

Closing the gap: Raising medical professionals' transgender awareness and medical proficiency through pharmacist-led education

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How to cite: Congdon AP III, Tiene K, Price C, Dufresne RL. Closing the gap: Raising medical professionals' transgender awareness and medical proficiency through pharmacist-led education. *Ment Health Clin* [Internet]. 2021;11(1):1-5. DOI: 10.9740/mhc.2021.01.001.

Abstract

Introduction: Patients who are transgender have unique population-specific needs and risk factors. Nationwide surveys of health profession school administrators indicate a gap in coverage of lesbian, gay, bisexual, and transgender health content in their curricula. To address this gap, a pharmacist-developed transgender-health care focused seminar was presented to medical professionals, trainees, and students accompanied by a novel education assessment scale.

Methods: The seminar was presented by a psychiatric pharmacy resident to health care professionals and trainees in various settings. Subjects covered during the seminar included terminology, diagnostic criteria and prevalence of gender dysphoria, nonhormonal treatment, gender-affirming hormone therapy, and other considerations. The Trans* Health Education Evaluation Scale (THEES) was developed to assess participants' self-perceived proficiency regarding care of patients who are transgender immediately before and after attending a seminar. Total scale scores were compared preseminar and postseminar using a repeated-measures *t*-test, and sign tests with Bonferroni correction were used for individual scale items. Psychometric properties of this scale were examined.

Results: Five seminars were given, and a total of 100 scales were completed by health care-associated workers and students. The majority of participants were in the pharmacy or medical professions. Attending 1 seminar significantly improved THEES total and individual item scores ($P < .001$). Additionally, 90% of participants felt the seminar was directly applicable to their practice, and 84% felt more confident in providing care to patients who are transgender.

Discussion: A single, pharmacist-led, trans health-focused education session significantly improved the confidence level and self-perceived proficiency of health care-associated personnel as measured by THEES.

Keywords: gender, transgender, education, LGBT, gender-affirming hormone therapy

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Disclosures: The authors have no information to disclose regarding financial considerations or otherwise, nor are there any other conflicts of interest. The abstract and results of this research were presented in

poster format at the College of Psychiatric and Neurologic Pharmacists Annual Meeting in Salt Lake City, Utah, in April 2019.

Introduction

According to the national US Transgender Survey completed in 2015, a third of the 27 715 respondents reported a negative encounter with a health care provider, including verbal harassment or refusal of treatment based on their gender identity, and nearly a quarter of

respondents avoided accessing health care for fear of mistreatment.¹ Literature^{2,3} consistently indicates that a significant barrier to care for gender-diverse individuals is a lack of access to health care providers who are knowledgeable in gender-diverse care. Although certainly a multifaceted issue, suboptimal medical care on a national scale is likely a significant contributor to the transgender population having a higher burden of health inequalities, including significantly higher HIV infection rates particularly in transgender women, greater incidence of mental illness, and a rate of suicide attempts that is nearly 9 times higher compared to the general US population.^{1,2,4}

Deficits in coverage of transgender content in health profession education systems has received increasing amounts of attention in recent years with multiple studies examining gender-diverse content in medical and pharmacy schools as well as interventions to improve trainees' competency and awareness.⁵⁻¹⁰ In a 2011-2012 survey of pharmacy schools in which 28 out of 125 responded, more than half of respondents reported no coverage of LGBT content in their curricula.⁷ More recently, a survey of pharmacy schools was completed specifically addressing transgender-related care in their curricula. Sixty-six schools responded, and 41.2% of schools indicated that transgender-related education is in their required curricula.⁸ Incorporation of LGBT content into a first-year pharmacy student course improved student self-awareness and student capability in showing respect to transgender people.⁷ Similarly, a 2009-2010 report of medical schools indicated that coverage of LGBT content was *fair* at 44% of responding medical schools, *very poor* or *poor* at 26% of schools, and *very good* or *good* at 24% of schools.⁹ Following the publication of those survey results, the Association of American Medical Colleges published guidance for including education regarding gender-diverse and LGBT individuals. As a result, many medical schools provide a median exposure of 5 hours of LGBT-related content in their curricula.⁷ However, transgender health should be recognized as a separate clinical skill set with appropriate emphasis thereof.⁶

Recent efforts have begun to improve professional education standards with regard to transgender health, but many current clinicians and health care workers were likely trained prior to ongoing improvements, and current trainees may not yet benefit from improved curricula. To address this gap in education, a pharmacist-developed, transgender care-focused seminar was presented to various health care-associated workers and students with an accompanying assessment scale to provide data on participants' self-perceived proficiency before and after education.

