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A Review of Contemporary Assessment Tools for Use With Transgender and Gender Nonconforming Adults

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There is increasing recognition of the need for culturally sensitive services for individuals who identify as transgender and gender nonconforming (TGNC), and only recently have empirical studies appeared in the literature that inform best practices for TGNC people. Competent, culturally appropriate clinical services and research depend upon methodologically sound assessment of key constructs, but it is unclear whether appropriate self-report or clinician-rated assessment tools for adults exist. This article reviewed existing published measures to identify areas of strength as well as existing gaps in the available research. The search strategy for this systematic review identified any published article describing a self-report or clinician-rated scale for assessing transgender-related concerns. Each measure was reviewed for information on its scope, reliability, validity, strengths, limitations, and source. The majority of these questionnaires was developed with the TGNC communities and targeted important factors that affect quality of life for TGNC people. Limitations included limited evidence for validity, reliability, and sensitivity to change. Overall, the field is moving in the direction of TGNC-affirming assessment, and promising measures have been created to monitor important aspects of quality of life for TGNC people. Future research should continue to validate these measures for use in assessing clinical outcomes and the monitoring of treatment progress.

Public Significance Statement
This article identified and reviewed 8 culturally competent questionnaires for various constructs related to the experiences of the transgender and gender nonconforming (TGNC) communities and found that more research is needed on the validity of these scales. Utilizing the culturally competent, affirmative questionnaires identified in this article will help clinicians incorporate progress monitoring into evidence-based behavioral health care for the TGNC community.

Keywords: transgender, gender nonconforming, assessment, self-report measures

Individuals who identify as transgender and gender nonconforming (TGNC) experience an incongruence between their gender identity and their sex assigned at birth. TGNC individuals are at elevated risk of discrimination, stigma, and violence and experience escalated risk for mental health problems including depression, anxiety, substance abuse, and suicide compared to cisgender individuals (Bockting, Miner, Swinburne Romine, Hamilton, & Coleman, 2013; Clements-Nolle, Marx, Guzman, & Katz, 2001; Hendricks & Testa, 2012; Seelman, 2014). These high rates of psychological distress alongside systemic requirements for medical transition lead many in the TGNC communities to seek mental health services. Guidelines such as the American Psychological Association (APA, 2015) *Guidelines for Psychological Practice with Transgender and Gender Nonconforming People* and the World Professional Organization for Transgender Health's (WPATH's) *Standards of Care, Version 7* (Coleman et al., 2012) stress the importance and responsibility of mental health providers to deliver competent, affirmative services to TGNC individuals. However, only recently have published empirical studies examined TGNC affirmative care to inform practice guidelines (Austin & Craig, 2015). Competent care requires culturally appropriate, evidence-based assessment. The primary goal of this article is to

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review and evaluate the literature around self-report measures that assess various aspects of the psychological experience of being TGNC, with a particular focus on measures that would be appropriate to assess clinical outcomes.

Psychological Assessment With TGNC Individuals

Existing standards for TGNC care call for treatment to include comprehensive assessment of psychological constructs. The WPATH *Standards of Care, Version 7* calls for mental health providers to assess gender dysphoria and accompanying distress, and the APA's guidelines instruct providers to assess the influence of gender-related minority stress and resiliency (APA, 2015; Coleman et al., 2012). These guidelines indicate psychological assessment is essential, should capture the impact of discrimination and prejudice on psychological well-being, and may include diagnosing gender-related conditions.

DSM and Diagnosis

Gender-related diagnoses have evolved over several versions of the *Diagnostic and Statistical Manual of Mental Disorders* (*DSM*) of the American Psychiatric Association. Early emphasis was placed on diagnosing an individual's gender identity or gender-typed behavior and has since shifted toward affective aspects (such as contentment with one's gender) and associations with mental health (Beek, Cohen-Kettenis, & Kreukels, 2016). Transsexualism and gender identity disorder of children (GIDC) were first included in the Psychosexual Disorders category of *DSM–III* in 1980 (American Psychiatric Association, 1980). Transsexualism was defined as "an incongruence between anatomic sex and gender identity," indicating a diagnosis would apply to anyone who did not identify with their sex assigned at birth (American Psychiatric Association, 1980, p. 261). In the *DSM–III–R* (American Psychiatric Association, 1987), GIDC was moved to "disorders usually first evident in infancy, childhood, or adolescence." *DSM–IV* (American Psychiatric Association, 1994) had the first instance of gender identity disorder (GID) in adults. GID once again shifted categories to "sexual and gender identity disorders." The diagnosis also shifted its focus to behavior as opposed to identity, changing the defining feature from incongruence with one's anatomical sex to ways that incongruence plays out socially (Beek et al., 2016).

