

Development of an Instrument to Assess Athletic Trainers' Attitudes Toward Transgender Patients

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Context: The unique contexts in which athletic trainers (ATs) work require specific tools in order to understand their attitudes toward diverse patient populations, including sexual and gender minorities.

Objective: To develop and validate the Attitudes Toward Transgender Patients (ATTP) instrument for ATs.

Design: Cross-sectional study.

Setting: Semistructured interviews, paper-based questionnaire, and electronic questionnaire.

Patients or Other Participants: Six ATs completed semi-structured interviews to develop themes regarding transgender patients. Additionally, 39 students in professional and post-professional athletic training programs answered questionnaires designed to elicit statements regarding transgender patients. For item reduction, a sample of 3000 ATs were e-mailed (response rate = 17%), and for validation, another sample of 3000 ATs were e-mailed (response rate = 13%). Athletic trainers' e-mail addresses were obtained from the National Athletic Trainers' Association.

Data Collection and Analysis: The 3 phases were (1) exploratory interviews, (2) construct validity and item reduction, and (3) criterion validity. Items were created based on interviews and questionnaires. Principal axis factoring was used for item reduction, and Pearson correlations were used for validation.

Results: Thirty-six statements pertaining to transgender patients were developed from the interview and questionnaire data. After item reduction, 10 items remained to form the ATTP ($\alpha = .834$). For validation, the ATTP and Transphobia Scale were significantly correlated ($r = .723$; $P < .001$).

Conclusions: The ability to assess attitudes toward transgender patients will allow clinicians to identify needed areas of focus for training and education. The ATTP assesses affective and cognitive attitudes and behavioral intentions toward transgender patients in common clinical settings.

Key Words: gender identity, gender minority, education, comfort, diversity

Key Points

- The Attitudes Toward Transgender Patients instrument is a simple and reliable tool to identify athletic trainers' attitudes toward transgender patients.
- Once athletic trainers' attitudes are determined, subscale-specific data can be used to create focused continuing education on this topic.

In recent decades, measures have been developed to assess individuals' attitudes toward lesbian, gay, and bisexual (LGB) people^{1–5} and, more recently, transgender (T) people.^{6,7} Current instruments that assess attitudes toward LGBT individuals tend to be global and assume congruence of attitudes across contextual settings. Although these instruments are beneficial for understanding attitudes in the general population, they are not necessarily applicable to or congruent with specific cultural contexts, including health care settings.⁸

Sexual orientation and gender identity are important components of the overall framework of cultural competency. Athletic trainers (ATs) need a more refined understanding of how attitudes, norms, and practices related to sexual orientation and gender identity may affect patients in the clinical setting, particularly in relation to established constructs of transphobia, homophobia, cisnormativity, cissexism, heteronormativity, and homonegativity.^{9–11} Transgender individuals may be only a

gender minority or both gender and sexual minorities. For this reason, it is important to include homophobia, heteronormativity, and homonegativity in the discussion of transphobia, cisnormativity, and cissexism.

Homophobia is an irrational, unlearned fear and hatred of lesbians and gay men,² whereas *heteronormativity* has been explored as a cultural understanding in which heterosexuality is considered the norm without acknowledgment, publicly or socially, of diverse sexual identities or behaviors.¹² *Transgender* refers to an individual whose gender identity and expression do not align with birth sex and thus is considered a gender minority.¹³ *Transphobia* is the prejudice and hostility toward the existence of transsexuality or gender nonconformity.¹³ Individuals who are gender nonconforming have significantly greater exposure to transphobia.¹³ *Cisnormativity* describes the assumption that all people are cissexual (an individual's gender when he or she grows up will match the sex at birth) and does not allow for the possibility of transgender

existence or visibility.¹⁰ *Cissexism* is the set of beliefs and actions that give privilege and validation to those with cis identities (gender identities that match their birth sex).¹¹ Cisnormativity and cissexism create intolerant climates for transgender patients and can result in their not disclosing their identities or accessing health care.

