circle.

  **Hypothesis 1e: Life satisfaction.** Linear regression was used to analyze the

degree to which the MGIQ subscales of the most strongly identified gender significantly

predicted life satisfaction. Inconsistent with my hypothesis, the MGIQ subscales

associated with the most strongly identified gender did not significantly predict life

satisfaction, $R^2 = .014$, $F(3, 438) = 2.06$, $p = .104$. In addition, none of the individual

subscales significantly predicted life satisfaction; for the Community subscale, $\beta = .037$,

$t = 0.71$, $p = .479$; for the Physical Identity subscale, $\beta = -.061$, $t = -1.17$, $p = .244$; for

the Centrality subscale, $\beta = -.085$, $t = -1.51$, $p = .132$. As an exploratory analysis, this

model was evaluated separately based on which identity was the most strongly endorsed.

For individuals for whom the Trans Total score was the highest total score (n = 43), the

total variance in the SWLS that was explained by the three subscales was not significant,

$R^2 = .024$, $F(3, 40) = 0.33$, $p = .804$, nor were any of the individual predictors. For individuals for whom the Nonbinary Total score was the highest score (n = 83), the MGIQ subscales significantly predicted life satisfaction with a medium effect size, $R^2 = .150$, $F(3, 80) = 4.72$, $p = .004$. For these individuals, only the Centrality subscale was a significant predictor of life satisfaction, $\beta = .339$, $t = 2.46$, $p = .016$. For individuals for whom the Unassigned Gender Total score was the highest score (n = 313), the MGIQ subscales significantly predicted life satisfaction with a small effect size, $R^2 = .052$, $F(3, 310) = 5.67$, $p = .001$. For these individuals, only the Centrality subscale was a significant predictor of life satisfaction, $\beta = -.216$, $t = -3.29$, $p = .001..$ Correlations between the SWLS and the MGIQ subscale scores are summarized in Table 17.

**Hypothesis 2: Divergent Validity**

  **Hypothesis 2a: Psychological distress.** The correlations between MGIQ scores and DASS scores are summarized on Table 18. For the MGIQ Trans scale, only the Trans Physical Identity subscale had a significant, yet weak, correlation with the DASS score, $r = .135$, $p = .004$, when including the entire sample. When including only participants who responded to the Trans subscales, the magnitude of the correlation of the Trans Physical Identity subscale increased, $r = .195$, $p < .001$, but remained weak, and the Trans Centrality subscale also had a weak positive correlation with DASS Total score, $r = .147$, $p = .002$. When including the entire sample, none of the MGIQ Unassigned Gender subscale scores significantly correlated with the DASS total score. When considering only participants who identified with the unassigned gender, the MGIQ Unassigned Centrality subscale score had a weak positive correlation with the DASS Total score, $r = .128$, $p = .010$. Similarly, none of the MGIQ Nonbinary subscales scores had a

statistically significant relationship with the DASS when including the entire sample.

When including only participants who identified as nonbinary, both the MGIQ Nonbinary

Community subscale, $r = -.215$, $p = .008$, and the Nonbinary Centrality subscale, $r = -.160$, $p = .048$, had a weak negative relationship to the DASS. Given that all correlations

were $r < .30$ and most were $r < .20$, there was support for hypothesis 2a.

**Hypothesis 2b: Identification with gender-typed traits.** Somewhat inconsistent

with our hypothesis, when combining the entire sample, there were significant—and in

some cases, moderately strong—positive correlations between the BSRI Short Form

scores associated with the unassigned gender (Masculinity for natal females, Femininity

for natal males) and the MGIQ Unassigned Gender scores for Community, $r = .341$, $p < .001$, Physical Identity, $r = .147$, $p = .002$, and Centrality, $r = .216$, $p < .001$. As an

exploratory analysis, this analysis was conducted separately for natal males and natal

females. For natal males, there was a weak positive correlation between the MGIQ

Unassigned Community score and the BSRI Femininity score, $r = .131$, $p = .046$;

correlations between the other two MGIQ Unassigned Gender subscale scores and the

BSRI Femininity score were not significant ($r = .042$, $p = .529$ for Physical Identity; $r = .048$, $p = .474$ for Centrality). For natal females, there was no significant correlation

between any MGIQ Unassigned Gender subscales and the BSRI Masculinity score, $r = .134$, $p = .080$ for Community; $r = .048$, $p = .532$ for Physical Identity; $r = .081$, $p = .290$

for Centrality, and effect sizes were small. As such, the moderate correlations between

the BSRI scores associated with the unassigned gender and the MGIQ Unassigned

Gender subscales only emerged when considering the entire sample.

**Hypothesis 3: Incremental Validity**

**Hypothesis 3a: Gender identification of one's social circle.** To evaluate

whether the MGIQ scales predicted gender identification of one's social circle over and

above an existing measure of gender identity (the TCS), we conducted as hierarchical

regression. When considering the entire sample, none of the MGIQ scores significantly

correlated with the TCS with the exception of the Trans Physical Identity subscale ($r = -.218$, $p < .001$) and the Trans Centrality subscale ($r = -.177$, $p < .001$), which were

weakly correlated with the TCS. When excluding individuals who did not identify as

nonbinary, the MGIQ Nonbinary Community subscale was significantly and moderately

correlated with the TCS ($r = .277$, $p = .001$). When predicting the proportion of one's

friends who primarily identify as the unassigned gender, in the first step, the TCS total

score was not a significant predictor, $R^2 = .006$, $F(1, 405) = 2.42$, $p = .121$; $\beta = .077$, $t = 1.56$; notably, the TCS total score was a significant predictor in Step 1 of the model when

excluding participants who did not identify as the unassigned gender, $R^2 = .013$, $F(1, 363) = 4.62$, $p = .032$; $\beta = .112$, $t = 2.15$. In Step 2 of the model with the addition of the

three MGIQ subscales, the TCS emerged as a significant, but weak, predictor, $\beta = .101$, $t = 2.05$, $p = .042$). The MGIQ Unassigned Gender Community subscale was also

significant predictor, $\beta = .210$, $t = 2.94$, $p = .004$, while the MGIQ Unassigned Gender

Physical Identity subscale, $\beta = .097$, $t = 0.98$, $p = .328$, and the MGIQ Unassigned

Gender Centrality subscale, $\beta = -.030$, $t = -0.29$, $p = .776$, were not significant predictors.

The three MGIQ Unassigned Gender subscales made a significant contributions to the

model, $\Delta R^2 = .067$, $F$-change$(3, 402) = 9.23$, $p < .001$. These results are summarized in

Table 19.

In predicting the proportion of one's friends who identify as trans or nonbinary, the TCS was not a significant predictor in Step 1 of the model, $R^2 = .003$, $F(1, 412) = 2.42$, $p = .295$; $\beta = .052$, $t = 1.05$. In Step 2 of the model, the TCS emerged as a significant, but weak, predictor, $\beta = .099$, $t = 2.06$, $p = .040$. The MGIQ Trans Community subscale was also significant predictor, $\beta = .235$, $t = 3.62$, $p < .001$, as was the MGIQ Trans Physical Identity subscale, $\beta = .164$, $t = 2.18$, $p = .030$. The MGIQ Trans Centrality subscale was not a significant predictor, $\beta = .005$, $t = 0.07$, $p = .943$. The three MGIQ Trans subscales made a significant contributions to the model, $\Delta R^2 = .108$, $F$-change$(3, 409) = 16.55$, $p < .001$.

Finally, the above analysis was conducted with the MGIQ Nonbinary subscales as predictors in Step 2 instead of the MGIQ Trans subscales. As above, the TCS was not a significant predictor in Step 1 of the model, $R^2 = .003$, $F(1, 413) = 1.44$, $p = .231$; $\beta = .059$, $t = 1.20$. In Step 2 of the model, only the MGIQ Nonbinary Community subscale was a significant predictor, $\beta = .462$, $t = 2.37$, $p = .018$; the MGIQ Nonbinary Physical Identity subscale, $\beta = .083$, $t = 0.62$, $p = .619$, the MGIQ Nonbinary Centrality subscale, $\beta = -.075$, $t = -0.45$, $p = .657$, and the TCS, $\beta = .057$, $t = 1.24$, $p = .122$, were not significant predictors. The three MGIQ Nonbinary subscales made significant contributions to the model, $\Delta R^2 = .127$, $F$-change$(3, 410) = 19.88$, $p < .001$. When excluding those who did not identify as nonbinary to any extent, the significance of each predictor remained the same. These results are summarized in Table 20. Thus, I found some support for the incremental validity of the MGIQ scales as described in hypothesis 3a.

**Hypothesis 3b: Involvement in trans activism.** In predicting the modified IFAS

score, the TCS was a significant predictor in Step 1, $\beta = .193$, $t = 4.13$, $p < .001$; $R^2 =$

.037. In Step 2 of the model, the TCS remained a significant predictor, $\beta = .228$, $t = 5.93$,

$p < .001$. The MGIQ Trans Community subscale was also significant predictor, $\beta = .593$,

$t = 11.42$, $p < .001$, while the MGIQ Trans Physical Identity subscale, $\beta = -.019$, $t = -0.39$,

$p = .698$, and the MGIQ Trans Centrality subscale, $\beta = .021$, $t = 0.36$, $p = .717$, were not

significant predictors. The three MGIQ Trans subscales made a significant contributions

to the model, $\Delta R^2 = .356$, $F$-change(3, 438) = 85.54, $p < .001$, consistent with my

hypothesis. Regression weights and $R^2$ were comparable when including responding

participants only. See Table 21 for a summary of these results.

## Discussion

The goal of this study was to develop and validate a set of measures of gender

identity for individuals who do not exclusively identify with their assigned gender for use

in clinical and research settings. These measures were based on the assumptions that

gender identity is not a unitary construct and that people may relate differently to the

different aspects of their gender identities. Item development was informed by past

research on gender identity, other areas of identity research, and qualitative feedback

from individuals within the St. Louis transgender community. Participants in the Item

Development Phase revealed the distinction between trans identity and nonbinary

identity, and suggested that these identities may interact in unique ways within an

individual, something that was clearly confirmed in Scale Development Phase of the

study as illustrated by the fact that the vast majority of participants identified with a trans

identity, but only a minority of participants identified with a nonbinary identity. In the

Scale Development Phase, an initial item pool of 16 items per identity category was reduced to 13 items per identity category that loaded onto three factors: Community, Physical Identity, and Centrality. These findings suggest that gender identity is indeed a multidimensional construct, and that individuals may identify to varying degrees with identities such as trans, nonbinary, the unassigned gender, or the assigned gender. The correlations between the subscales within and across identity categories suggest that the constructs of community, physical identity, and centrality are indeed unique—but interrelated—facets of gender identity for gender minorities, and that they function differently across identity categories. The exception was that, for individuals who identify as both trans and nonbinary, relationships of the subscales across these two identity categories were as strong or stronger as the relationships between subscales within identity categories. Because the current model is not assuming that identification as trans or nonbinary is unitary (i.e., that one's identification as nonbinary or trans is a unitary construct of which each subscale is a facet), this finding does not necessarily reflect flaws in the current measure. For instance, individuals who identify as nonbinary may view the trans community and nonbinary communities as highly overlapping, which would explain the high correlations between these two MGIQ Community subscales.