After *DSM–IV* and *DSM–IV–TR* (American Psychiatric Association, 2000), there was increased debate over the inclusion of GID in a 21st century nomenclature (*DSM–5*) given the social stigma associated with mental disorders (Green, McGowan, Levi, Wallbank, & Whittle, 2011). In response, WPATH formed a working group to advise the APA. However, WPATH had a difficult time achieving consensus on balancing the need to ensure transgender individuals receive needed services (which may require a diagnosis) with the associated stigma of a mental disorder. Ultimately, the working group recommended a diagnosis called "gender incongruence" that captured the clinical distress of negotiating a gender identity while excluding people with a clear gender identity, "who only experience clinically significant symptoms as a result of society's bias against gender-variant persons or due to the ongoing gender dysphoria that persists as a lack of treatment" (Green et al., 2011, p. 4). Instead of gender incongruence, the *DSM–5* lists gender dysphoria in its own section (American Psychiatric Association, 2013). Like the WPATH recommendations, gender dysphoria focuses on the psychological distress associated with gender incongruence, not merely the endorsement of a TGNC identity. Thus, the current description of gender dysphoria renders many diagnostic tools for GID, GIDC, and transsexualism outdated or not useful, as simple identification of individuals who possess a TGNC identity may no longer be clinically relevant.

Current Literature on TGNC Assessment

Accurate, evidence-based assessments of gender dysphoria, TGNC minority stress, and related constructs have emerged to meet clinical need and in response to professional standards for working with TGNC people. However, limited comparative information is available, and no comprehensive review of these measures exists. Schneider and colleagues (2016) compared two relatively recent measures, the Utrecht Gender Dysphoria Scale (Cohen-Kettenis & van Goozen, 1997) and the Gender Identity/Gender Dysphoria Questionnaire for Adolescents and Adults (Deogracias et al., 2007). Both scales predate the *DSM–5*, but are focused on facilitating diagnosis of gender dysphoria.

Beyond the Schneider et al. (2016) article, there is no known review of the various questionnaires, interview protocols, and assessment batteries that have been developed for use with TGNC individuals. Furthermore, the emphasis on gender dysphoria in *DSM–5*, rather than on particular behavior or adherence to certain culturally prescribed gender roles, means that measures focused only on "diagnosing" a gender identity are outdated. It is now important to move beyond diagnosis and instead focus on general psychological aspects associated with being TGNC. As such, this review sought to examine and evaluate the existing measures of distress, protective factors, and well-being TGNC people may experience as gender minorities. The present review does not evaluate measures that exclusively seek to identify people as transgender.

Literature Search Method

The search strategy involved queries to three large databases of health-related research in April 2016 for the search terms *transsexual OR transgender OR gender dysphoria OR gender incongruence OR gender identity disorder AND scale OR measures OR methods*. The databases, selected for topic area (mental health) and database size, were Medline, Academic Search Premier, and PsycINFO. The search returned 1,509 records from Medline, 1,433 records from Academic Search Premier, and 1,301 records from PsycINFO. An article was considered for inclusion in this review if it developed a measure or diagnostic tool for gender dysphoria, distress, or protective factors surrounding a nonbinary gender identity for adults. Articles using these measures were also included to inform the psychometric and validity sections. A total of 20 measures met inclusion criteria. As there are already reviews of childhood measures of gender variance (Zucker, 2005; Zucker & Wood, 2011), this review focused on measures for adults. Additionally, with the change in *DSM* diagnostic criteria and focus, measures aiming to generate diagnostic decisions for gender identity disorder are increasingly limited in clinical utility and, thus, are only briefly discussed below. Similarly, given the varying levels of medical intervention TGNC people may choose (Cole-

man et al., 2012), outdated measures that emphasized a need for TGNC people to undergo full medical transition were excluded. There were no measures found that were purely meant to diagnose individuals with the current *DSM–5* diagnosis of gender dysphoria. As a result, eight contemporary measures met the selection criteria and were reviewed in full for this study.