Researchers and clinicians^{14,15} have also highlighted the significance of cultural competency in the discipline of athletic training. Maurer-Starks et al⁹ examined how heteronormativity and homonegativity may influence the quality of health care provided to patients, how this may subsequently affect patient health, and how proper treatment and care of sexual- and gender-minority patients are interrelated with core principles in the athletic training profession. For the clinical care of transgender patients, Bauer and Hammond¹¹ provided suggestions (ie, avoid assumptions that patients or their partners are cis and recognize that not all medical concerns relate to the patient's gender identity or hormone treatment) to limit cisnormativity and cissexism in the clinical setting in order to support transgender health. These efforts create a safe environment for all patients.

Without targeted efforts aimed at creating safe patient environments in the athletic training setting, transgender patients may be vulnerable to stigma, discrimination, and adverse health outcomes; less likely to disclose their sexual orientation and gender identity to their health care provider; or avoid accessing health care.^{16–18} Disclosure and access to care are important for sexual- and gender-minority individuals because they face significant disparities in rates of sexual health, mental health, substance use, and other concerns.^{17–19} For example, many transgender youths find that, if a physician accepts their gender identity, their gender identity receives the largest focus even when it does not have any direct relationship with the reason for seeking health care.^{13,18}

Transgender health concerns vary and include general medical and psychological services, care for hormone treatments and sex-reassignment surgery, and treatment for mental health and substance abuse problems unique to the transgender individual.^{10,18} Quality access to health care for transgender patients is important; however, the experiences of transgender patients may result in their avoiding needed health care. For example, transgender patients have encountered providers who will not treat them, lack training on transgender topics, and lack knowledge of treatment for routine health care needs; discrimination in health insurance is another factor.^{13,18} Transgender patients who have undergone surgical procedures to transition experienced more discrimination than those who are on hormone therapy or are receiving no medical treatment.¹³ Transgender patients have also reported their best experiences in health care when their encounters included acceptance and support.²⁰ These experiences resulted in the transgender patient feeling like a “normal person” when seeking health care.²⁰ For this reason, understanding clinicians' attitudes is critical for continuing the dialogue on health care for transgender patients and their providers.^{18–20}

An estimated 0.6% of the adult population in the United States identifies as transgender.²¹ An estimated 0.7% of adults (age = 18 to 24 years) and an estimated 0.7% of youths (age = 13 to 17 years) identify as transgender.²¹ The youth and young adult age groups are common age groups

treated by ATs. More transgender individuals are “coming out” in settings where ATs work.²² The athletic training setting calls for an instrument that captures their attitudes toward gender-minority patients and how these may influence their professional practice.²³ Researchers²⁴ have examined attitudes toward sexual-minority individuals among a wide range of clinical professionals, including previous explorations among ATs, using established instruments. However, few have specifically assessed the types of interactions that clinicians may have with these patients, and none have examined specific attitudes toward transgender patients, who face unique concerns within all health care settings. Data on health care providers' attitudes toward LGBT patients may also inform the development of interventions aimed at facilitating cultural competency and multiculturalism, important constructs for health professions settings in which clinicians treat a diverse range of patients.^{14,15,25,26}

We aimed to develop a brief psychometric instrument to assess ATs' attitudes toward gender-minority patients. In professions such as athletic training, clinicians often deal with gendered sports teams. Gender identity can create unique situations relative to sexual orientation. As such, we developed the Attitudes Toward Transgender Patients (ATTP) instrument.

METHODS

Overall, we sought to develop a scale using the theoretical framework proposed by Zanna and Rempel.²⁷ According to them,²⁷ heterosexist attitudes are composed of 3 prongs: affective, cognitive, and behavioral. The *affective* domain refers to the emotions or feelings an individual has. The *cognitive* domain refers to the thoughts an individual has toward another person and is based on beliefs. The *behavioral* domain is based on past behaviors or intended behaviors toward someone. These thoughts, emotions, and previous or intended behaviors affect an individual's attitude toward others.^{27,28} Haddock et al²⁸ found that the affective, cognitive, and behavioral aspects of attitudes were relevant to the understanding of attitudes toward LGBT individuals. Because attitudes toward transgender individuals combine cisnormativity, cissexism, heterosexism, and homonegativity, items used for the development of our instrument portray all of these aspects.^{15,27} Following this framework, we developed our instrument in 3 distinct phases that are standard to the scale-development process. The institutional review board of the study team's primary institution reviewed and approved the methods, instruments, and protocols of the study.