**Convergent Validity**

My analyses found support for convergent validity of the MGIQ with several areas, including identity labeling, involvement in trans activism, and gender identification of one's social circle. The relationship between identity labeling and MGIQ subscale scores was consistent with what would be predicted on the basis of research and theory. All three MGIQ Unassigned Gender Community subscale had large effect sizes in

predicting identity labeling, with the Physical Identity subscale having a particularly strong relationship with identity labeling. A different pattern of relationships between MGIQ subscale scores and identity labeling occurred for trans and nonbinary identities as compared to unassigned gender. All MGIQ Trans subscales had medium to large effect sizes in predicting identity labeling, with Centrality having the largest effect size. All three MGIQ Nonbinary subscales had very large effect sizes in predicting identity labeling as nonbinary due to the majority of the sample not completing the scale; when considering only responding participants, all three subscales had small to medium effect sizes, with Centrality having the largest effect size. Although little research has separately examined features of one's identity as transgender or nonbinary as compared to those that identify with their unassigned sex, theoretically, physical identity would carry less importance for the former identities than for the latter identity, as trans/nonbinary identities do not have an obvious external referent, whereas binary gender identities are associated with primary and secondary sex characteristics. As such, labeling oneself as trans or nonbinary may be more closely related to the significance of that identity for the individual. Given these theoretical connections between identity labeling and these different components of identity, these results not only speak to the convergent validity of the MGIQ, but also provide support for the importance of measuring gender identities in a multidimensional way.

Because very few respondents in the sample indicated that they did not desire any form of physical transition, the relationship between MGIQ scores and desire for physical transition could not be analyzed. The desire to physically transition to some extent may be nearly ubiquitous among transgender individuals; even those who did not identify with

the unassigned gender reported that they wish to undergo some sort of physical transition (e.g., chest surgery, hormones) to present as their gender identity (e.g., nonbinary). More research on desired physical transitions and preferred physical presentations among nonbinary-identified individuals might be a fruitful avenue for future research.. When considering the entire sample, the current study noted a small to medium effect size for all three MGIQ Unassigned Gender subscales in predicting whether one has completed some form of physical gender transition. Given the low magnitude of the effect sizes, firm statements about the comparative significance of these effects cannot be made at this time, although the results nevertheless provide some preliminary evidence that, as expected, the Physical Identity subscale has the strongest relationship to physical transition out of the MGIQ Unassigned Gender subscales. The relatively low effect size is unexpected. It is possible that, because desire for some form of physical transition was ubiquitous in the current sample, differences in physical transition status may primarily result from external variables (e.g., financial status, availability of providers, perceived safety of one's environment) as opposed to one's identification. Such an outcome is particularly likely given that physical transition was measured in a binary manner. Variations in the level of desire for physical transition may be more strongly related to MGIQ scores.

The MGIQ also showed convergent validity with involvement in trans activism; a large correlation between the MGIQ Trans Community subscale and the modified IFAS was observed, with medium correlations between the modified IFAS and the Physical Identity and Centrality subscales. As the community items relate to one's sense of

belonging among transgender individuals, these patterns of relationships are consistent with what would be expected given the nature of these subscales.

To the author's knowledge, little research has examined the relationship between one's own gender identity and the gender identity of one's social circle; in non-transgender populations, however, individuals of all ages more often befriend others who share their gender identity (Mehta & Strough, 2009). As such, one would expect a measure of gender identity to correlate with the proportion of one's friends who share that identity; the more strongly an individual identifies with a certain gender, the higher a proportion of their friends one would expect would share that identity. The current study found that MGIQ variables did correlate with the proportion of one's friends who primarily identify with a certain identity category. For all identity categories, the Community subscale was the subscale that was most strongly related to the gender identification of one's social circle. This result supports the convergent validity of the MGIQ subscales, as the Community subscale most closely captures their sense of belonging among individuals of that gender identity.

When evaluating the entire sample, MGIQ subscale scores for the most strongly endorsed identity did not predict with life satisfaction. I had expected such a relationship because, presumably, a strong sense of personal identity—regardless of the identity label—might be expected to lead to a greater sense of life satisfaction. Indeed, subscales of Transgender Congruence Scale were found to be correlated with life satisfaction (Kozee et al., 2012). Although we did not find such a relationship in our full sample, more detailed analysis of these results suggests that some MGIQ scores relate to life satisfaction. In particular, among individuals who most strongly identified as nonbinary,

higher MGIQ Nonbinary Centrality scores predicted greater life satisfaction with a medium effect size. Among individuals who most strongly identified as the unassigned gender, higher MGIQ Unassigned Gender predicted lower levels of life satisfaction. Individuals who most strongly identify as nonbinary are likely to find acceptance among other nonbinary individuals. For these people, greater centrality of this identity may result in greater willingness to engage with other nonbinary-identified individuals, increasing their odds of finding acceptance and social support. Greater comfort and certainty in their identity as nonbinary may also protect such individuals from negative consequences of discrimination. In contrast, transgender individuals for whom identity as the unassigned gender is particularly central may experience lower life satisfaction due to difficulty finding full acceptance among non-transgender individuals who identify as the unassigned gender. They may struggle with difficulties due to being unable to "pass" (i.e., be recognized by others as the unassigned gender). Further research is needed to clarify the relationship between gender identity as measured by the MGIQ and life satisfaction.

**Divergent Validity**

The MGIQ showed divergent validity from measures of general psychological distress and identification with gender-stereotypical traits. When evaluating the relationship between MGIQ scores and a measure of general psychological distress, most correlations were weak or non-significant providing evidence of divergent validity. There were a few weak but significant correlations noted between the MGIQ Trans subscale scores and the DASS Total score, which is unsurprising. Some level of mental health symptomology is expected for individuals who strongly identify as transgender, as these

individuals may experience identity-related stress due to internalization of the

discriminatory events transgender individuals often face (APA, 2015). No relationship

between the MGIQ Unassigned Gender subscales scores and the DASS Total score were

noted when including the entire sample. Notably, while MGIQ Nonbinary scores did not

significantly correlate with the DASS Total score when the entire sample was considered,

when considering only those individuals who identify as nonbinary, the MGIQ

Nonbinary Community and Centrality scores had weak negative correlations with the

DASS. This suggests that, among individuals who identify as nonbinary, stronger

certainty in this identity and greater feelings of connections to others who share that

identity may serve as a buffer against depression. Notably, the magnitude of all of these

correlations are sufficiently low to establish that the MGIQ, as intended, is not simply a

measure of mental health symptomology or psychological distress.

When the sample was separated by assigned sex, weak positive correlations were

observed between the MGIQ Unassigned Gender subscales and the BSRI Short Form

subscale associated with the unassigned gender. When these two samples were combined,

the correlation between the MGIQ Unassigned Gender Community score and the BSRI

subscale associated with the unassigned gender was moderate ($r = .341$). To the extent

that individuals feel connected to the unassigned gender because they feel as though their

personalities are consistent with those of the unassigned gender, greater feelings of

community identity with the unassigned gender are expected to positively correlate with

identification with gender-typed traits, so this result is not entirely contrary to predictions.

The magnitude of the correlation found in combined analysis was unexpected, however.

It appears that, although global identification with stereotypical masculinity (among natal

females) and stereotypical femininity (among natal males) is not strongly related to one's

feeling of connection to men or women respectively, when taken together, transgender

individuals who feel a greater sense of social and political connection with the

unassigned gender tend to more strongly identify with gender-typed traits of the

unassigned gender. Although the magnitude of this single correlation was somewhat

greater than expected, taken together, the present findings nonetheless suggest that the

MGIQ Unassigned Gender subscale scores do not simply measure identification with

gender-typed traits.

**Incremental Validity**

The MGIQ demonstrated incremental validity in predicting involvement in trans

activism and the gender identification of one's social circle over the Transgender

Congruence Scale (TCS), an existing and psychometrically-sound measure of gender

identity (Kozee et al., 2012). Furthermore, when predicting the proportion of one's

friends who primarily identify with a certain gender identity, the MGIQ Community

subscale associated with that gender identity emerged as the strongest predictor (even

stronger than the TCS). Similarly, the MGIQ Trans Community subscale was the

strongest predictor of trans activism (more so that the TCS). This finding suggests that

the MGIQ represents a unique contribution to the literature in its ability to predict certain

psychosocial outcomes. Notably, the MGIQ addresses different aspects of identity than

the TCS. Although the TCS explores the degree to which one has accepted their identity

and is comfortable with their physical presentation, the MGIQ examines one's feelings of

belonging within a community of others who share that identity, the importance of

presenting oneself as that identity, and the degree to which that identity is central to one's

view of oneself. As such, the MGIQ may be less well-suited to predicting life satisfaction

and mental health symptoms compared to the TCS.

**Limitations**

There are several limitations to the present study. Although a very large sample of

transgender individuals was collected, the sample was relatively homogeneous, with 82%

of the sample identifying as White and the large majority (76%) having at least some

college education. The mean age was 25, and 93% of the sample was age 35 or younger.

In addition, 63% of the sample identified as non-religious. These characteristics are likely

the result of recruitment methods, particularly the social media sites used. The

experiences of the current study sample therefore may not accurately reflect the

experiences of transgender individuals who are older, are racial or ethnic minorities, or

who identify strongly with a certain religion. In addition, the current study did not

examine the relationship of such identity variables to the predictors described here; as

such, the impact of this non-representative sample is not known at this time. In addition,

intersectionality, or ways in which other identity variables interact with gender identity,

was not assessed in the current study.

All of the measures used in the current study are self-report measures, some of

which require estimation (e.g., proportion of friends who primarily identify with a

specific gender) and may reflect one's beliefs about their own behaviors as opposed to

the behaviors themselves (e.g., one's perception of the genders one views as members of

their social circle as opposed to the actual gender composition). Although these methods

are adequate for the purposes of validating measures of gender identity, caution should be

taken when drawing broader conclusions regarding the magnitude of relationships between gender identity and other variables.

Although online data collection allowed for a large sample size for the present study, this approach has limitations. In addition to typical limitations of self-report, missing data can be difficult to interpret without the opportunity to directly query participants about patterns of item responses. Several participants dropped out over the course of the study, and while these participants did not appear to differ from those who completed the study on the MGIQ scores, they may differ from those who completed the study in the measures they did not complete (e.g., life satisfaction, psychological distress). For example, participants with more external stressors may be less likely to complete the study, and these stressors would be expected to predict psychological distress.

There are some limitations to the MGIQ as a set of measures. Although the use of four separate scales with three subscales for each allows for flexibility in measuring a wide array of gender identities, this approach is not parsimonious. Future studies using the measure would likely benefit from analyzing only the subscales with the most relevance for the research question. In addition, the MGIQ was developed and validated to measure gender identity only within transgender individuals. This approach was taken because experiences of gender identity within this population likely differ from those of individuals outside of this population. Gender identity is nonetheless a relevant construct for many individuals who do not identify as transgender, and the relevance of the MGIQ for such individuals has not been assessed here.

Additional limitations were present in the area of scale development. In particular, the final Community subscales only had three items. Although there is precedent for a three-item subscale on a gender identity measure (Kozee et al., 2012), this subscale would ideally have additional items to more thoroughly explore this area of identity. In addition, some minor issues with divergent validity were found. In particular, the Community subscale had an unexpectedly high correlation with identification with gender-typed traits (for the Unassigned Gender scale) and with involvement in transgender activism (for the Trans scale). Given that these items focused on social and political involvement, it may capture some traits such as extraversion, social anxiety, and political attitudes in addition to a sense of community within a certain gender.

**Clinical Implications and Future Directions**

The MGIQ shows strong reliability and validity, and can effectively be used within research and clinical settings to further understanding of transgender individuals. In clinical settings, the MGIQ can be used to evaluate changes in identification with various gender identities over time, particularly with individuals who present with early stages of gender dysphoria. The process of completing the MGIQ and reviewing the results can serve to challenge traditional assumptions of gender identity for both clients and clinicians, allowing greater flexibility in how clients choose to express their identities. For example, a natal female client who identifies as a man may find that, although his male identity and physically presenting as a man are important to him, he still feels a strong sense of social and political connection to women. This knowledge can be used to help the client navigate their desired social interactions through the transition process.