Excluded Diagnostic Measures

Twelve instruments focused on the diagnosis of GID, GIDC, or transsexualism were excluded from full review in this study. These measures were an Minnesota Multiphasic Personality Inventory Gender Dysphoria subscale (Althof, Lothstein, Jones, & Shen, 1983), the Masculine Gender Identity in Females Scale (Blanchard & Freund, 1983), the Utrecht Gender Dysphoria Scale (Cohen-Kettenis & van Goozen, 1997), the Gender Identity/Gender Dysphoria Questionnaire for Adolescents and Adults (Deogracias et al., 2007), the Gender Identity Scale for Men (Freund, Langevin, Satterberg, & Steiner, 1977), the Cross-Gender Questionnaire (Docter & Fleming, 1992), the Measures of Transgender Behavior (Docter & Fleming, 2001), Gender Dysphoria Syndrome Scales (MacKenzie, 1978), a Defense Mechanism Test (Sundbom & Bodlund, 1999), Body Image Scale (Lindgren & Pauly, 1975), Standardized Psychosocial Rating Format for Post Operation (Hunt & Hampson, 1980), and the Recalled Childhood Gender Identity/Gender Role Questionnaire (Zucker et al., 2006). Some scales' questions focused on play behavior as a child and adherence to gender stereotyped behavior, such as "I like to cook" (Althof et al., 1983), "In childhood or at puberty, did you like mechanics magazines?" (Blanchard & Freund, 1983), "In childhood fantasies did you sometimes imagine yourself driving a racing car?" (Freund et al., 1977), and "As a child, I experimented with cosmetics (make-up) and jewelry" (Zucker et al., 2006). Other scales featured questions on preferred sexual partners (Blanchard & Freund, 1983; Freund et al., 1977), now known to be a conflation of sexual orientation and gender identity. While there may remain some clinical utility for measures that assist in diagnosing gender-related conditions, changes in diagnostic criteria and stigmatizing role of language in culture make many of these measures outdated, and we recommend that they be used with caution if at all.

Review of Measures

Eight instruments assessing aspects of TGNC adjustment and functioning were included in the full review and are summarized in Table 1. Data reported in the text for each measure follows a standard structure that includes the scope of the measure (construct assessed), validity, strengths and weaknesses, and source. Table 1 summarizes scoring, psychometric information on reliability and subscales names. The source of each measure is provided to facilitate clinical and research use, with an emphasis on broadly available sources. Additionally, the original studies have been bolded in the references section to more easily identify the original validation articles. Whenever possible, other published articles which used the measure are included to extend the psychometric discussion beyond the original study. However, as many of these tools are new, it was common that no other articles using them had been published at the date of this review.

Gender Identity Reflection and Rumination Scale (GRRS).

Scope. The GRRS (Bauerband & Galupo, 2014) assesses the extent to which a person thinks about their gender identity, both positively (reflection) and negatively (rumination), and how others perceive their gender. The GRRS has 15 items and three factors: Reflection, Rumination, and Preoccupation With Other's Perceptions. Example items include "I think that I will never be able to present my gender the way I want," and "I wish I could stop thinking about my gender identity."

Validity. The original publication demonstrated good construct validity for the GRRS. The GRRS was negatively associated with the Transgender Congruence Scale reviewed below ($r = -.50$; Kozee, Tylka, & Bauerband, 2012). As expected, the GRRS correlated with other measures of rumination and reflection such as the Ruminative Responses Scale ($r = .52$; Treynor, Gonzalez, & Nolen-Hoeksema, 2003) and Rumination-Reflection Questionnaire ($r = .50$; Trapnell & Campbell, 1999), suggesting the tendency to think about one's gender identity was an aspect of an overall tendency toward rumination across various aspects of one's life. These correlations were consistent across the GRRS subscales ($r = .35$ to $.50$).

Strengths and limitations. The GRRS differs from many of the other measures reviewed here in that it looks at a specific process that is important in emotion regulation—rumination and reflection—in the transgender context rather than focusing on the experience of a TGNC identity more generally. The GRRS can be completed quickly with only 15 items. The scale connects to a broader literature on emotion-regulation processes (Smith & Alloy, 2009), which could be useful in both clinical and research settings. Unfortunately, there have been no additional studies since the initial publication. Test–retest reliability is unknown for the GRRS. Given that other measures of rumination are sensitive to assessment of change during an intervention, it seems likely the GRRS will be as well but that has not been tested yet.

How to obtain the GRRS. The GRRS is available online at https://mdsoar.org/handle/11603/1926 in the appendix of file TSP2012Bauerband.pdf.

Gender Minority Stress and Resilience Scale (GMRS).

Scope. Testa, Habarth, Peta, Balsam, and Bockting (2015) developed the GMRS to measure the difficulties associated with identifying as a gender minority and protective factors for psychological well-being. The GMRS was developed using Meyer's (2003) minority stress model and the expanded model for TGNC people (Hendricks & Testa, 2012). The 58 items were adapted from other measures and compiled into the GMRS to measure nine different constructs. Seven scales assess the stressors associated with transgender identity including Gender-Related Discrimination, Gender-Related Rejection, Gender-Related Victimization, Nonaffirmation of Gender Identity, Internalized Transphobia, Negative Expectations for Future Events, and Nondisclosure. The two resiliency scales are Community Connectedness and Pride.