Phase 1—Item Elicitation

Item elicitation was performed through a 2-fold process. First, we interviewed 6 ATs working in various settings (men = 2, women = 4; age = 39 ± 6.05 years). The interviews were semistructured and focused on the ATs' perceptions of LGBT patients. The theoretical framework proposed by Zanna and Rempel²⁷ guided the interview (the questions are shown in Table 1). We evaluated the interview questions to make sure they would elicit answers that would guide the development of subsequent items.

Table 1. Semistructured Interview Questions^a

1. What are your perceptions of lesbian, gay men, bisexual, and transgender patients/athletes?
2. Do you think lesbian, gay men, bisexual, and transgender athletes should be allowed to play on same-sex teams?
3. Do you think transgender athletes should be allowed to participate in athletics?
4. Are you aware of policies in place for transgender athletes in the NCAA?
5. Would you feel comfortable touching a patient you knew to identify as lesbian, gay man, bisexual, or transgender?
6. Do you believe that all gay men have HIV/AIDS?
7. Do you think patients/athletes should keep their sexuality to themselves?
8. Do you think lesbian, gay men, bisexual, and transgender athletes have a duty to inform their health care provider about their sexual orientation?
9. How would you describe the culture around lesbian, gay men, bisexual, and transgender athletes in athletics?
10. Do you feel comfortable discussing sensitive issues, such as STDs, with a patient/athlete who identifies as lesbian, gay man, bisexual, or transgender?

Abbreviations: AIDS, acquired immunodeficiency syndrome; HIV, human immunodeficiency virus; NCAA, National Collegiate Athletic Association; STDs, sexually transmitted diseases.

^a Questions are presented in their original form.

Interviews were conducted until we agreed that responses from participants no longer yielded new information.

After the interviews, an item-elicitation questionnaire was administered to 2 small classes of professional and postprofessional athletic training students at a large midwestern public university and a small midwestern private liberal arts college ($n = 39$; men = 19 and women = 20; age = 22 ± 1.67 years). We selected these classes because they were composed of either newly certified ATs or students who were soon to be clinicians. We thought they might provide different perspectives than the ATs who participated during the initial interview phase and who had been working clinically for many years. The questionnaire was used to elicit words and statements to add to the words and statements developed from the interviews previously conducted. Example items from the questionnaire were “What are the first 3 words that come to mind when you hear the words ‘transgender athlete?’”, “As an athletic trainer, if I learned that my patient was transgender, my first reaction would be. . .”, and, “How comfortable do you feel, in general, discussing issues related to sexual orientation and/or gender identity?”

Data Analysis. Responses to the initial interviews and item elicitation questionnaire directly informed the construction of the transgender statements. Participants provided a variety of responses to the open-ended questions. The resulting data from interviews and open-ended responses were triangulated, organized, and analyzed thematically using standard qualitative techniques so that we could construct the scale items to be used in a subsequent larger survey. Triangulation occurred through a peer-review process. The principles of grounded theory were used to inductively identify and interpret the concepts and themes that emerged from the interviews and open-ended data.²⁹

Results. A total of 36 statements pertaining to transgender patients were created based on data from the

interviews and questionnaires. Overarching themes that evolved from the interviews and questionnaires were patients’ gender identities, interaction with transgender patients in various settings, perceptions on sport participation, and knowledge of transgender issues.

Phase 2—Construct Validity and Item Reduction

The research team reviewed the 36 items and scored them on a Likert scale of 1 to 5 (1 = *strongly disagree* to 5 = *strongly agree*). The statements were integrated into a brief survey, which was sent electronically (Qualtrics, Provo, UT) to a sample of 3000 ATs, generated from a sample of 30 000 ATs’ e-mail addresses obtained from the National Athletic Trainers’ Association. Recruits were provided with a study information sheet and gave consent to participate when they clicked the start button. Participants responded to a brief demographics section and the transgender statements, which took approximately 10 to 15 minutes to complete. To increase participation rates, 2 reminder e-mails were sent at 2-week intervals.