Research with the MGIQ can further both clinical practice and general knowledge within the field about transgender individuals' functioning. Although recent studies (e.g., Scandurra et al., 2017; Timmins, Rimes, & Rahman, 2017) have examined how transgender individuals cope with discrimination using a minority stress model, these studies have not examined the role of the identity variables measured by the MGIQ in managing such stressors. By identifying which identity variables serve as risk and protective factors, the MGIQ can help researchers develop interventions that target these areas. For instance, preliminary results from the present study suggest that increasing sense of community belonging within nonbinary-identified individuals may serve as a buffer against psychological distress; as such, interventions that aim to increase this sense of belonging may reduce mental health symptomology in this population. Longitudinal research using the MGIQ can further evaluate causal relationships between MGIQ variables and psychosocial outcomes.

To validate the MGIQ for use with diverse populations, further research with a more demographically diverse sample of transgender individuals is nonetheless needed to ensure that this measure is valid with populations that are not primarily young, White, and highly educated. Intersectionality with other identities may influence the factor structure of the MGIQ or interpretive significance of MGIQ scores.

The Assigned Gender subscales of the MGIQ were not analyzed here because I expected minimal endorsement of identification with the assigned gender in a transgender sample. While the current study found low rates of identification with the assigned gender, 15% of participants nonetheless reported some degree of identification with their assigned gender. The role that such identification plays in transgender individuals'

functioning is unclear. Future research may aim to clarify the nature of assigned-gender

identification within transgender individuals and determine if a measure such as the

MGIQ can provide valuable information about this aspect of one's identity.

**Conclusion**

The MGIQ serves as the first valid set of measures of gender identity for

transgender individuals that examines the constructs of community identity, physical

identity, and centrality. These measures reject traditional assumptions that gender identity

is a unitary, polarized construct that is best evaluated by focusing on dysphoria. Instead,

they allow for different relationships and experiences of people's diverse gender

identities. The MGIQ subscales significantly correlate with conceptually related

variables, and the MGIQ were differentiated from other conceptually distinct constructs.

These measures also demonstrated incremental validity in predicting involvement in

transgender activism and the gender composition of one's social circle over an existing

measure of gender identity. Although additional validation of the MGIQ is needed with a

more demographically diverse sample, the present study suggests that this measure makes

a unique contribution to the literature in its conceptualization of gender identity and its

predictive power within the current sample.

## References

American Psychiatric Association. (2000). *Diagnostic and statistical manual of mental disorders* (4th ed., text rev.). Washington, DC: Author.

American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders* (5th ed.). Washington, DC: Author.

American Psychological Association (2015). *Guidelines for Psychological Practice with Transgender and Gender Nonconforming People.* Retrieved from http://www.apa.org/practice/guidelines/transgender.pdf

Baumeister, R.F. & Leary, M.R. (1995). The need to belong: Desire for interpersonal attachments as a fundamental human motivation. *Psychological Bulletin, 117*(3)*,* 497-529.

Bem, S.L. (1979). Theory and measurement of androgyny: A reply to the Pedhazur-Tetenbaum and Locksley-Colten critiques. *Journal of Personality and Social Psychology, 37*(6)*,* 1047-1054.

Benson, K.E. (2013). Seeking support: Transgender client experiences with mental health services. *Journal of Feminist Family Therapy, 25*(1)*,* 17-40. DOI: 10.1080/08952833.2013.755081

Bockting, W., Benner, A., & Coleman, E. (2009). Gay and bisexual identity development among female-to-male transsexuals in North America: Emergence of a transgender sexuality. *Archives of Sexual Behavior, 38,* 688-701. DOI: 10.1007/s10508-009-9489-3.

Butler, J. (2004). *Undoing gender.* New York, NY; Routledge.

Choi, N., Fuqua, D.R., & Newman, J.L. (2009). Exploratory and confirmatory studies of the structure of the Bem Sex Role Inventory Short Form with two divergent samples. *Educational and Psychological Measurement, 69*(4), 696-705. DOI: 10.1177/0013164409332218

Coleman, E., Bockting, W., Botzer, M., Cohen-Kettenis, P., DeCuypere, G., Feldman, J., … Zucker, K. (2011). Standards of care for the health of transsexual, transgender, and gender nonconforming people, version 7. *International Journal of Transgenderism, 13,* 165-232. DOI: 10.1080/15532739.2011.700873

Daley, A. & Mulé, N.J. (2014). LGBTQs and the DSM-5: A critical queer response. *Journal of Homosexuality, 61*(9)*,* 1288-1312. doi:10.1080/00918369.2014.926766

Deogracias, J.L., Johnson, L.L., Meyer-Bahlburg, H.F.L., Kessler, S.J., Schober, J.M., &

Zucker, K.J. (2007). The Gender Identity/Gender Dysphoria Questionnaire for Adolescents and Adults. *Journal of Sex Research, 44*(4)*,* 370-379. DOI: 10.1080/00224490701586730

Diamond, L.M. & Butterworth, M. (2008). Questioning gender and sexual identity: Dynamic links over time. *Sex Roles, 59,* 365-376. DOI: 10.1007/sl1199-008-9425-3

Diener, E., Emmons, R.A., Larsen, R.J., & Griffin, S. (1985). The Satisfaction With Life Scale. *Journal of Personality Assessment, 49(1),* 71-75. DOI: 10.1207/s15327752jpa4901_13

Docter, R.F. & Fleming, J.S. (2001). Measures of transgender behavior. *Archives of Sexual Behavior, 30*(3)*,* 255-271. DOI: 10.1023/A:1002795929547

Dugan, J.P., Kusel, M.L., & Simounet, D.M. (2012). Transgender college students: An exploratory study of perceptions, engagement, and educational outcomes. *Journal of College Student Development, 53*(5)*,* 719-736. DOI: 10.1353/csd.2012.0067

Factor, R. & Rothblum, E. (2008). Exploring gender identity and community among three groups of transgender individuals in the United States: MTFs, FTMs, and genderqueers. *Health Sociology Review, 17*(3)*,* 235-253. DOI: 10.5172/hesr.451.17.3.235

Fassinger, R.E. & Arseneau, J.R. (2013). "I'd rather get wet than be under that umbrella": Differentiating the experiences and identities of lesbian, gay, bisexual, and transgender people. In K.J. Bieschke, R.M. Perez, & K.A. DeBord (Eds.) *Handbook of counseling and psychotherapy with lesbian, gay, bisexual, and transgender clients* (2nd ed., pp. 19-49). Washington, DC: American Psychological Association.

Frost, D.M. & Meyer, I.H. (2012). Measuring community connectedness among diverse sexual minority populations. *Journal of Sex Research, 49*(1)*,* 36-49. DOI: 10.1080/00224499.2011.565427

Hecht, M.L. (1993). 2002—A research odyssey: Toward the development of a Communication Theory of Identity. *Communication Monographs, 60,* 76-82. DOI: 10.1080/03637759309376297

Hu, L. & Bentler, P. (1999). Cutoff criteria for fit indices in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling, 6*, 1-55. DOI: 10.1080/10705519909540118

Iantaffi, A. & Bocking, W.O. (2011). View from both sides of the bridge? Gender, sexual legitimacy and transgender people's experiences of relationships. *Culture, Health & Sexuality, 13*(3)*,* 355-370. DOI: 10.1080/13691058.2010.5377770

Jones, S.C.T., Lee, D.B., Gaskin, A.L., & Neblett Jr., E.W. (2014). Emotional response profiles to racial discrimination: Does racial identity predict affective patterns? *Journal of Black Psychology, 40*(4)*,* 334-359. DOI: 10.1177/0095798413488628

Kamens, S.R. (2011). On the proposed sexual and gender identity diagnoses for DSM-5: History and controversies. *The Humanistic Psychologist, 29,* 37-59. DOI: 10.1080/08873267.2011.539935

Kozee, H.B., Tylka, T.L., & Bauerband, L.A. (2012). Measuring transgender individuals' comfort with gender identity and appearance: Development and validation of the Transgender Congruence Scale. *Psychology of Women Quarterly, 36,* 179-196. DOI: 10.1177/0361684312442161

Kuper, L.E., Nussbaum, R., & Mustanski, B. (2012). Exploring the diversity of gender and sexual orientation identities in an online sample of transgender individuals. *Journal of Sex Research, 49*(2-3)*,* 244-254. DOI: 10.1080/00224499.2011.596954

Kuyper, L. & Wijsen, C. (2014). Gender identities and gender dysphoria in the Netherlands. *Archives of Sexual Behavior, 43,* 377-385. DOI: 10.1007/s10508-013-0140-y

Lev, A.I. (2013). Gender dysphoria: Two steps forward, one step back. *Clinical Social Work Journal, 41,* 288-296. DOI: 10.1007/s10615-013-0447-0

Markman, E.R. (2011). Gender identity disorder, the gender binary, and transgender oppression: Implications for ethical social work. *Smith College Studies in Social Work, 81*(4)*,* 314-327. DOI: 10.1080/00377317/2011616839

Melendez, R.M., Exner, T.A., Ehrhardt, A.A., Dodge, B., Remien, R.H., Rotheram-Borus, M.J., … Hong, D. (2006). Health and health care among male-to-female transgender persons who are HIV positive. *American Journal of Public Health, 96*(6)*,* 1034-1037.

Money, J. & Ehrhardt, A.A. (1972). *Man & woman, boy & girl: The differentiation and dimorphism of gender identity from conception to maturity.* Baltimore: Johns Hopkins University.

Muehlenhard, C.L. & Peterson, Z.D. (2011). Distinguishing between *sex* and *gender*: History, conceptualizations, and implications. *Sex Roles, 64,* 791-803. DOI: 10.1007/s11199-011-9932-5

Nagoshi, J.L., Brzuzy, S., & Terrell, H.K. (2012). Deconstructing the complex perceptions of gender roles, gender identity, and sexual orientation among transgender individuals. *Feminism & Psychology, 22*(4), 405-422. DOI: 10.1177/0959353512461929

Nuru, A.K. (2014). Between layers: Understanding the communicative negotiation of conflicting identities by transgender individuals. *Communication Studies, 65*(3)*,* 281-297. DOI: 10.1080/10510974.2013.833527

Palomares, N.A. (2004). Gender schematicity, gender identity salience, and gender-linked language use. *Human Communication Research, 30*(4)*,* 556-588.

Pascoe, C.J. (2007). *Dude, you're a fag: Masculinity and sexuality in high school*. Berkeley: University of California Press.

Puckett, J.A., Levitt, H.M., Horne, S.G., & Hayes-Skelton, S.A. (2015). Internalized heterosexism and psychological distress: The mediating role of self-criticism and community connectedness. *Psychology of Sexual Orientation and Gender Diversity, 2*(4)*,* 426-435. DOI: 10.1037/sgd0000123

Rosenblum, K.E. & Travis, T.-M.C. (2003). Framework essay. In K.E. Rosenblum & T.-M.C. Travis (Eds.), *The meaning of difference: American constructions of race, sex and gender, social class, and sexual orientation* (3rd ed., pp. 2-37). Boston: McGraw-Hill.

Rosser, B.R.S., Oakes, J.M., Bockting, W.O., & Miner, M. (2007). Capturing the social demographics of hidden sexual minorities: An internet study of the transgender population of the United States. *Sexuality Research & Social Policy: A Journal of the NSRC, 4*(2)*,* 50-64. DOI: 10.1525/srsp.2007.4.2.50

Rucker, J.M., Neblett Jr., E.W., & Anyiwo, N. (2014). Racial identity, perpetrator race, racial composition of primary community, and mood responses to discrimination. *Journal of Black Psychology, 40*(6)*,* 539-562. DOI: 10.1177/0095798413499371

Ruppin, U. & Pfäfflin, F. (2015). Long-term follow-up of adults with Gender Identity Disorder. *Archives of Sexual Behavior, 44,* 1321-1329. DOI: 10.1007/s10808-014-0453-5

Ryu, E. (2011). Effects of skewness and kurtosis on normal-theory based maximum likelihood test statistic in multilevel structural equation modeling. *Behavioral Research Methods, 43*(4), 1066-1074. DOI: 10.3758/s13428-011-0115-7

Scandurra, C., Amodeo, A.L., Valerio, P., Bochicchio, V., & Frost, D.M. (2017). Minority stress, resilience, and mental health: A study of Italian transgender people. *Journal of Social Issues, 73*(3), 563-585. DOI: 10.1111/josi.12232

Sellers, R.M., Caldwell, C.H., Schmeelk-Cone, K.H., & Zimmerman, M.A. (2003). Racial identity, racial discrimination, perceived stress, and psychological distress among African American young adults. *Journal of Health and Social Behavior, 44*(3)*,* 302-317.