Validity. The seven stressor scales were positively related to self-reported depression. Six of the seven stressor scales were positively related to social anxiety and life stressors (exception was Gender-Related Victimization) and perceived burdensomeness (exception was Negative Expectations for Future Events). The two resiliency scales were negatively associated with depression,

Table 1
Basic Information on Measures Included in the Review, Psychometric Data, and Scoring

Measure (authors)	Items	Subscales and reliability (Cronbach's α or ICC)	Scoring
Gender Identity Reflection and Rumination Scale (Bauerband & Galupo, 2014)	15	Reflection About Gender Identity (α = .76) Rumination About Gender Identity (α = .83) Preoccupation With Other's perceptions (α = .83) Total score (α = .89)	4-Point Likert-type scale Higher scores indicate more frequent thinking about gender identity
Gender Minority Stress and Resilience Scale (Testa et al., 2015)	58	Gender-Related Discrimination (α = .61) Gender-Related Rejection (α = .71) Gender-Related Victimization (α = .77) Nonaffirmation of Gender Identity (α = .93) Internalized Transphobia (α = .91) Negative Expectations for the Future (α = .89) Nondisclosure (α = .80) Pride (α = .90) Community Connectedness[a]	Subscale scores only Varied scoring between subscales Higher scores indicate more of the subscale
Strength of Transgender Identity Scale (Barr et al., 2016)	6	Total Score (α = .79)	7-Point Likert-type scale Higher scores indicate stronger gender identity
Transgender Adaptation and Integration Measure (Sjoberg et al., 2006)	15	Gender-Related Fears (α = .81) Psychosocial Impact of Gender Status (α = .72) Coping and Gender Reorientation Efforts (α = .73)	4-Point Likert-type scale Higher scores indicate better adjustment and less stress
Transgender Community Belongingness (Barr et al., 2016)	9	Total Score (α = .90)	5-Point Likert-type scale Higher scores indicate greater community support
Transgender Congruence Scale (Kozee et al., 2012)	12	Appearance Congruence (α = .94) Gender Identity Acceptance (α = .77) Total Score (α = .92)	5-Point Likert-type scale Average the 12 items Higher scores indicate higher congruence
Transgender Positive Identity Measure (Riggle & Mohr, 2015)	24	Authenticity (α = .89) Intimacy (α = .92) Community (α = .91) Social Justice (α = .90) Insights (α = .81) Total Scale (α = .93)	7-Point Likert-type scale Higher scores indicate greater positivity about gender
Transsexual Voice Questionnaire for Male-to-Female Transsexuals (Dacakis et al., 2013)	30	Total Score (α = .96 - .97; ICC = .98)	4-Point Likert-type scale Higher scores indicate more voice difficulties

Note. ICC = intraclass correlation coefficient.
[a] No Cronbach's α published. [b] Spearman–Brown prediction formula coefficient.

social anxiety, life stress, and perceived burdensomeness. The resiliency scales were positively related with social support and perceived belongingness. Pflum, Testa, Balsam, Goldblum, and Bongar (2015) used the Transgender Community Connectedness subscale from the GMRS and found that greater connectedness was related to lower levels of depression and anxiety for individuals who identify on a transfeminine spectrum (woman, trans woman, etc.), but not for transmasculine spectrum individuals.

Strengths and limitations. The GMRS is a theory-driven measure that draws from other existing measures to assess domains from Meyer's (2003) minority stress model and Hendricks and Testa's (2012) extension to TGNC people. The scale developers incorporated focus group interviews from the community to inform the creation of the GMRS items which were then reviewed by experts in TGNC psychology. As discussed by Testa and colleagues (2015), nearly all of the subscales were correlated in the hypothesized directions across various emotional constructs, which demonstrated good convergent and discriminant validity. The complexity of scoring may make this measure unwieldy in some situations, particularly because of its length (58 items). While important to assess discrimination and victimization throughout treatment, some of these items are insensitive to change which may not capture changes in the frequency of these stressors or improvement in coping. Additionally, the meaning of scores may reflect realistic concerns ("If I express my gender identity, I could be the victim of crime or violence.") that should not be discounted in some life situations. Furthermore, test–retest reliability has not been published at the time of this review. Despite these limitations, the breadth and depth of questions offer promising utility in both clinical and research settings.

How to obtain the GMRS. The full GMRS may be obtained from the original validation article (Testa et al., 2015).

Strength of Transgender Identity Scale (STIS).

Scope. The STIS was developed by Barr, Budge, and Adelson (2016) to assess how strongly an individual identifies as transgender and how important transitioning is to them. Although largely related to identifying transgender people, it contains items that may be relevant to understanding someone's gender identity and how that might change in therapeutic interventions. The STIS has six questions and no factors were identified in the original validation study. Example items include "I identify as trans," "It is important to me that people I am close to know I transitioned," and "The fact that I transitioned is important to who I am."

Validity. In the original validation study (Barr et al., 2016), stronger transgender identity was related to greater community belongingness ($r = .43$) as measured by the Transgender Community Belongingness scale (reviewed below). The STIS was also related to other positive psychological measures including the Scale of Psychological Well-Being (Ryff, 1995), the Rosenberg Self-Esteem Scale (Rosenberg, 1965), and the Satisfaction With Life Scale (Diener, Emmons, Larsen, & Griffin, 1985). However, these relationships were fully mediated by community belongingness, as expected by the authors.