Statistical Analysis. Data were analyzed using SPSS (version 21.0; IBM Corp, Armonk, NY). A principal axis factoring with direct oblimin rotation was used. Items that were reverse scaled were recoded so that higher scores represented more negative attitudes. To complete an initial item reduction, items that had a variance greater than 1 or a mean between 2 and 4 were included for the factor analysis. These criteria were chosen because a low variance and a mean at the extremes may fail to detect differences between participants on an instrument.³⁰

To determine the extent to which each item contributed to the overall variance, eigenvalues greater than 1 and coefficients greater than 0.30 were reviewed for each scale. Finally, items that met the mean and variance values were added and removed until the result was an instrument that had at least 3 items in each factor and around 10 total items. The goal was to reduce the instrument length to decrease the burden on the respondents.³⁰ Although shorter-length scales may decrease an instrument’s reliability, we felt this was a beneficial tradeoff.³⁰ The statistical analysis resulted in subscales for the ATTP instrument. The Cronbach α was calculated to determine internal consistency. We reviewed the results of the item reduction and reflected on the scales to ensure that the statements supported the purpose of this study.

Results. A total of 507 ATs responded to the electronic survey (17% response rate). The resulting instrument had 10 items, 6 of which were reverse scored, and a total of 3 factors. These factors were clinician education, transgender sport participation, and clinician comfort.

After item reduction, the scale was slightly modified. The original scale included “I feel safer treating a transgender patient in a group setting” and “I would be more comfortable working with a transgender patient in a group setting compared to one-on-one.” We determined that these statements were too similar. Therefore, the latter statement was replaced with “I would be comfortable treating a patient whose gender identity is unclear.” This resulted in 10 statements, 7 of which were reverse scored (Table 2). This change did not affect the factors. The interfactor correlation between the clinician education subscale and the transgender sport participation subscale was $r = -0.397$.

Table 2. Attitudes Toward Transgender Patients

Subscale and Items ^a	Variance Explained, %	Factor Loading
Clinician education	41.84	
1. I would be interested in learning how to talk about sensitive issues with the transgender population. ^b		0.995
2. I believe it is important to receive training on transgender issues. ^b		0.775
3. I would be comfortable learning more about the transgender population. ^b		0.774
Transgender sport participation	15.58	
4. I think male-to-female transgender individuals should not be allowed to participate on female teams.		-0.940
5. I think female-to-male transgender individuals should not be allowed to participate on male teams.		-0.872
6. I think transgender individuals should be allowed to participate in athletics for the gender which they identify with. ^b		-0.531
Clinician comfort	12.06	
7. I feel safer treating a transgender patient in a group setting.		0.831
8. I would be comfortable treating a patient whose gender identity is unclear. ^b		0.787
9. I would be comfortable treating a transgender athlete/patient in a private treatment room. ^b		0.457
10. I would be comfortable treating someone I know to be on hormone therapy. ^b		0.407

^a Items are presented in their original form.

^b Indicates reverse scored.

The interfactor correlation between the clinician education subscale and the clinician comfort subscale was $r = 0.448$. The interfactor correlation between the transgender sport participation subscale and the clinician comfort subscale was $r = -0.320$. The Cronbach α for each factor was 0.901 for clinician education, 0.833 for transgender sport participation, and 0.675 for clinician comfort.

Phase 3—Criterion Validity

To assess validity, we compared the ATTP instrument with the Transphobia Scale,⁷ which contains 9 statements scored on a Likert scale. A higher score indicates more negative attitudes toward transgender individuals.⁷ The Transphobia Scale was selected because its Cronbach α reliability coefficient is 0.82, suggesting high internal consistency, and test-retest stability correlation is 0.88.⁷ The Transphobia Scale has also been validated against several similar or dissimilar instruments to determine convergent, discriminant, and construct validity.⁷

A second electronic survey (Qualtrics) was sent out to a convenience sample of 3000 ATs (ie, a different sample than that tested during scale development), generated from the sampling frame of 30 000 ATs' e-mail addresses obtained from the National Athletic Trainers' Association. The survey included a brief demographics section, the ATTP instrument (10 items), and the Transphobia Scale (9 items), which took participants approximately 10 minutes to complete. Two reminder e-mails were sent at 2-week intervals to increase participation rates.