Sellers, R.M. & Shelton, J.N. (2003). The role of racial identity in perceived racial discrimination. *Journal of Personality and Social Psychology, 84*(5)*,* 1079-1092. DOI: 10.1037/0022-3514.84.5.1079

Solomon, A. (2012). *Far From the Tree: Parents, Children, and the Search for Identity* (1st Scribner hardcover ed.)*.* New York, NY; Scribner.

Stephens, S.C., Bernstein, K.T., & Philip, S.S. (2011). Male to female and female to male transgender persons have different sexual risk behaviors yet similar rates of STDs and HIV. *AIDS and Behavior, 15,* 683-686. DOI: 10.1007/s10461-010-9773-1

Suhr, D.D. (2006). Exploratory or confirmatory factor analysis? *Statistics and Data Analysis.* Retrieved July 18, 2016, from http://www2.sas.com/proceedings/sugi31/200-31.pdf.

Szymanski, D.M. (2004). Relations among dimensions of feminism and internalized heterosexism in lesbians and bisexual women. *Sex Roles, 51,* 145-159.

Szymanski, D.M. (2012). Racist events and individual coping styles as predictors of African American activism. *Journal of Black Psychology, 38*(3)*,* 342-367. DOI: 10.1177/0095798411424744

Szymanski, D.M. & Lewis, J.A. (2015). Race-related stress and racial identity as predictors of African American activism. *Journal of Black Psychology, 41*(2)*,* 170-191. DOI: 10.1177/0095798414520707

Tate, C.C., Ledbetter, J.N., & Youssef, C.P. (2013). A two-question method for assessing gender categories in the social and medical sciences. *Journal of Sex Research, 50*(8)*,* 767-776. DOI: 10.1090/00224499.2012.690110

Timmins, L., Rimes, K.A., & Rahman, Q. (2017). Minority stressors and psychological distress in transgender individuals. *Psychology of Sexual Orientation and Gender Diversity, 4*(3), 328-340. DOI: 10.1037/sgd0000237

Wang, K., Shi, H.S., Geng, F.L., Zou, L.Q., Tan, S.P., Wang, Y., … Chan, R.C.K. (2016). Cross-cultural validation of the Depression Anxiety Stress Scale-21 in China. *Psychological Assessment, 28*(5)*,*e88. DOI: 10.1037/pas0000207

West, C. & Zimmerman, D.H. (1987). Doing gender. *Gender and Society, 1*(2)*,* 125-151. DOI: 10.1177/0891243287001002002

Whisman, M.A. & Judd, C.M. (2016). A cross-national analysis of measurement invariance of the Satisfaction With Life Scale. *Psychological Assessment, 28(2)* 239-244. DOI: 10.1037/pas0000181

Williams, C.J., Weinberg, M.S., & Rosenberger, J.G. (2013). Trans men: Embodiments, identities, and sexualities. *Sociological Forum, 28*(4)*,* 719-741. DOI: 10.1111/socf.12056

Wood, W. & Eagly, A.H. (2015). Two traditions of research on gender identity. *Sex Roles, in press.* DOI: 10.1007/s11199-015-0480-2

Table 1

*Sociodemographic Characteristics of Scale Development/ Validation Phase Sample (N = 521)*

| Characteristic | Value |
|---|---|
| Age – *M years* ± *SD* (range) | 25.6 ± 7.4 (18–77) |
| Assigned sex – *n* (%) | |
| Female | 238 (45.7) |
| Male | 280 (53.7) |
| Intersex | 3 (0.6) |
| Race and ethnicity – *n* (%)* | |
| Caucasian/White | 428 (82.1) |
| Hispanic/Latino/Latina | 32 (6.1) |
| Asian/Asian-American | 25 (4.8) |
| Biracial/Multiracial | 24 (4.6) |
| Native-American/American Indian or Alaskan Native | 20 (3.8) |
| African-American/Black | 8 (1.5) |
| Another racial/ethnic group | 11 (2.1) |
| No response | 59 (11.3) |
| Education – *n* (%) | |
| Less than high school | 6 (1.2) |
| High school/GED | 64 (12.3) |
| Some college (no degree completed) | 178 (34.2) |
| 2-year college degree | 18 (3.5) |
| 4-year college degree | 138 (26.5) |
| Master's degree | 45 (8.6) |
| Academic or professional doctoral degree | 15 (2.9) |
| No response | 57 (10.9) |
| Annual household income – *n* (%) | |
| < $15,000 | 110 (21.1) |
| $15,000 – 29,999 | 82 (15.7) |
| $30,000 – 59,999 | 99 (19.0) |
| $60,000 – 99,999 | 84 (16.1) |
| $100,000 – 149,999 | 49 (9.4) |
| ≥ $150,000 | 30 (5.8) |
| No response | 67 (12.9) |
| Religious affiliation – *n* (%) | |
| None | 329 (63.1) |
| Protestant Christian | 32 (6.1) |
| Catholic | 14 (2.7) |
| Jewish | 11 (2.1) |
| Buddhist | 6 (1.2) |
| Muslim | 1 (0.2) |
| Another religion | 71 (13.6) |
| No Response | 57 (10.9) |

*Percentages may total to greater than 100 because participants endorsed multiple categories

Table 2
*Proportion of Missing Data for Items of MGIQ Trans Scale (n =480)*

| Initial Item Number | Respondents Completing Item | Percentage Missing |
|---|---|---|
| 1 | 479 | 0.2 |
| 2 | 479 | 0.2 |
| 3 | 478 | 0.4 |
| 4 | 480 | 0.0 |
| 5 | 477 | 0.6 |
| 6 | 478 | 0.4 |
| 7 | 478 | 0.4 |
| 8 | 475 | 1.0 |
| 9 | 476 | 0.8 |
| 10 | 478 | 0.4 |
| 11 | 476 | 0.8 |
| 12 | 478 | 0.4 |
| 13 | 475 | 1.0 |
| 14 | 475 | 1.0 |
| 15 | 478 | 0.4 |
| 16 | 477 | 0.6 |

Table 3

*Proportion of Missing Data for Items of MGIQ Nonbinary Scale (n =164)*

| Initial Item Number | Respondents Completing Item | Percentage Missing |
|---|---|---|
| 1 | 164 | 0.0 |
| 2 | 164 | 0.0 |
| 3 | 164 | 0.0 |
| 4 | 164 | 0.0 |
| 5 | 164 | 0.0 |
| 6 | 164 | 0.0 |
| 7 | 164 | 0.0 |
| 8 | 164 | 0.0 |
| 9 | 163 | 0.6 |
| 10 | 164 | 0.0 |
| 11 | 164 | 0.0 |
| 12 | 164 | 0.0 |
| 13 | 164 | 0.0 |
| 14 | 164 | 0.0 |
| 15 | 164 | 0.0 |
| 16 | 164 | 0.0 |

Table 4

*Proportion of Missing Data for Items of MGIQ Unassigned Gender Scale (n =443)*

| Initial Item Number | Respondents Completing Item | Percentage Missing |
|---|---|---|
| 1 | 443 | 0.0 |
| 2 | 443 | 0.0 |
| 3 | 443 | 0.0 |
| 4 | 440 | 0.7 |
| 5 | 443 | 0.0 |
| 6 | 442 | 0.2 |
| 7 | 442 | 0.2 |
| 8 | 442 | 0.2 |
| 9 | 441 | 0.4 |
| 10 | 441 | 0.4 |
| 11 | 439 | 0.9 |
| 12 | 436 | 1.6 |
| 13 | 441 | 0.4 |
| 14 | 437 | 1.4 |
| 15 | 440 | 0.7 |
| 16 | 441 | 0.4 |

Table 5

*Proportion of Missing Data for Items of MGIQ Assigned Gender Scale (n =*76)

| Initial Item Number | Respondents Completing Item | Percentage Missing |
|---|---|---|
| 1 | 76 | 0.0 |
| 2 | 76 | 0.0 |
| 3 | 76 | 0.0 |
| 4 | 76 | 0.0 |
| 5 | 75 | 1.3 |
| 6 | 75 | 1.3 |
| 7 | 75 | 1.3 |
| 8 | 75 | 1.3 |
| 9 | 75 | 1.3 |
| 10 | 75 | 1.3 |
| 11 | 75 | 1.3 |
| 12 | 75 | 1.3 |
| 13 | 75 | 1.3 |
| 14 | 75 | 1.3 |
| 15 | 74 | 2.6 |
| 16 | 75 | 1.3 |

Table 6

*Goodness-of-Fit Indicators for Factor Structure of MGIQ Scales (N = 521)*

| Model | $\chi^2$ | df | $\chi^2/df$ | $\chi^2_{diff}$ | CFI | RMSEA |
|---|---|---|---|---|---|---|
| | | | *Trans Scale (N=444)* | | | |
| Single-factor | 1464.8*** | 104 | 14.1 | | .650 | .172 |
| Three-factor | 386.8*** | 101 | 3.8 | 1078.0*** | .927 | .080 |
| Revised three-factor | 186.2*** | 62 | 3.0 | 200.6*** | .959 | .067 |
| | | | *Nonbinary Scale (N=160)* | | | |
| Single-factor | 708.6*** | 104 | 6.8 | | .631 | .191 |
| Three-factor | 232.3*** | 101 | 2.3 | 476.3*** | .920 | .090 |
| Revised three-factor | 113.6*** | 62 | 1.8 | 118.7*** | .960 | .072 |
| | | | *Unassigned Gender Scale (N=401)* | | | |
| Single-factor | 1302.5*** | 104 | 12.5 | | .631 | .170 |
| Three-factor | 473.4*** | 101 | 4.7 | 829.1*** | .885 | .096 |
| Revised three-factor | 162.4*** | 62 | 2.6 | 311.0*** | .960 | .064 |
| | | | *Assigned Gender Scale (N=73)* | | | |
| Single-factor | 352.6*** | 104 | 3.4 | | .621 | .181 |
| Three-factor | 182.8*** | 101 | 1.8 | 169.8*** | .875 | .105 |
| Revised three-factor | 98.9*** | 62 | 1.6 | 89.3*** | .930 | .090 |

\*\*\**p* < .001

*Note.* Participants were excluded from analyses if they were missing data for any item on the corresponding MGIQ scale.