Strengths and limitations. This scale offers a quick six-item measure of how strongly an individual identifies as transgender. This measure focuses primarily on identity as opposed to dysphoria, and was not directly related to TGNC-specific stressors. However, there is a moderate positive relation between strength of identity and how connected individuals feel to the TGNC community. Furthermore, test–retest reliability has not been examined in the STIS.

How to obtain the STIS. The STIS may be accessed from the original article (Barr et al., 2016).

Transgender Adaptation and Integration Measure (TG AIM).

Scope. The TG AIM (Sjoberg, Walch, & Stanny, 2006) measures the stresses associated with being transgender and the individual's efforts to manage that stress. The TG AIM has 15 items, and three factors were identified in the initial validation study that are scored as subscales: Coping and Gender Reorientation Efforts, Psychosocial Impact of Gender Status, and Gender-Related Fears. A fourth factor, Gender Locus of Control, was also identified, but was not recommended for use due to poor internal consistency. Example items of the three recommended factors include "I fear discrimination," "I take/have taken hormones," and "being transgender causes me relationship problems."

Validity. The original validation study provided evidence of construct validity. The Psychosocial Impact of Gender Status and Gender-Related Fears subscales were positively correlated with quality of life and self-esteem ($r = .29$ to $.50$). Reisner and colleagues (2016) used a 10-item version of the TG AIM when assessing a program to reduce sexually transmitted infections in a transgender population. After completing the intervention, average scores increased from 17.9 ($SD = 4.65$) to 20.2 ($SD = 3.41$), which indicated better adjustment, providing evidence that this scale is able to assess change from an intervention. Sanchez and Vilain (2009) examined the Gender-Related Fears and Psychosocial Impact of Gender Status subscales in a sample described as MTF and found that lower scores on both subscales were related to greater depressive symptoms, anxiety symptoms, and somatic symptoms.

Strengths and limitations. One advantage of the TG AIM is that it was developed collaboratively with a transgender community, likely increasing external validity. In contrast to many of the measures reviewed, the TG AIM has been used in several studies and appears to be sensitive to changes due to an intervention suggesting it may be useful in clinical settings or intervention outcome research. On the other hand, the TG AIM appears to have an implicit assumption that all transgender people have the same or similar end-points (medical transition and gender confirmation surgery) which is inconsistent with the diversity of TGNC people. The brevity of the scale (15 items) limits the range of stressors it assesses, but the studies described above indicate the breadth is sufficient to correlate as expected to related constructs of interest. Lastly, studies have not examined test–retest reliability with the TG AIM.

How to obtain the TG AIM. The TG AIM can be obtained from the original validation article (Sjoberg et al., 2006).

Transgender Community Belongingness (TCB).

Scope. The TCB, also developed by Barr and colleagues (2016), assesses how connected an individual is to the transgender community. The TCB helps clinicians and researchers understand the social connectedness and support that the individual has for their transgender identity. No factors across the 9 items were identified in the TCB. Example items include "There are places within the trans community where I can get support," and reverse scored "I feel like I don't have any close trans friends."

Validity. The TCB positively correlated with the Scale of Psychological Well-Being ($r = .29$; Ryff, 1995), the Rosenberg Self-Esteem Scale ($r = .27$; Rosenberg, 1965), and the Satisfaction With Life Scale ($r = .19$; Diener et al., 1985). The TCB was also positively related to the STIS reviewed above ($r = .43$).

Strengths and limitations. This scale offers an efficient nine-item measure on how connected an individual is with the transgender community. This scale is only modestly related to overall well-being so it seems to measure a separate construct. An examination of the items suggests it may be sensitive to change which would be useful if increasing social support were a focal point of intervention. Further study of the psychometrics, including if and how scores change across time would be helpful.

How to obtain the TCB. The TCB may be accessed from the original article (Barr et al., 2016).

Transgender Congruence Scale (TCS).

Scope. The TCS was developed by Kozee et al. (2012) to measure congruence between desired gender and the current expression of gender. The TCS consists of 12 items, and the initial validation study (Kozee et al., 2012) identified two factors: Appearance Congruence and Gender Identity Acceptance. Appearance Congruence measures whether or not the individual's physical appearance matches their desired ideal gender expression. Gender Identity Acceptance measures the individual's pride of their gender expression and identity. Notably, the Acceptance subscale is constructed of only three items. Some examples of items are "I am happy that I have the gender identity that I do," "My physical body represents my gender identity," and reverse scored "I am not proud of my gender identity."