Statistical Analysis. Mean and standard deviations (SDs) were calculated for each instrument. A higher score on each instrument indicates more negative attitudes. The possible range of scores on the ATTP scale was 10 to 50. The clinician education and transgender sport participation subscales had a possible range of 3 to 15 each, and the clinician comfort subscale had a possible range of 4 to 20. The possible range of scores on the Transphobia Scale was 9 to 63.⁷ A Pearson correlation with an α level of .05 was conducted between the ATTP and the Transphobia Scale.

Results. A total of 393 participants (13% response rate) completed the ATTP instrument and the Transphobia Scale. The participants' demographics are shown in Table 3. The average score on the clinician education subscale was 6.96

(SD = 2.8, minimum score = 3, maximum score = 15). The average score on the transgender sport participation subscale was 8.2 (SD = 3, minimum score = 3, maximum score = 15). The average score on the clinician comfort subscale was 7.8 (SD = 3.17, minimum score = 4, maximum score = 19). The average score on the Transphobia Scale was 31.4 (SD = 7.8, minimum score = 18, maximum score = 63). A significant correlation was present between the ATTP instrument and the Transphobia Scale ($r = .723$; $P < .001$) and between the ATTP subscales and the Transphobia Scale (clinician education, $r = .534$; $P < .001$; transgender sport participation, $r = .525$; $P < .001$; clinician comfort, $r = .568$; $P < .001$).

We calculated the Cronbach α values on the new sample of ATs to compare them with the original values calculated during the item-reduction phase. Cronbach α for the clinician education subscale decreased slightly from 0.901 to 0.894 and for the transgender sport participation subscale decreased slightly from 0.833 to 0.797. However, the value for the clinician comfort subscale increased from 0.675 to 0.881.

DISCUSSION

The primary goal of this study was to develop a brief psychometric measure to assess ATs' attitudes toward gender-minority patients. The ATTP instrument was developed through a multiphase process and is unique compared with previous instruments in that our goal was to explore ATs' attitudes toward gender-minority patients.^{6,7} As such, the ATTP scale is the only instrument we are aware of that was designed to explicitly assess clinicians' attitudes toward transgender patients on 3 different subscales. The instrument items were derived directly from interviews and questionnaires of current ATs and athletic training students and reflected the affective, cognitive, and behavioral attitudes of the ATs and students.

The final instrument fits well into the tripartite model presented by Zanna and Remple.²⁷ The 3 subscales represent an AT's affective domain as applied in the transgender sport participation and clinician comfort subscales. The cognitive domain is applied throughout the instrument in all 3 subscales. The behavioral domain is applied in the clinician education and the clinician comfort

Table 3. Demographics of Phase 3 (Criterion Validity) Participants

Variable	Attitudes Toward Transgender Patients
No. of participants	393
Age, y (mean ± SD)	34.25 ± 10.19
Sex, n (%)	
Male	148 (37.7)
Female	245 (62.3)
Sexual orientation, n (%) ^a	
Heterosexual/straight	347 (88.3)
Gay/lesbian/homosexual	33 (8.4)
Bisexual	12 (3.1)
Uncertain	1 (0.3)
Race, n (%) ^a	
American Indian/Alaskan Native	6 (1.3)
Asian or Asian-American	10 (2.5)
Black or African-American	12 (3.1)
Hispanic or Latino	13 (3.3)
Native Hawaiian or Pacific Islander	2 (0.5)
White	346 (88.0)
Other	4 (1.0)
Athletic training setting, n (%) ^a	
Amateur/recreational/youth	6 (1.5)
Clinic	46 (11.7)
College/university	142 (36.1)
Corporate	2 (0.5)
Health/fitness club	2 (0.5)
Hospital	8 (2.0)
Independent contractor	4 (1.0)
Industrial/occupational	6 (1.5)
Military/government/law enforcement	3 (0.8)
Other	17 (4.3)
Professional sports	6 (1.5)
Retired	3 (0.8)
Secondary school	132 (33.6)
Student	10 (2.5)
Unemployed	6 (1.5)

^a Percentages were rounded.

subscales. It should be noted that, although these items relate to the behavioral domain, participants report on their intended behavior versus their actual performed behavior.