Table 7

*Intercorrelations of MGIQ Subscales (All Participants; N = 521)*

| Variable | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|---|---|---|---|---|---|---|---|---|---|
| 1. Trans Community | – | | | | | | | | |
| 2. Trans Physical Identity | .55** | – | | | | | | | |
| 3. Trans Centrality | .69** | .64** | – | | | | | | |
| 4. Nonbinary Community | .23** | .27** | .13** | – | | | | | |
| 5. Nonbinary Physical Identity | .21** | .32** | .14** | .91** | – | | | | |
| 6. Nonbinary Centrality | .21** | .30** | .19** | .95** | .94** | – | | | |
| 7. Unassigned Community | .14** | -.06 | .13** | -.44** | -.46** | -.43** | – | | |
| 8. Unassigned Physical Identity | .06 | -.05 | .17** | -.53** | -.54** | -.50** | .70** | – | |
| 9. Unassigned Centrality | .10* | -.01 | .24** | -.50** | -.52** | -.48** | .74** | .88** | – |

*Note.* For participants who did not endorse a particular identity, all subscales for that identity were set to zero. Number of participants in each analysis may differ slightly due to missing responses to subscale items

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

Table 8

*Intercorrelations of MGIQ Subscales (Including Only Participants Endorsed Each Particular Identity to Some Degree)*

| Variable | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|---|---|---|---|---|---|---|---|---|---|
| 1. Trans Community[a] | – | | | | | | | | |
| 2. Trans Physical Identity[a] | .42** | – | | | | | | | |
| 3. Trans Centrality[a] | .52** | .53** | – | | | | | | |
| 4. Nonbinary Community[b] | .73** | .26** | .46** | – | | | | | |
| 5. Nonbinary Physical Identity[b] | .33** | .46** | .37** | .43** | – | | | | |
| 6. Nonbinary Centrality[b] | .42** | .37** | .55** | .52** | .59** | – | | | |
| 7. Unassigned Community[c] | .17** | -.07 | .02 | .04 | -.15 | -.04 | – | | |
| 8. Unassigned Physical Identity[c] | -.07 | -.13** | -.01 | -.21* | -.25** | -.19* | .36** | – | |
| 9. Unassigned Centrality[c] | .02 | -.05 | .17** | -.08 | -.32** | -.13 | .49** | .60** | – |

[a]*n* = 480; [b]*n* = 164; [c]*n* = 443

*Note.* Number of participants in each analysis may differ slightly due to missing responses to subscale items

* *p* < .05. ** *p* < .01.

Table 9

*Factor Loadings for Final MGIQ Trans Subscales*

| Subscale | Initial Item Number | Item | Factor Loading |
|---|---|---|---|
| Community | 6 | I would enjoy going to a night out exclusively for trans people, assuming I would feel safe and accepted. | .857 |
| Community | 14 | I would like to go to a political rally targeted to trans people. | .723 |
| Community | 15 | I would like to attend events specifically designated for trans people, assuming I would feel safe and accepted at such events. | .925 |
| Physical Identity | 3 | It is NOT important to me that my physical body express my identity as trans. | -.498 |
| Physical Identity | 5 | It is important to me that I express my identity as trans through my outward appearance. | .818 |
| Physical Identity | 11 | I want my identity as trans to be evident in my physical body. | .825 |
| Physical Identity | 12 | I would like others to recognize my identity as trans by looking at me. | .729 |
| Physical Identity | 16 | I have, or would like to, make changes in my appearance to help others see my identity as trans. | .825 |
| Centrality | 4 | When I think of who I am as a person, my identity as trans is among the first things that comes to mind. | .803 |
| Centrality | 8 | My identity as trans has very little to do with how I see myself. | -.622 |
| Centrality | 9 | My identity as trans is a very important part of who I am. | .803 |
| Centrality | 10 | I feel that other people cannot have a thorough understanding of me without understanding my identity as trans. | .706 |
| Centrality | 13 | I spend a lot of time thinking about my identity as trans. | .522 |

Table 10

*Factor Loadings for Final MGIQ Nonbinary Subscales*

| Subscale | Initial Item Number | Item | Factor Loading |
|---|---|---|---|
| Community | 6 | I would enjoy going to a night out exclusively for genderqueer or nonbinary people, assuming I would feel safe and accepted. | .878 |
| Community | 14 | I would like to go to a political rally targeted to genderqueer or nonbinary people. | .615 |
| Community | 15 | I would like to attend events specifically designated for genderqueer or nonbinary people, assuming I would feel safe and accepted at such events. | .927 |
| Physical Identity | 3 | It is NOT important to me that my physical body express my identity as genderqueer or nonbinary. | -.570 |
| Physical Identity | 5 | It is important to me that I express my identity as genderqueer or nonbinary through my outward appearance. | .871 |
| Physical Identity | 11 | I want my identity as genderqueer or nonbinary to be evident in my physical body. | .859 |
| Physical Identity | 12 | I would like others to recognize my identity as genderqueer or nonbinary by looking at me. | .858 |
| Physical Identity | 16 | I have, or would like to, make changes in my appearance to help others see my identity as genderqueer or nonbinary. | .863 |
| Centrality | 4 | When I think of who I am as a person, my identity as genderqueer or nonbinary is among the first things that comes to mind. | .816 |
| Centrality | 8 | My identity as genderqueer or nonbinary has very little to do with how I see myself. | -.622 |
| Centrality | 9 | My identity as genderqueer or nonbinary is a very important part of who I am. | .904 |
| Centrality | 10 | I feel that other people cannot have a thorough understanding of me without understanding my identity as genderqueer or nonbinary. | .725 |
| Centrality | 13 | I spend a lot of time thinking about my identity as genderqueer or nonbinary. | .742 |

Table 11
*Factor Loadings for Final MGIQ Unassigned Gender Subscales*

| Subscale | Initial Item Number | Item | Factor Loading |
|---|---|---|---|
| Community | 6 | I would enjoy going to a night out exclusively for [men/women], assuming I would feel safe and accepted. | .734 |
| Community | 14 | I would like to go to a political rally targeted to [men/women]. | .677 |
| Community | 15 | I would like to attend events specifically designated for [men/women] assuming I would feel safe and accepted at such events. | .925 |
| Physical Identity | 3 | It is NOT important to me that my physical body express my identity as a [man/woman]. | -.531 |
| Physical Identity | 5 | It is important to me that I express my identity as a [man/woman] through my outward appearance. | .767 |
| Physical Identity | 11 | I want my identity as a [man/woman] to be evident in my physical body. | .839 |
| Physical Identity | 12 | I would like others to recognize my identity as a [man/woman] by looking at me. | .827 |
| Physical Identity | 16 | I have, or would like to, make changes in my appearance to help others see my identity as a [man/woman]. | .771 |
| Centrality | 4 | When I think of who I am as a person, my identity as a [man/woman] is among the first things that comes to mind. | .799 |
| Centrality | 8 | My identity as a [man/woman] has very little to do with how I see myself. | -.735 |
| Centrality | 9 | My identity as a [man/woman] is a very important part of who I am. | .892 |
| Centrality | 10 | I feel that other people cannot have a thorough understanding of me without understanding my identity as a [man/woman]. | .653 |
| Centrality | 13 | I spend a lot of time thinking about my identity as a [man/woman]. | .526 |

Table 12

*Factor Loadings for Final MGIQ Assigned Gender Subscales*

| Subscale | Initial Item Number | Item | Factor Loading |
|---|---|---|---|
| Community | 6 | I would enjoy going to a night out exclusively for [men/women], assuming I would feel safe and accepted. | .775 |
| Community | 14 | I would like to go to a political rally targeted to [men/women]. | .822 |
| Community | 15 | I would like to attend events specifically designated for [men/women] assuming I would feel safe and accepted at such events. | .964 |
| Physical Identity | 3 | It is NOT important to me that my physical body express my identity as a [man/woman]. | -.485 |
| Physical Identity | 5 | It is important to me that I express my identity as a [man/woman] through my outward appearance. | .836 |
| Physical Identity | 11 | I want my identity as a [man/woman] to be evident in my physical body. | .866 |
| Physical Identity | 12 | I would like others to recognize my identity as a [man/woman] by looking at me. | .890 |
| Physical Identity | 16 | I have, or would like to, make changes in my appearance to help others see my identity as a [man/woman]. | .801 |
| Centrality | 4 | When I think of who I am as a person, my identity as a [man/woman] is among the first things that comes to mind. | .817 |
| Centrality | 8 | My identity as a [man/woman] has very little to do with how I see myself. | -.485 |
| Centrality | 9 | My identity as a [man/woman] is a very important part of who I am. | .768 |
| Centrality | 10 | I feel that other people cannot have a thorough understanding of me without understanding my identity as a [man/woman]. | .713 |
| Centrality | 13 | I spend a lot of time thinking about my identity as a [man/woman]. | .417 |

Table 13

*Descriptive Statistics for MGIQ Subscales*

| MGIQ subscale | Mean (total sample; N = 521) | SD (total sample; N = 521) | Mean (responding participants only) | SD (responding participants only) | Range (responding participants only) | Responding participants (*n*=480 for Trans; *n*=165 for Nonbinary; *n*=461 for Unassigned Gender)* |
|---|---|---|---|---|---|---|
| | | | *Trans* | | | |
| Community | 10.99 | 5.53 | 11.87 | 4.75 | 0-18 | 475 |
| Physical Identity | 11.87 | 8.14 | 12.82 | 7.70 | 0-30 | 477 |
| Centrality | 17.55 | 7.97 | 18.95 | 6.48 | 0-30 | 478 |
| | | | *Nonbinary* | | | |
| Community | 4.60 | 6.92 | 13.88 | 3.92 | 0-18 | 164 |
| Physical Identity | 6.29 | 9.90 | 18.98 | 7.38 | 0-30 | 164 |
| Centrality | 7.04 | 10.64 | 21.25 | 6.26 | 4-30 | 164 |
| | | | *Unassigned Gender* | | | |
| Community | 10.18 | 5.57 | 11.42 | 4.54 | 0-18 | 435 |
| Physical Identity | 24.21 | 9.22 | 27.12 | 4.03 | 2-30 | 441 |
| Centrality | 19.69 | 8.56 | 22.05 | 5.46 | 2-30 | 441 |

*Note.* In the total sample, for participants who did not endorse a particular identity, all subscales for that identity were set equal to zero. For the "responding participants only" samples, participants who did not endorse a particular identity were excluded from analyses for the subscales related to that identity.

*Number of responding participants may differ slightly within an identity category due to missing responses to subscale items

Table 14

*Participant Dropout Across Study Questionnaires*

| Measure | Participants Newly Dropped Out | Total Participants Dropped Out | Total Remaining Participants |
|---|---|---|---|
| All Responding Participants | 0 | 0 | 521 |
| MGIQ Trans Scale | 3 | 3 | 518 |
| MGIQ Man Scale | 0 | 3 | 518 |
| MGIQ Woman Scale | 12 | 15 | 506 |
| MGIQ Nonbinary Scale | 12 | 24 | 497 |
| Demographics Questionnaire | 33 | 57 | 464 |
| Transition Questionnaire | 0 | 57 | 464 |
| Trans Activism Scale | 4 | 61 | 460 |
| DASS | 3 | 64 | 457 |
| BSRI Short Form | 6 | 70 | 451 |
| TCS | 2 | 72 | 449 |
| SWLS | 1 | 73 | 448 |

MGIQ = Multilayered Gender Identity Questionnaires; DASS = Depression Anxiety Stress Scale; BSRI = Bem Sex Role Inventory; TCS = Transgender Congruence Scale; SWLS = Satisfaction with Life Scale

Table 15

*Descriptive Statistics of MGIQ Scores by Identity Labels Endorsed (Entire Sample Included)*

| MGIQ subscale | Endorsing Corresponding Label | | Not Endorsing Corresponding Label | |
| --- | --- | --- | --- | --- |
| | Mean | SD | Mean | SD |
| *Trans* | | | | |
| Community | 12.48 | 4.36 | 7.55*** | 6.36 |
| Physical Identity | 13.64 | 7.61 | 7.79*** | 7.85 |
| Centrality | 20.09 | 6.14 | 11.71*** | 8.62 |
| *Nonbinary* | | | | |
| Community | 12.92 | 5.50 | 0.84*** | 3.22 |
| Physical Identity | 17.89 | 8.80 | 1.05*** | 4.34 |
| Centrality | 20.06 | 8.58 | 1.16*** | 4.47 |
| *Unassigned Gender* | | | | |
| Community | 11.82 | 4.28 | 3.59*** | 5.31 |
| Physical Identity | 27.80 | 2.82 | 9.68*** | 11.58 |
| Centrality | 22.78 | 4.94 | 7.14*** | 8.65 |