Validity. The initial validity was evaluated by examining the relationship between the TCS and measures of distress and psychological well-being. High total scores on the TCS were associated with more steps toward transitioning, high life satisfaction, low body dissatisfaction, low depressive symptoms, and low anxiety symptoms (Kozee et al., 2012). A similar pattern was detected from both of the subscales. McLemore (2015) used the TCS to examine the effects of misgendering individuals. This study found that higher congruence on the TCS (i.e., higher total score) was related to less frequent misgendering ($r = -.55$), less negative affect on a composite score combining the Positive and Negative Affect Schedule's (Watson, Clark, & Tellegen, 1988) hostility and anger subscales and the State–Trait Anxiety Inventory-6 ($r = -.21$; Marteau & Bekker, 1992), and higher self-esteem of appearance ($r = .56$) and lower self-esteem in social situations

($r = -.32$) as assessed by the Heatherton and Polivy (1991) State Self Esteem Scale. This negative association with social situation self-esteem was surprising. Lastly, the perceived stigma associated with misgendering was unrelated to the TCS.

Strengths and limitations. The TCS is a short measure of only 12 items related to quality of life variables consistent with contemporary understandings of gender dysphoria. The final version of the TCS was reviewed by four people who identified as transgender who agreed it measured the constructs of interest, which supports external validity. The TCS provides a quantitative assessment of the extent to which a person's outward expression matches their internalized identity. Although the test–retest reliability or sensitivity to change have not been assessed, the item content and format suggest the TCS may be sensitive to change from psychotherapeutic interventions. One limitation is an underlying assumption that all TGNC individuals wish to have congruence between their internalized identity and outward expression which is likely based on societal gender norms.

How to obtain the TCS. The TCS may be obtained online at http://transallyship.weebly.com/transgender-congruence-scale.html.

Transgender Positive Identity Measure (T-PIM).

Scope. The Transgender Positive Identity Measure (T-PIM) is a recent measure developed by Riggle and Mohr (2015). The T-PIM was developed from qualitative data from LGBT individuals about the positive aspects of identifying as LGBT (Riggle, Rostosky, McCants, & Pascale-Hague, 2011). In this 24-item measure, five subscales were detected: Authenticity, Intimacy, Community, Social Justice, and Insights. Example items include "I feel a connection to the LGBT community," "I embrace my LGBT identity," and "My LGBT identity helps me develop skills that enhance my life."

Validity. There is limited information on the validity of the T-PIM at this time. Four of the five T-PIM subscales were significantly correlated with an adapted version of the Identity Affirmation subscale from the Lesbian, Gay, and Bisexual Identity Scale (Mohr & Kendra, 2011). The significant relationships with the T-PIM subscales were Identity Affirmation and Authenticity ($r = .65$), Intimacy ($r = .36$), Community ($r = .47$), and Insight ($r = .57$). However the Lesbian, Gay, and Bisexual Identity Scale has limited evidence of validity in the trans community (see Riggle, Mohr, Rostosky, Fingerhut, & Balsam, 2014). A more thorough examination of convergent and discriminant validity would be helpful.

Strengths and limitations. The T-PIM is one of the only published measures to focus on positive aspects of a transgender identity. It also has the advantage of being developed from qualitative data from the transgender community, potentially increasing external validity. This measure provides a breadth of information in a relatively small number of items. More research is needed to better understand the reliability and validity of the scale. One potential limitation is the use of LGBT rather than specifically transgender in the item wording. Riggle and Mohr (2015) stated items referenced *LGBT* because the term is commonly used to indicate both individual and collective identities. Individuals taking the T-PIM should be directed to respond based on the parts of their identities that are encompassed in "LGBT." As with most other measures in this review, the T-PIM does not have published data on test–retest reliability.

How to Obtain the T-PIM. The T-PIM is available online at http://prismresearch.org/?page_id=437.

Transsexual Voice Questionnaire for Male-to-Female Transsexuals (TVQ^{MTF}).

Scope. The TVQ^{MTF} was developed by Dacakis, Davies, Oates, Douglas, and Johnston (2013) to measure various beliefs about voice quality exclusively for MTF people. The TVQ^{MTF} was heavily based on the Transgender Self-Evaluation Questionnaire (Davies & Goldberg, 2006a, 2006b) with modifications based on qualitative analyses. The 30 items in the TVQ^{MTF} were grouped into six qualitative themes (Davies & Johnston, 2015): Effect of voice on social interaction; Effect of voice on emotion; Relationship between voice and gender identity; Effort and concentration needed to produce voice; Physical aspects of voice production; and Pitch. Sample items of the TVQ^{MTF} include "When I laugh I sound like a man," "I feel discriminated against because of my voice," and "The pitch of my voice is unreliable."