Methods

A novel, evidence-based, guideline-driven presentation was developed centering around overall medical care for patients who are transgender. Sources for the presentation included, but were not limited to, World Professional Association for Transgender Health Standards of Care (2011), Endocrine Society Guidelines (2017), Center of Excellence for Transgender Health Guidelines (2016), and other reviews and primary literature.¹¹⁻¹³ Content was largely consistent with recommendations made by Dubin et al.⁶ The presentation included discussion of terminology, diagnosis and prevalence of gender dysphoria per the DSM-5, nonhormonal treatment (eg, surgery, mental health treatment for common comorbidities), gender-affirming pharmacotherapy, and other primary care-related considerations (eg, organ-specific cancer screenings, HIV pre-exposure prophylaxis, renal dosing of medications, cardiovascular disease risk, bone health, family planning). The presentation was created using Microsoft PowerPoint and was intended to be delivered as a live, interactive session given over a 45-minute duration with additional time for questions and answers (Q&A) to audiences consisting of various health care-associated workers and students. Participation in sessions was voluntary, and opportunities to provide the seminar were sought in accordance with the pharmacy resident's availability.

Alongside the presentation, the Trans* Health Education Evaluation Scale (THEES) was developed to assess the effectiveness of an education session with respect to participants' self-perceived proficiency and confidence in providing care to gender-diverse patients. Items in the scale were chosen to assess effectiveness of the main topics in the developed education session. It was not pretested prior to use alongside the seminars. The scale was administered via paper hardcopy, printed front and back with prescales and postscales, immediately before and again after an education session. To maintain anonymity, participants were instructed not write any identifying information on the scale aside from occupation/position. The scale is composed of 8 items pertaining to each main topic and is pictured in Table 1.

Two additional questions were added to the posteducation survey to assess participant confidence level and direct clinical applicability:

1. This discussion has increased my confidence level for providing care to transgender individuals.
2. I learned something from this discussion that I can directly apply to my clinical setting.

Each item on the pre-education and posteducation THEES is marked with one of the following responses: *strongly agree*, *agree*, *neither agree nor disagree*, *disagree*, or

TABLE 1: Trans* Health Education Evaluation Scale

Statement	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree
Q1. I am able to utilize proper and sensitive terminology when referring directly to and about medical care of transgender individuals.					
Q2. I am comfortable distinguishing between the terms <i>gender identity</i> , <i>gender expression</i> , <i>biological sex</i> , and <i>sexual attraction</i> .					
Q3. The goals of hormonal and non-hormonal therapies for gender dysphoria are clear to me.					
Q4. I am familiar with the medication regimen of cross-sex hormone therapy for transgender individuals.					
Q5. I feel adequately trained to provide medical care to transgender individuals.					
Q6. I am familiar with population-specific medical considerations for transgender individuals.					
Q7. I am aware of population-specific risks regarding medical care of transgender individuals.					
Q8. I am aware of the resources and literature that are available for information on providing medical care to transgender individuals.					

strongly disagree. For the purposes of statistical evaluation, responses were assigned a number 1 through 5 (a Likert scale) with greater numbers indicating a greater level of understanding.

The primary endpoints of this study were (1) the difference in each item before and after education for all participants and (2) the difference in the sum of all items before and after education for all participants. Change in THEES total scores from prepresentation to postpresentation was analyzed using a repeated-measures *t* test with critical alpha being set at $P < .05$. Similarly, differences for the individual scale items before and after were analyzed using sign tests with a critical value set at 0.00625 using a Bonferroni correction for each of the 8 scale items to keep the experiment-wide critical alpha at $P < .05$ or better. A principal component analysis with Cattell scree plot suggested a 1-factor solution was appropriate, and Cronbach α was used to assess the internal consistency of the instrument. Secondary endpoints to be assessed using descriptive statistics included participants' reported confidence level after education and perceived clinical applicability.

This research was approved by the institutional review board at the Providence Veterans Affairs Medical Center. This material is the result of work supported with resources and the use of facilities at the Providence Veterans Affairs Medical Center in Providence, Rhode Island.

Results

A total of 5 education sessions were given by the same pharmacy resident in various settings between May and

September 2018. One hundred completed THEES were obtained from unique participants. The reported occupations of participants are reported in Table 2. Two sessions were delivered to medical residents and students during their noon conference. One session was delivered to the multidisciplinary women's health primary care team. One session was delivered to clinical pharmacists, residents, and students during a pharmacy clinical meeting. The 4 preceding sessions were delivered over 45 minutes with Q&A afterward. The final session was delivered to large group ($n = 52$) of pharmacists and pharmacy technicians for continuing education credit for a duration of 30 minutes with Q&A included. The content for this final session was abbreviated to focus on medication therapy

TABLE 2: Occupations of scale responders

Occupation	No. of Participants (n)
Medical doctor	3
Medical resident	10
Medical student	7
Psychologist	1
Pharmacist	41
Pharmacy resident	6
Pharmacy student	5
Pharmacy technician	14
Registered nurse	3
Licensed practical nurse	1
Social worker	2
Medical support assistant	3
Unknown	4