***$p < .001$

Table 16

*Descriptive Statistics of MGIQ Unassigned Gender Scores by Transition Status (Entire Sample Included)*

| MGIQ Unassigned Gender Subscale | Transition | | No Transition | |
|---|---|---|---|---|
| | Mean | SD | Mean | SD |
| Community | 11.07 | 5.07 | 8.56*** | 6.07 |
| Physical Identity | 26.08 | 7.20 | 20.83*** | 11.31 |
| Centrality | 21.15 | 7.37 | 17.02*** | 9.84 |

***$p < .001$

Table 17

*Correlations of MGIQ Subscales for Strongest Identified Gender with Life Satisfaction*

| Variable | Correlation with SWLS |
|---|---|
| MGIQ Community (all participants; N=448) | .017 |
| MGIQ Physical Identity (all participants; N=448) | -.054 |
| MGIQ Centrality (all participants; N=448) | -.060 |
| MGIQ Community (max identity=Trans; *n*=44) | -.113 |
| MGIQ Physical Identity (max identity=Trans; *n*=44) | -.141 |
| MGIQ Centrality (max identity=Trans; *n*=44) | -.104 |
| MGIQ Community (max identity=Nonbinary; *n*=86) | .344** |
| MGIQ Physical Identity (max identity=Nonbinary; *n*=86) | .177 |
| MGIQ Centrality (max identity=Nonbinary; *n*=86) | .377*** |
| MGIQ Community (max identity=Unassigned Gender; *n*=318) | -.076 |
| MGIQ Physical Identity (max identity=Unassigned Gender; *n*=318) | -.080 |
| MGIQ Centrality (max identity=Unassigned Gender; *n*=318) | -.198*** |

**p* < .01; ****p* < .001

Table 18

*Correlations of MGIQ Subscales and Psychological Distress*

| Variable | Correlation with DASS |
|---|---|
| MGIQ Trans Community (all; $n = 453$) | .021 |
| MGIQ Trans Physical Identity (all; $n=455$) | .135** |
| MGIQ Trans Centrality (all; $n = 456$) | .062 |
| MGIQ Trans Community (responding participants only; $n=423$) | .028 |
| MGIQ Trans Physical Identity (responding participants only; $n=425$) | .192*** |
| MGIQ Trans Centrality (responding participants only; $n=426$) | .147** |
| MGIQ Nonbinary Community (all; $n=456$) | -.025 |
| MGIQ Nonbinary Physical Identity (all; $n=456$) | .008 |
| MGIQ Nonbinary Centrality (all; $n=456$) | -.015 |
| MGIQ Nonbinary Community (responding participants only; $n=152$) | -.215** |
| MGIQ Nonbinary Physical Identity (responding participants only; $n=152$) | -.028 |
| MGIQ Nonbinary Centrality (responding participants only; $n=152$) | -.160* |
| MGIQ Unassigned Community (all; $n=450$) | -.042 |
| MGIQ Unassigned Physical Identity (all; $n=455$) | -.058 |
| MGIQ Unassigned Centrality (all; $n=455$) | .015 |
| MGIQ Unassigned Community (responding participants only; $n=402$) | .002 |
| MGIQ Unassigned Physical Identity (responding participants only; $n=407$) | .017 |
| MGIQ Unassigned Centrality (responding participants only; $n=407$) | .128* |

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

Table 19

*Linear Regression Analysis for Proportion of Friends Identifying as the Unassigned Gender*

| | B | SE B | β | t | $R^2$ | $\Delta R^2$ | *F*-change |
|---|---|---|---|---|---|---|---|
| *Including Entire Sample (N=407)* | | | | | | | |
| Step 1: TCS | 0.16 | .104 | .077 | 1.56 | .006 | .006 | 2.42 |
| | | | | | | | |
| Step 2 | | | | | .073 | .067 | 9.73*** |
| TCS | 0.21 | .101 | .099 | 2.05* | | | |
| MGIQ Unassigned Community | 0.84 | .285 | .210 | 2.94** | | | |
| MGIQ Unassigned Physical | 0.24 | .244 | .097 | 0.98 | | | |
| MGIQ Unassigned Centrality | -0.08 | .277 | -.030 | -0.29 | | | |
| | | | | | | | |
| *Responding Participants Only (N=365)* | | | | | | | |
| Step 1: TCS | 0.23 | .108 | .112 | 2.15* | .013 | .013 | 4.62* |
| | | | | | | | |
| Step 2 | | | | | .048 | .036 | 4.50** |
| TCS | 0.24 | .107 | .115 | 2.24* | | | |
| MGIQ Unassigned Community | 0.84 | .289 | .174 | 2.89** | | | |
| MGIQ Unassigned Physical | 0.30 | .381 | .050 | 0.78 | | | |
| MGIQ Unassigned Centrality | -0.08 | .281 | -.019 | -0.28 | | | |

TCS=Transgender Congruence Scale

*p < .05, **p < .01, ***p < .001.

Table 20

*Linear Regression Analyses for Proportion of Friends Identifying as Trans/Nonbinary*

| | B | SE B | $\beta$ | t | $R^2$ | $\Delta R^2$ | *F*-change |
|---|---|---|---|---|---|---|---|
| *Model using the Trans Scale Including Entire Sample (N=414)* | | | | | | | |
| Step 1: TCS | 0.10 | .100 | .052 | 1.05 | .003 | .003 | 1.10 |
| Step 2 | | | | | .111 | .108 | 16.55*** |
| TCS | 0.20 | .098 | .099 | 2.06* | | | |
| MGIQ Trans Community | 0.92 | .255 | .236 | 3.62*** | | | |
| MGIQ Trans Physical | 0.36 | .164 | .136 | 2.18* | | | |
| MGIQ Trans Centrality | 0.01 | .198 | .005 | 0.07 | | | |
| *Model Using the Trans Scale Including Trans-Identified Participants Only (N=387)* | | | | | | | |
| Step 1: TCS | 0.14 | .105 | .069 | 1.36 | .005 | .005 | 1.84 |
| Step 2 | | | | | .143 | .138 | 20.54*** |
| TCS | 0.23 | .101 | .112 | 2.29* | | | |
| MGIQ Trans Community | 1.12 | .260 | .246 | 4.30*** | | | |
| MGIQ Trans Physical | 0.35 | .163 | .125 | 2.13* | | | |
| MGIQ Trans Centrality | 0.27 | .209 | .080 | 1.28 | | | |
| *Model Using the Nonbinary Scale Including Entire Sample (N=415)* | | | | | | | |
| Step 1: TCS | 0.12 | .100 | .059 | 1.20 | .003 | .003 | 1.44 |
| Step 2 | | | | | .111 | .108 | 16.55*** |
| TCS | 0.12 | .093 | .057 | 1.24 | | | |
| MGIQ Nonbinary Community | 1.10 | .462 | .351 | 2.37* | | | |
| MGIQ Nonbinary Physical | -0.18 | .290 | .083 | 0.62 | | | |
| MGIQ Nonbinary Centrality | -0.15 | .345 | -.075 | -0.45 | | | |
| *Model Using the Nonbinary Scale Including Nonbinary-Identified Participants Only (N=137)* | | | | | | | |
| Step 1: TCS | .18 | .243 | .062 | .73 | .004 | .004 | .53 |
| Step 2 | | | | | .101 | .097 | 4.76** |
| TCS | -0.08 | .244 | -.027 | -.31 | | | |
| MGIQ Nonbinary Community | 1.73 | .652 | .270 | 2.66** | | | |
| MGIQ Nonbinary Physical | 0.18 | .352 | .055 | 0.52 | | | |
| MGIQ Nonbinary Centrality | 0.17 | .452 | .041 | 0.39 | | | |

TCS=Transgender Congruence Scale
*p < .05, **p < .01, ***p < .001.

Table 21

*Linear Regression Analysis for Involvement in Trans Activism*

|  | B | SE B | $\beta$ | t | $R^2$ | $\Delta R^2$ | *F*-change |
|---|---|---|---|---|---|---|---|
| *Including Entire Sample (N=443)* | | | | | | | |
| Step 1: TCS | 0.22 | .054 | .193 | 4.13*** | .037 | .037 | 17.08*** |
| Step 2 | | | | | .393 | .356 | 85.54*** |
| TCS | 0.27 | .045 | .228 | 5.93*** | | | |
| MGIQ Trans Community | 1.33 | .116 | .593 | 11.42*** | | | |
| MGIQ Trans Physical | -0.03 | .074 | -.019 | -0.39 | | | |
| MGIQ Trans Centrality | 0.03 | .088 | .021 | 0.36 | | | |
| *Responding Participants Only (N=413)* | | | | | | | |
| Step 1: TCS | 0.26 | .056 | .224 | 4.66*** | .050 | .050 | 21.67*** |
| Step 2 | | | | | .447 | .397 | 97.81*** |
| TCS | 0.29 | .045 | .228 | 5.93*** | | | |
| MGIQ Trans Community | 1.46 | .113 | .573 | 12.92*** | | | |
| MGIQ Trans Physical | -0.04 | .071 | -.024 | -0.52 | | | |
| MGIQ Trans Centrality | 0.22 | .090 | .116 | 2.42* | | | |

TCS=Transgender Congruence Scale

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

Appendix A

1) What were your initial reactions to the questionnaire?
2) Are there important aspects of gender identity that you feel weren't addressed by the questionnaire, or any additional items you feel would help capture the aspects of gender identity the questionnaire already asks about?
3) Were there particular questions you felt were confusing or should have used different wording?
4) This questionnaire was attempting to look at the fact that people don't have to identify exclusively as a "man," a "woman," or a "genderqueer person," and that we can have different layers to our gender identities that we prioritize or want to express to varying degrees. Do you feel that the approach of asking about each "part" of identity separately served that purpose, or did it lead to confusion? How might the questionnaire be worded or framed differently to reduce any confusion?
5) This questionnaire aims to be as inclusive as possible, while also trying to research and understand the common experiences of people who identify more fully as men, more fully as women, or more fully as a queer or nonbinary identity. Do you feel the questionnaire was adequately inclusive? Are there other steps you feel should be taken to increase its inclusivity?
6) In the third section that asks about queer or nonbinary identity, the online version of the measure autopopulates the "transgender, genderqueer, or nonbinary" sections of text with the specific identity respondents typed in when I asked them to describe their identities. Do you feel this approach is helpful, or do you feel it might add to confusion if respondents typed in unusual responses? Would allowing participants to select from a limited set of options improve the situation, or do you feel that could be too limiting for people?

Appendix B

Multilayered Gender Identity Questionnaires (Item Development Phase)

Please note that you may answer "Yes" to more than one of questions 1, 2, and 3.