Validity. The TVQ^{MTF} has not been compared to other self-report measures, but has been compared to interviews with transgender people (Davies & Johnston, 2015). When asked open-ended questions about concerns about speaking, the TVQ^{MTF} themes encompassed 76% of the thematic content the transgender people reported. Voice change accounted for 10% of the missing content. Casado, O'Connor, Angulo, and Adrián (2016) used the TVQ^{MTF} as an assessment tool following a surgical procedure for voice feminization and voice-therapy treatment with a sample described as 10 MTF transsexual individuals. The TVQ^{MTF} was sensitive to change as scores increased following intervention.

Strengths and limitations. This measure was developed by speech-pathologists but is included here because voice quality has important psychosocial implications (Pasricha, Dacakis, & Oates, 2008) for a subset of individuals who identify as transgender. The TVQ^{MTF} sought feedback from TGNC people and modified the questionnaire based on their feedback, which may increase external validity. Internal reliability and test–retest reliability are strong for this measure, particularly considering few of the measures in this review examined test–retest reliability. Further research is needed on the validity of the TVQ^{MTF} because the qualitative analysis included only five participants. Further research on the relationship between the TVQ^{MTF} and measures of psychosocial functioning would be useful.

How to obtain the TVQ^{MTF}. The TVQ^{MTF} is available online at http://www.shelaghdavies.com/questionnaire/questionnaire.html.

Discussion

Following a focused search strategy, this article reviewed the published literature for measures assessing psychological aspects of the TGNC experience in adults. The eight measures reviewed in this article cover a broad range of constructs that are important in understanding the psychological experience of individuals who identify as TGNC. In addition to gender dysphoria, the constructs include impact of discrimination, minority stress, positive aspects of a TGNC identity, and psychosocial aspects of a medical transition. These important constructs are related to but distinct from gender dysphoria and are understood in the context that not all transgender people have gender dysphoria (Fraser, Karasic, Meyer, & Wylie, 2010). A number of measures were excluded from this review because the sole purpose of these measures was to identify

people as transgender or to assess levels of gender dysphoria that are inconsistent with the *DSM–5* conceptualization. The move away from historic diagnostic measures to tools focused on specific mechanisms that impact psychological functioning such as the impact of discrimination, community connection, coping strategies, and rumination about gender identity is a positive step toward TGNC affirmation in psychological research and practice. This change in focus should also better inform theory, research, practice, and policy by moving beyond a stigmatizing diagnostic label to greater understanding of the complexity and diversity of TGNC individuals.

Many of the measures reviewed in this article adopted similar development and validation strategies, demonstrating a relative strength of these measures. The authors of the TCS, GMRS, T-PIM, and TG AIM created items informed by the literature and clinical experience, incorporated feedback from transgender people, and utilized factor analyses. The TVQ^{MTF} incorporated feedback and expert opinion from the TGNC community. In contrast, the STIS, TCB and GRRS did not seek feedback from the transgender community to develop items. Some of these measures employed a deductive approach, based on an identifiable preexisting theory (i.e., GMRS, GRRS), while others were more phenomenological, using an inductive approach to quantify the experience of TGNC patients (e.g., T-PIM). In general, these measures were created using strong scale development procedures (DeVellis, 2016), given the limitations of the size and accessibility of TGNC participants for studies.

On the other hand, there is much work to be done to further investigate assessment tools for the TGNC communities. A common limitation mentioned in each review is the need for further evaluation of scale psychometric properties. Most measures have not been used in published studies beyond the original validation study. This work may be forthcoming as some of the scales are recent, and further research has not yet been completed. It will be important for future research to recruit samples that represent a range of TGNC experiences and identities to reflect the intersectionality of TGNC people (e.g., TGNC people of color, TGNC individuals with an autism spectrum diagnosis). Ultimately, research and practice guidelines focused on multicultural competence must intersect with trans-affirming guidelines to inform future research on assessment tools (APA, 2003, 2015).

Identification and use of nonstigmatizing language will be an ongoing challenge with all assessment tools for TGNC-affirmative research and practice. Stigma has been a well-documented barrier to mental health treatment across a variety of settings and populations (Corrigan, 2004; Gary, 2005; Kim, Thomas, Wilk, Castro, & Hoge, 2010) and is a significant contributor to minority stress (Hendricks & Testa, 2012). The language utilized by health care professionals is impactful, and stigmatizing language from this perceived-as-safe source can have lasting negative effects and may even be traumatic (Broyles et al., 2014; Gray et al., 2011). Some older measures not included in this review are now stigmatizing to some TGNC identities by containing language that is inconsistent with contemporary understanding of gender or by assuming all transgender individuals undergo medical transition. It is important to note that the language and conceptualizations in these older measures may have been appropriate when initially published, demonstrating the challenges of scale development as the rapid changes in perceptions of gender and the power of stigmatizing language continue. Possible solutions for meeting this challenge include the recruitment of more researchers and clinicians who are part of the TGNC communities, the facilitation of partnerships with the TGNC communities in the development of measures, and the inclusion of language experts such as rhetoricians on research teams.