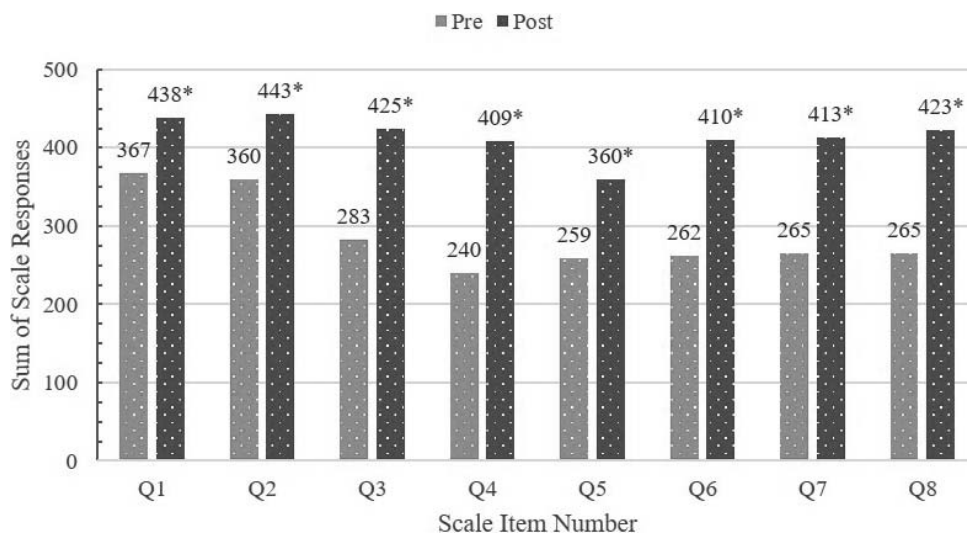


FIGURE: Summed scale responses before and after education (* $P < .001$)

but included information on each item included in the THEES. A majority of participants ($n = 66$) were related to the pharmacy profession (eg, pharmacist, pharmacy technician, pharmacy resident, pharmacy student). The next most populous group were participants in the medical profession (eg, medical doctor, medical resident, medical student).

THEES total scores as well as those for each individual scale item were significantly improved ($P < .001$) after education. The summed results of all THEES obtained from participants are shown in the Figure. Before an education session, participants scored items 1 and 2 the highest with mean scores of 3.67 and 3.6, respectively. Items 3 through 8 on the THEES were associated with individual mean scores between 2.4 and 2.83 immediately prior to an education session with improvement to mean scores ≥ 3.6 (range: 3.6 to 4.25) and at least 1 full point in magnitude of improvement for each mean score. The greatest magnitude of improvement in mean score (+1.69) was seen in item 4, *I am familiar with the medication regimen of cross-sex hormone therapy for transgender individuals*. The THEES had both good face validity as well as internal consistency with Cronbach α for the THEES calculated as .885.

A vast majority of participants felt that the seminar was directly applicable to their clinical setting with 90% responding with *agree* or *strongly agree*. In the same manner, 84% of participants felt an increase in confidence after participation in a seminar, responding with *agree* or *strongly agree*.

Discussion

Results collected from 5 interdisciplinary education sessions indicate that a pharmacist-led seminar signifi-

cantly improves participants' perceived medical proficiency in providing care for patients who are transgender for all key concepts discussed. Based on responses to the preeducation scale, results point toward a gap in education across students, trainees, and current health care-associated workers regarding care of patients who are transgender. The developed THEES showed good internal consistency and face validity for assessing the effectiveness of the given presentation. Thus, education sessions of similar duration that follow the items assessed by the THEES may be directly applicable to a variety of health care-associated workers and trainees and may also improve confidence level for providing care to patients who are transgender in a similar fashion as this presentation was shown to achieve.

One limitation to this study is that a large majority of participants have a background in pharmacy. Future studies utilizing the THEES should continue to include diverse groups of healthcare professionals and students. A focus on medication therapy, as noted by the magnitude of improvement in item 4, may limit a nonpharmacist's ability to deliver the given presentation in this study. However, this was only one aspect of the THEES, and differing groups of clinical staff and trainees may not require in-depth pharmaceutical review. Another limitation is the lack of clinical outcomes data before and after education of health care personnel, which could be studied in the future. Last, future versions of the THEES will be best served by utilizing the most contemporary language available to be more gender-affirming and inclusive.

Conclusion

Current health profession education systems have recently improved with respect to the topic of providing health

care for patients who are transgender; however, deficits in education continue to be present and have led to current providers lacking in self-perceived proficiency and confidence in caring for patients who are transgender. Pharmacists in the clinical setting often have opportunities to deliver formal education sessions, and the reported results demonstrate that a pharmacist-driven education session that follows the items laid out in the THEES can significantly help bridge the transgender education gap.

Acknowledgments

The contents do not represent the views of the US Department of Veterans Affairs or the US Government.

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