1) Do you identify as a man to any extent?
   ☐ Yes
   ☐ No

If you selected "No" for question 1, please skip the next set of questions and proceed to question 2.

| | Strongly Disagree | Disagree | Slightly Disagree | Neutral | Slightly Agree | Agree | Strongly Agree |
|---|---|---|---|---|---|---|---|
| When I think of who I am as a person, my identity as a man is among the first things that come to mind. | 0 | 1 | 2 | 3 | 4 | 5 | 6 |
| My identity as a man is a very important part of who I am. | 0 | 1 | 2 | 3 | 4 | 5 | 6 |
| I feel that other people cannot have a thorough understanding of me without understanding my identity as a man. | 0 | 1 | 2 | 3 | 4 | 5 | 6 |
| My identity as a man has very little to do with how I see myself. | 0 | 1 | 2 | 3 | 4 | 5 | 6 |
| It is important to me that I express my identity as a man through my outward appearance. | 0 | 1 | 2 | 3 | 4 | 5 | 6 |
| I want my identity as a man to be evident in my physical body. | 0 | 1 | 2 | 3 | 4 | 5 | 6 |
| It is NOT important to me that my physical body express my identity as a man. | 0 | 1 | 2 | 3 | 4 | 5 | 6 |
| I would like others to recognize my identity as a man when they look at me. | 0 | 1 | 2 | 3 | 4 | 5 | 6 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| I have, or would like to, make changes in my appearance to help others see my identity as a man. | 0 | 1 | 2 | 3 | 4 | 5 | 6 |
| The way I want to present myself physically is unrelated to my identity as a man. | 0 | 1 | 2 | 3 | 4 | 5 | 6 |
| I feel a strong sense of connection to people who identify as men. | 0 | 1 | 2 | 3 | 4 | 5 | 6 |
| I like to spend time with groups of men when given the opportunity. | 0 | 1 | 2 | 3 | 4 | 5 | 6 |
| I would like to attend events specifically designated for men, assuming I would be allowed at such events. | 0 | 1 | 2 | 3 | 4 | 5 | 6 |
| I would enjoy going on a men-only night out, assuming I would be allowed. | 0 | 1 | 2 | 3 | 4 | 5 | 6 |

2) Do you identify as a woman to any extent?
   ☐ Yes
   ☐ No

If you selected "No" for question 2, please skip the next set of questions and proceed to question 3.

| | Strongly Disagree | Disagree | Slightly Disagree | Neutral | Slightly Agree | Agree | Strongly Agree |
|---|---|---|---|---|---|---|---|
| When I think of who I am as a person, my identity as a woman is among the first things that come to mind. | 0 | 1 | 2 | 3 | 4 | 5 | 6 |
| My identity as a woman is a very important part of who I am. | 0 | 1 | 2 | 3 | 4 | 5 | 6 |
| I feel that other people cannot have a thorough understanding of me without understanding my identity as a woman. | 0 | 1 | 2 | 3 | 4 | 5 | 6 |
| My identity as a woman has very little to do with how I see myself. | 0 | 1 | 2 | 3 | 4 | 5 | 6 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| It is important to me that I express my identity as a woman through my outward appearance. | 0 | 1 | 2 | 3 | 4 | 5 | 6 |
| I want my identity as a woman to be evident in my physical body. | 0 | 1 | 2 | 3 | 4 | 5 | 6 |
| It is NOT important to me that my physical body express my identity as a woman. | 0 | 1 | 2 | 3 | 4 | 5 | 6 |
| I would like others to recognize my identity as a woman when they look at me. | 0 | 1 | 2 | 3 | 4 | 5 | 6 |
| I have, or would like to, make changes in my appearance to help others see my identity as a woman. | 0 | 1 | 2 | 3 | 4 | 5 | 6 |
| The way I want to present myself physically is unrelated to my identity as a woman. | 0 | 1 | 2 | 3 | 4 | 5 | 6 |
| I feel a strong sense of connection to people who identify as women. | 0 | 1 | 2 | 3 | 4 | 5 | 6 |
| I like to spend time with groups of women when given the opportunity. | 0 | 1 | 2 | 3 | 4 | 5 | 6 |
| I would like to attend events specifically designated for women, assuming I would be allowed at such events. | 0 | 1 | 2 | 3 | 4 | 5 | 6 |
| I would enjoy going on a women-only night out, assuming I would be allowed. | 0 | 1 | 2 | 3 | 4 | 5 | 6 |

3) Many people identify as something other than "man" or "woman" in addition to, or instead of, identifying as a man or a woman. This may include identifying as "trans," "genderqueer," or "androgynous," among many other options.

Do you identify as any gender identity OTHER THAN "man" or "woman," or do you identify as trans to any extent?
- ☐ Yes
- ☐ No

If you answered "no" to the previous question, please skip the following set of questions and proceed to the end of the survey.

If you answered "yes" to the previous question, please enter a one- or two-word term that best describes this part of your gender identity. For example, "trans," "genderqueer," "androgynous," "nonbinary," or a wide range of other identity labels may apply.

_____

For the following questions, the term "transgender, genderqueer, and/or nonbinary" will be used to denote the identity you described above, while recognizing that you may have used a different term. This approach is used for the sake of simplicity, and is not meant to negate important differences represented by your particularly identity label. This part of the survey aims to understand the particular experiences of people who identify outside of the gender binary, but should not be taken as suggesting that all such identities are identical or interchangeable.

| | Strongly Disagree | Disagree | Slightly Disagree | Neutral | Slightly Agree | Agree | Strongly Agree |
|---|---|---|---|---|---|---|---|
| When I think of who I am as a person, my identity as a transgender, genderqueer, and/or nonbinary is among the first things that come to mind. | 0 | 1 | 2 | 3 | 4 | 5 | 6 |
| My identity as transgender, genderqueer, and/or nonbinary is a very important part of who I am. | 0 | 1 | 2 | 3 | 4 | 5 | 6 |
| I feel that other people cannot have a thorough understanding of me without understanding my identity as a transgender, genderqueer, and/or nonbinary. | 0 | 1 | 2 | 3 | 4 | 5 | 6 |
| My identity as transgender, genderqueer, and/or nonbinary has very little to do with how I see myself. | 0 | 1 | 2 | 3 | 4 | 5 | 6 |
| It is important to me that I express my identity as transgender, genderqueer, and/or nonbinary through my outward appearance. | 0 | 1 | 2 | 3 | 4 | 5 | 6 |
| I want my identity as transgender, genderqueer, and/or nonbinary to be evident in my physical body. | 0 | 1 | 2 | 3 | 4 | 5 | 6 |
| It is NOT important to me that my physical body express my identity as transgender, genderqueer, and/or nonbinary. | 0 | 1 | 2 | 3 | 4 | 5 | 6 |
| I would like others to recognize my identity as transgender, genderqueer, and/or nonbinary when they look at me. | 0 | 1 | 2 | 3 | 4 | 5 | 6 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| I have, or would like to, make changes in my appearance to help others see my identity as transgender, genderqueer, and/or nonbinary. | 0 | 1 | 2 | 3 | 4 | 5 | 6 |
| The way I want to present myself physically is unrelated to my identity as transgender, genderqueer, and/or nonbinary. | 0 | 1 | 2 | 3 | 4 | 5 | 6 |
| I feel a strong sense of connection to people who identify as transgender, genderqueer, and/or nonbinary. | 0 | 1 | 2 | 3 | 4 | 5 | 6 |
| I like to spend time with groups of transgender, genderqueer, and/or nonbinary people when given the opportunity. | 0 | 1 | 2 | 3 | 4 | 5 | 6 |
| I would like to attend events specifically designated for transgender, genderqueer, and/or nonbinary people, assuming I would be allowed at such events. | 0 | 1 | 2 | 3 | 4 | 5 | 6 |
| I would enjoy going on a night out exclusively for transgender, genderqueer, and/or nonbinary people, assuming I would be allowed. | 0 | 1 | 2 | 3 | 4 | 5 | 6 |

Appendix C

Screener Questions

1) What is your age? _____

2) What sex were you assigned at birth?
o   Male
o   Female
o   Intersex

3) How would you label your gender identity? Please select all that apply.
☐ Woman
☐ Transwoman
☐ Man
☐ Transman
☐ Genderqueer
☐ Transgender
☐ Transsexual
☐ Nonbinary
☐ Crossdresser
☐ Bigender/dual gender
☐ Intergender
☐ Drag king
☐ Androgynous
☐ Drag queen
☐ Agender
☐ I don't use any label for my gender identity
☐ I do not identify as gendered

Appendix D

Multilayered Gender Identity Questionnaires (as administered in the Scale Development/Validation Phase)

The questions below ask about your gender identity. Note that these questions will ask whether you identify:
- as trans
- as a man
- as a woman,
- or as nonbinary or another gender identity
 to any extent.

You will be asked about each of these identities separately; **you may identify as more than one of them.**

Do you identify as trans to any extent?
☐ Yes
☐ No

Please indicate the degree to which you agree with each of the following statements on the following scale: *(NOTE: Bold items were retained in the final MGIQ)*
1: Strongly disagree
2: Disagree
3: Somewhat disagree
4: Neither agree nor disagree
5: Somewhat agree
6: Agree
7: Strongly agree

1) I like to spend time with groups of trans people when given the opportunity.
2) I feel a strong sense of connection to people who identify as trans.
3) **It is NOT important to me that my physical body express my identity as trans.**
4) **When I think of who I am as a person, my identity as trans is among the first things that come to mind.**
5) **It is important to me that I express my identity as trans through my outward appearance.**
6) **I would enjoy going on a night out exclusively for trans people, assuming I would feel safe and accepted.**
7) The way I want to present myself physically is unrelated to my identity as trans.
8) **My identity as trans has very little to do with how I see myself.**
9) **My identity as trans is a very important part of who I am.**
10) **I feel that other people cannot have a thorough understanding of me without understanding my identity as trans.**
11) **I want my identity as trans to be evident in my physical body.**
12) **I would like others to recognize my identity as trans by looking at me.**
13) **I spend a lot of time thinking about my identity as trans.**
14) **I would like to go to a political rally targeted to trans people.**

**15) I would like to attend events specifically designated for trans people, assuming I would feel safe and accepted at such events.**
**16) I have, or would like to, make changes in my appearance to help others see my identity as trans.**

Do you identify as a man to any extent?
- ☐ Yes
- ☐ No

Please indicate the degree to which you agree with each of the following statements on the following scale: *(NOTE: Bold items were retained in the final MGIQ)*
1: Strongly disagree
2: Disagree
3: Somewhat disagree
4: Neither agree nor disagree
5: Somewhat agree
6: Agree
7: Strongly agree

1) I like to spend time with groups of men when given the opportunity.
2) I feel a strong sense of connection to people who identify as men.
3) **It is NOT important to me that my physical body express my identity as a man.**
4) **When I think of who I am as a person, my identity as a man is among the first things that come to mind.**
5) **It is important to me that I express my identity as a man through my outward appearance.**
6) **I would enjoy going on a men-only night out, assuming I would feel safe and accepted.**
7) The way I want to present myself physically is unrelated to my identity as a man.
8) **My identity as a man has very little to do with how I see myself.**
9) **My identity as a man is a very important part of who I am.**
10) **I feel that other people cannot have a thorough understanding of me without understanding my identity as a man.**
11) **I want my identity as a man to be evident in my physical body.**
12) **I would like others to recognize my identity as a man by looking at me.**
13) **I spend a lot of time thinking about my identity as a man.**
14) **I would like to go to a political rally targeted to men.**
15) **I would like to attend events specifically designated for men, assuming I would feel safe and accepted at such events.**
16) **I have, or would like to, make changes in my appearance to help others see my identity as a man.**

Do you identify as a woman to any extent?
- ☐ Yes
- ☐ No

Please indicate the degree to which you agree with each of the following statements on the following scale: *(NOTE: Bold items were retained in the final MGIQ)*
1: Strongly disagree
2: Disagree
3: Somewhat disagree
4: Neither agree nor disagree
5: Somewhat agree
6: Agree
7: Strongly agree

1) I like to spend time with groups of women when given the opportunity.
2) I feel a strong sense of connection to people who identify as women.
3) **It is NOT important to me that my physical body express my identity as a woman.**
4) **When I think of who I am as a person, my identity as a woman is among the first things that come to mind.**
5) **It is important to me that I express my identity as a woman through my outward appearance.**
6) **I would enjoy going on a women-only night out, assuming I would feel safe and accepted.**
7) The way I want to present myself physically is unrelated to my identity as a woman.
8) **My identity as a woman has very little to do with how I see myself.**
9) **My identity as a woman is a very important part of who I am.**
10) **I feel that other people cannot have a thorough understanding of me without understanding my identity as a woman.**
11) **I want my identity as a woman to be evident in my physical body.**
12) **I would like others to recognize my identity as a woman by looking at me.**
13) **I spend a lot of time thinking about my identity as a woman.**
14) **I would like to go to a political rally targeted to women.**
15) **I would like to attend events specifically designated for women, assuming I would feel safe and accepted at such events.**
16) **I have, or would like to, make changes in my appearance to help others see my identity as a woman.**

Many people identify as a gender identity that falls outside the gender binary. They may endorse identity labels such as "nonbinary," "genderqueer," or "and rogynous," among many other options.