Recommendations

The various measures presented above cover a broad range of constructs, precluding general recommendations for clinical use. However, the growing diversity of measures means that clinicians or researchers are increasingly empowered to find and utilize a scale for specific constructs they wish to assess. Thus, we offer the following recommendations for which measures to use in research and clinical settings.

When a broad clinical or research measure of the psychological aspects of being TGNC is needed, especially one that considers the impact of minority stress, we recommend using the GMRS. Developed from minority stress theory, the GMRS has the advantage of measuring both vulnerability and resiliency. The factors of the GMRS have demonstrated good construct validity, considering the limited research on all reviewed measures. Although the length of the GMRS can be a limitation, individual subscales have been used to target specific aspects of minority stress in research settings (e.g., Pflum et al., 2015).

Several measures could be used to assess an individual's response to an intervention in clinical practice or treatment research including the TCS, GMRS, GRRS, T-PIM, and TG AIM. However, with the exception of the TG AIM and the TVQ^{MTF}, there is little evidence of the stability of the measure to change across time or sensitivity to treatment effects. It seems likely that these measures could function as treatment outcome measures, but sufficient research has yet to be conducted to demonstrate their utility for these purposes. In addition to pre–post outcome assessment, measuring outcomes in evidence-based clinical practice should include progress monitoring throughout the intervention (APA Presidential Task Force on Evidence-Based Practice, 2006; Persons, 2008). Progress monitoring requires a brief but comprehensive measure that can be completed frequently, often at each treatment session, to provide ongoing feedback to the client and therapist about the direction and utility of treatment. None of the reviewed measures precisely fits this need. The TCS may be useful for this purpose if the focus of the intervention is on moving toward a match between desired and current gender identity expression, but it would not capture any impact of discrimination or stigma or successful coping. If reducing maladaptive thoughts and increasing curious thoughts related to gender are the primary foci of therapy, then the GRRS may be a suitable measure to monitor progress. Again, the scope is limited, but these two measures provide early options for monitoring treatment progress.

Limitations

There are three important limitations in the present review article. First, the selection of measures to include in the article was narrow. Reviews of childhood measures of gender dysphoria exist (Zucker, 2005; Zucker & Wood, 2011), and many measures based on outdated conceptualizations that focused

primarily on distinguishing TGNC people from other genders or by sexual orientation were excluded. The distinction between what to include or exclude was governed by the authors' priorities to find measures that potentially could be used in evaluating interventions in clinical and research settings, so we decided to err on the side of overinclusion within the domain of nondiagnostic measures for adults. Second, evaluation of measure quality was quite limited because the supporting research was also quite limited. The majority of these measures was published in the last decade and had no studies beyond the initial validation study. A third limitation is the difficulty, and practical inability, to distinguish each construct's measurement from potential comorbid mental health issues. Given that minority stress is a risk factor for the developmental of mental disorders, TGNC individuals are at greater risk for a broad range of mental health problems (Bockting et al., 2013; Clements-Nolle et al., 2001). Measuring gender dysphoria and related psychological constructs may be difficult for individuals suffering from a mental disorder (beyond a potential gender-related condition that may have been diagnosed) because of measurement confounds. For example, a TGNC individual suffering from social anxiety may not be connected to the transgender community, leading to a low score on measures like the TCB. However, the score in this example is also influenced by the avoidance of public situations that is common in social anxiety, not a lack of desire or devaluing of a community connection.

Conclusion and Future Directions

The conceptualization and assessment of the psychological experience of identifying as TGNC has advanced considerably over the last 40 years. The collection of measures attempting to identify TGNC as a diagnostic group have been replaced with less stigmatizing measures of gender dysphoria, minority stress and coping, positive aspects of TGNC identities, and treatment-specific mechanisms such as rumination. Many measures now target malleable constructs that are important for improving the quality of life of TGNC individuals, despite the diversity of paths people take in their gender identity journeys. This progress in nuanced measurement will undoubtedly increase the sophistication of research and psychological services, yet the field needs to bolster this trend toward progress with more rigorous peer-reviewed research. There are a number of areas that need to be addressed specifically. First, we urge researchers to give higher priority to psychometric investigation of the best existing measures, including examination of pre- and posttreatment change to inform clinical research and practice. Second, a brief but broad repeatable measure for progress monitoring is needed. Such a measure should cover key aspects of gender congruence, experiences and coping around stigma and discrimination, community connection and social support, and general well-being. Progress in these two areas alone will foster substantive improvements in treatment and research with TGNC individuals. The psychologist Robert Hare aptly stated, "Science cannot progress without reliable and accurate measurement of what it is you are trying to study" (Spiegel & Hare, 2011). This is also true of clinical science and evidence-based psychological services for the TGNC communities.

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