Items on the transgender sport participation subscale loaded in a negative direction, and the interfactor correlations for both the transgender sport participation and the clinician comfort subscales were also negative. Higher scores on the subscales represent more negative attitudes; the transgender sport participation subscale had the highest average score at 8.2 ± 3 . This may be because of the bipolar nature of the 2 subscales. Some clinicians who are comfortable with transgender patients may not agree with transgender sport participation.

Several subscales were identified during the development of this instrument. The consistency of the subscales was assessed using the criteria of George and Mallery.³¹ The clinician education subscale consistency initially was excellent ($\alpha = .901$), but in the second sample during the validation phase, it decreased to good ($\alpha = .894$). The consistency of the transgender sport participation subscale was initially good ($\alpha = .833$), but in the second sample during the validation phase, it decreased to acceptable ($\alpha = .797$). However, the clinician comfort subscale consistency was initially questionable ($\alpha = .675$), but in the second

sample during the validation phase, it increased to good ($\alpha = .881$). The variable consistencies for the clinician comfort subscale may be due to the small number of items and its measurement of affect. This suggests that the consistencies of the scales might vary or be somewhat sample dependent.

The process of developing this instrument highlighted the importance of transgender patients' comfort in disclosing their gender identities to health care providers and the need to continue to highlight gender identity as a core construct in cultural competency training efforts.¹⁷ Although we developed the ATTP scale to understand topics that are specific to ATs, the instrument has applicability beyond the athletic training profession. Other health professions and organizations may also use this instrument to assess the attitudes of their clinicians toward transgender patients. With the information provided by the instrument, curriculum and continuing education opportunities can be developed for clinicians.

The ATTP subscales can be used to identify areas in which curriculum and continuing education may be beneficial. For example, if the ATTP instrument is given to clinicians working at a specific health care organization and identifies them as interested in learning more about transgender concerns (ie, a low score on the clinician education subscale shows interest in learning about transgender topics and is considered a positive attitude), the organization can provide access to further education and training opportunities.

LIMITATIONS AND FUTURE RESEARCH

Although support for the reliability and validity of the ATTP instrument was present in these results, some limitations to the development and use of the instrument must be noted. We attempted to engage a wide and representative range of ATs and athletic training students in the primary surveys. However, the original list of items was based on interviews with a small subset of ATs and athletic training students. Because the interviews and surveys were completed by participants in convenience samples, the results may not be generalizable to the broader population of ATs. Yet we attempted to mitigate this possibility by engaging ATs who were recruited from a database including all certified ATs in the United States. Additionally, the instrument was developed solely from the experiences and responses of ATs. Clinicians from other health care professions may have different affective, cognitive, and behavioral expressions toward transgender patients.

This research will benefit from several follow-up studies. The ATTP scale should be evaluated among a larger group of ATs for reliability and validity and for reliability among ATs in various settings. The ATTP instrument may be beneficial to other health care professions. Studies should be performed to determine the applicability in other health care professions, such as physical therapy, occupational therapy, and strength and conditioning.

CONCLUSIONS

The ATTP instrument assesses the affective, cognitive, and behavioral expressions of attitudes toward transgender patients in settings common to clinicians. Assessing attitudes toward transgender patients allows clinicians to

identify areas in which training and education can be focused. The subscales may be useful in helping to guide these efforts. Because patient comfort is an important component of the patient experience, individuals involved in the athletic training profession should continue to ensure that gender identity remains a core component of education and training activities aimed at fostering cultural competence and quality care for all patients.

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