Do you identify as any gender identity OTHER THAN "man," "woman," or "trans" to any extent?
☐ Yes
☐ No

If you answered "yes" to the previous question, please enter a one- or two-word term that best describes this part of your identity. For example, "genderqueer," "androgynous," "nonbinary," or a wide range of other identity labels may apply.

_____

For the following questions, the term "genderqueer or nonbinary" will be used to deno te the identity you described above, while recognizing that you may have used a different term. This approach is used for the sake of simplicity, and is not meant to negate important differences represented by your particular identity label. This part of the survey aims to understand the particular experiences of people who identify outside of the gender binary, but should not be taken as suggesting that all such identities are identical or interchangeable.

Please indicate the degree to which you agree with each of the following statements on the following scale: *(NOTE: Bold items were retained in the final MGIQ)*
1: Strongly disagree
2: Disagree
3: Somewhat disagree
4: Neither agree nor disagree
5: Somewhat agree
6: Agree
7: Strongly agree

1) I like to spend time with groups of genderqueer or nonbinary people when given the opportunity.
2) I feel a strong sense of connection to people who identify as genderqueer or nonbinary.
3) **It is NOT important to me that my physical body express my identity as genderqueer or nonbinary.**
4) **When I think of who I am as a person, my identity as genderqueer or nonbinary is among the first things that come to mind.**
5) **It is important to me that I express my identity as genderqueer or nonbinary through my outward appearance.**
6) **I would enjoy going on a night out exclusively for genderqueer or nonbinary people, assuming I would feel safe and accepted.**
7) The way I want to present myself physically is unrelated to my identity as genderqueer or nonbinary.
8) **My identity as genderqueer or nonbinary has very little to do with how I see myself.**
9) **My identity as genderqueer or nonbinary is a very important part of who I am.**
10) **I feel that other people cannot have a thorough understanding of me without understanding my identity as genderqueer or nonbinary.**
11) **I want my identity as genderqueer or nonbinary to be evident in my physical body.**
12) **I would like others to recognize my identity as genderqueer or nonbinary by looking at me.**
13) **I spend a lot of time thinking about my identity as genderqueer or nonbinary.**
14) **I would like to go to a political rally targeted to genderqueer or nonbinary people.**
15) **I would like to attend events specifically designated for genderqueer or nonbinary people, assuming I would feel safe and accepted at such events.**
16) **I have, or would like to, make changes in my appearance to help others see my identity as genderqueer or nonbinary.**

Appendix E

Final Multilayered Gender Identity Questionnaires

The questions below ask about your gender identity. Note that these questions will ask whether you identify:

- as trans
- as a man
- as a woman,
- or as nonbinary or another gender identity to any extent.

You will be asked about each of these identities separately; **you may identify as more than one of them.**

Do you identify as trans to any extent?
☐ Yes
☐ No

Please indicate the degree to which you agree with each of the following statements on the following scale:
1: Strongly disagree
2: Disagree
3: Somewhat disagree
4: Neither agree nor disagree
5: Somewhat agree
6: Agree
7: Strongly agree

1) It is NOT important to me that my physical body express my identity as trans. **(P, R)**
2) When I think of who I am as a person, my identity as trans is among the first things that come to mind. **(Ce)**
3) It is important to me that I express my identity as trans through my outward appearance. **(P)**
4) I would enjoy going on a night out exclusively for trans people, assuming I would feel safe and accepted. **(Co)**
5) My identity as trans has very little to do with how I see myself. (**Ce, R**)
6) My identity as trans is a very important part of who I am. **(Ce)**
7) I feel that other people cannot have a thorough understanding of me without understanding my identity as trans. (**Ce**)
8) I want my identity as trans to be evident in my physical body. **(P)**
9) I would like others to recognize my identity as trans by looking at me. **(P)**
10) I spend a lot of time thinking about my identity as trans. **(Ce)**
11) I would like to go to a political rally targeted to trans people. **(Co)**
12) I would like to attend events specifically designated for trans people, assuming I would feel safe and accepted at such events. **(Co)**
13) I have, or would like to, make changes in my appearance to help others see my identity as trans. **(P)**

*Scoring: Recode the 1-7 scale into a 0-6 scale by subtracting one from each item. Items marked with **R** are reverse-coded (0->6, 1->5, 2->4, 3->3, 4->2, 5->1, 6->0). After recoding and reverse coding, sum all items marked with the same subscale code (**Co** for Community, **P** for Physical Identity, **Ce** for Centrality) to obtain the MGIQ Trans subscale scores. For respondents who indicated that they do not identify as trans to any extent, code all MGIQ Trans subscale scores as 0.*

Do you identify as a man to any extent?
- ☐ Yes
- ☐ No

Please indicate the degree to which you agree with each of the following statements on the following scale:
1: Strongly disagree
2: Disagree
3: Somewhat disagree
4: Neither agree nor disagree
5: Somewhat agree
6: Agree
7: Strongly agree

1) It is NOT important to me that my physical body express my identity as a man. **(P, R)**
2) When I think of who I am as a person, my identity as a man is among the first things that come to mind. **(Ce)**
3) It is important to me that I express my identity as a man through my outward appearance. **(P)**
4) I would enjoy going on a men-only night out, assuming I would feel safe and accepted. **(Co)**
5) My identity as a man has very little to do with how I see myself. **(Ce, R)**
6) My identity as a man is a very important part of who I am. **(Ce)**
7) I feel that other people cannot have a thorough understanding of me without understanding my identity as a man. **(Ce)**
8) I want my identity as a man to be evident in my physical body. **(P)**
9) I would like others to recognize my identity as a man by looking at me. **(P)**
10) I spend a lot of time thinking about my identity as a man. **(Ce)**
11) I would like to go to a political rally targeted to men. **(Co)**
12) I would like to attend events specifically designated for men, assuming I would feel safe and accepted at such events. **(Co)**
13) I have, or would like to, make changes in my appearance to help others see my identity as a man. **(P)**

*Scoring: Recode the 1-7 scale into a 0-6 scale by subtracting one from each item. Items marked with **R** are reverse-coded (0->6, 1->5, 2->4, 3->3, 4->2, 5->1, 6->0). After recoding and reverse coding, sum all items marked with the same subscale code (**Co** for Community, **P** for Physical Identity, **Ce** for Centrality); for natal males, this gives the MGIQ Assigned Gender subscale scores, and for natal females, this gives the MGIQ Unassigned Gender subscale scores. For respondents who indicated that they do not identify as a man to any extent, code these subscale scores as 0.*

Do you identify as a woman to any extent?
☐ Yes
☐ No

Please indicate the degree to which you agree with each of the following statements on the following scale:
1: Strongly disagree
2: Disagree
3: Somewhat disagree
4: Neither agree nor disagree
5: Somewhat agree
6: Agree
7: Strongly agree

1) It is NOT important to me that my physical body express my identity as a woman. **(P, R)**
2) When I think of who I am as a person, my identity as a woman is among the first things that come to mind. **(Ce)**
3) It is important to me that I express my identity as a woman through my outward appearance. **(P)**
4) I would enjoy going on a women-only night out, assuming I would feel safe and accepted. **(Co)**
5) My identity as a woman has very little to do with how I see myself. **(Ce, R)**
6) My identity as a woman is a very important part of who I am. **(Ce)**
7) I feel that other people cannot have a thorough understanding of me without understanding my identity as a woman. **(Ce)**
8) I want my identity as a woman to be evident in my physical body. **(P)**
9) I would like others to recognize my identity as a woman by looking at me. **(P)**
10) I spend a lot of time thinking about my identity as a woman. **(Ce)**
11) I would like to go to a political rally targeted to women. **(Co)**
12) I would like to attend events specifically designated for women, assuming I would feel safe and accepted at such events. **(Co)**
13) I have, or would like to, make changes in my appearance to help others see my identity as a woman. **(P)**

*Scoring: Recode the 1-7 scale into a 0-6 scale by subtracting one from each item. Items marked with **R** are reverse-coded (0->6, 1->5, 2->4, 3->3, 4->2, 5->1, 6->0). After recoding and reverse coding, sum all items marked with the same subscale code (**Co** for Community, **P** for Physical Identity, **Ce** for Centrality); for natal females, this gives the MGIQ Assigned Gender subscale scores, and for natal males, this gives the MGIQ Unassigned Gender subscale scores. For respondents who indicated that they do not identify as a woman to any extent, code these subscale scores as 0.*

Many people identify as a gender identity that falls outside the gender binary. They may endorse identity labels such as "nonbinary," "genderqueer," or "androgynous," among many other options.

Do you identify as any gender identity OTHER THAN "man," "woman," or "trans" to any extent?
- ☐  Yes
- ☐  No

If you answered "yes" to the previous question, please enter a one- or two-word term that best describes this part of your identity. For example, "genderqueer," "androgynous," "nonbinary," or a wide range of other identity labels may apply.

_____

For the following questions, the term "genderqueer or nonbinary" will be used to denote the identity you described above, while recognizing that you may have used a different term. This approach is used for the sake of simplicity, and is not meant to negate important differences represented by your particular identity label. This part of the survey aims to understand the particular experiences of people who identify outside of the gender binary, but should not be taken as suggesting that all such identities are identical or interchangeable.

Please indicate the degree to which you agree with each of the following statements on the following scale:
1: Strongly disagree
2: Disagree
3: Somewhat disagree
4: Neither agree nor disagree
5: Somewhat agree
6: Agree
7: Strongly agree

1) It is NOT important to me that my physical body express my identity as genderqueer or nonbinary. **(P, R)**
2) When I think of who I am as a person, my identity as genderqueer or nonbinary is among the first things that come to mind. **(Ce)**
3) It is important to me that I express my identity as genderqueer or nonbinary through my outward appearance. **(P)**
4) I would enjoy going on a night out exclusively for genderqueer or nonbinary people, assuming I would feel safe and accepted. **(Co)**
5) My identity as genderqueer or nonbinary has very little to do with how I see myself. **(Ce, R)**
6) My identity as genderqueer or nonbinary is a very important part of who I am. **(Ce)**
7) I feel that other people cannot have a thorough understanding of me without understanding my identity as genderqueer or nonbinary. **(Ce)**
8) I want my identity as genderqueer or nonbinary to be evident in my physical body. **(P)**
9) I would like others to recognize my identity as genderqueer or nonbinary by looking at me. **(P)**
10) I spend a lot of time thinking about my identity as genderqueer or nonbinary. **(Ce)**
11) I would like to go to a political rally targeted to genderqueer or nonbinary people. **(Co)**
12) I would like to attend events specifically designated for genderqueer or nonbinary people, assuming I would feel safe and accepted at such events. **(Co)**

**13)** I have, or would like to, make changes in my appearance to help others see my identity as genderqueer or nonbinary. **(P)**

*Scoring: Recode the 1-7 scale into a 0-6 scale by subtracting one from each item. Items marked with **R** are reverse-coded (0->6, 1->5, 2->4, 3->3, 4->2, 5->1, 6->0). After recoding and reverse coding, sum all items marked with the same subscale code (**Co** for Community, **P** for Physical Identity, **Ce** for Centrality) to obtain the MGIQ Nonbinary subscale scores. For respondents who indicated that they do not identify with any gender identity outside of the gender binary to any extent, code all MGIQ Nonbinary subscale scores as 0.*