5-2023

Approaching Trans Healthcare Competency: The Implementation of Trans Health Education for Medical Providers in Appalachia

Rebecca Altschuler
East Tennessee State University

Recommended Citation

Altschuler, Rebecca, "Approaching Trans Healthcare Competency: The Implementation of Trans Health Education for Medical Providers in Appalachia" (2023). *Electronic Theses and Dissertations.* Paper 4080. https://dc.etsu.edu/etd/4080

Approaching Trans Healthcare Competency: The Implementation of Trans Health Education for Medical Providers in Appalachia

---

A dissertation

presented to

the faculty of the Department of Psychology

East Tennessee State University

In partial fulfillment

of the requirements for the degree

Doctor of Philosophy in Psychology

---

by

Rebecca Altschuler

May 2023

Jill Stinson, Ph.D. Chair

Natasha Gouge, Ph.D.

Abbey Mann, Ph.D.

Kelly Moore, Ph.D.

Stacey Williams, Ph.D.

Keywords: transgender health, medical education, family medicine

ABSTRACT

Approaching Trans Healthcare Competency: The Implementation of Trans Health Education for Medical Providers in Appalachia

by

Rebecca Altschuler

Barriers to competent and safe healthcare disproportionately impact people who are marginalized because of their race, ethnicity, gender, or socioeconomic status. It is well documented that transgender patients in particular experience barriers to both accessing care and receiving high quality, non-discriminatory care (Hatzenbuehler & Pachankis, 2016; James et al., 2016; Rahman et al., 2019; Safer et al., 2016). This lack of access to culturally competent healthcare services contributes to health disparities that disproportionately impact the trans community. Literature on barriers to competent care for trans patients indicates that providers experience discomfort related to their ability to provide competent care (Safer et al., 2016). Many providers endorse a median of only five hours of trans healthcare training across their entire medical school curriculum (Hughto et al., 2015), and in some cases, as little as 45 minutes per year (Sawning et al., 2017). Primary care clinics should be the place in which general health and wellbeing are addressed for trans patients, as has been true for cisgender people. Primary care providers should be competent in assessing eligibility for Hormone Replacement Therapy (HRT) and surgery (Wylie et al., 2016), as well as providing necessary preventative care. Thus, this makes primary care the ideal setting for the proposed medical education implementation project. The current study aimed to develop and implement a training program for medical residents in primary care in rural South Central Appalachia. A six-stage development and implementation study is

described. The intervention was evaluated for pedagogical outcomes including sustainability for future use, usefulness to residents, and accessibility. Evaluation of effectiveness included analyses of changes in providers' self-reported competency, awareness of discriminatory experiences, and attitudes towards treating trans patients. There were no significant differences in pre-post competency scores (r=22, M=33.29[SD=5.96]; r=31, M=37.33[SD=1.02], SD=8.00) or in pre-post attitudes scores (r=15, M=32.76[SE=0.8], SD=4.69; r=13, M=34.7273[SE=1.00], SD=4.692). Accessibility and sustainability were measured qualitatively and included data such as resident attendance and ease of use of material for future behavioral health provider trainers. These outcomes were found to be satisfactory based on stakeholder feedback. Usefulness included three data points (satisfaction, helpfulness, value of training).

TABLE OF CONTENTS

ABSTRACT 2
LIST OF TABLES 7
  Chapter 1. Introduction 8
    How Did We Get Here? Cultural Competency and Barriers to Trans Healthcare 9
      Minority Stress and Sources of Stigma 9
      Medical Provider Training Deficits in Trans Healthcare 12
      Best Practices for Providing Culturally Competent Trans Healthcare Training 13
      The Current Context: Primary Care in Appalachia 14
    The Current Study 18
  Chapter 2. Methods 20
    Phase 1: Problem Definition and General Needs Assessment 20
    Phase 2: Targeted Needs Assessment 21
    Phase 3: Outlining Goals and Objectives/Start-up Workshop 23
    Phase 4: Identifying Educational Strategies/Midway Workshop with Specialist 25
    Phase 5: Implementation of Educational Intervention/Project Work Ctd 26
    Phase 6: Evaluating the Intervention/Concluding Workshop 27
  Chapter 3. Results 30
    Phase 1: Problem Definition and General Needs Assessment 30
    Phase 2: Targeted Needs Assessment 30
    Phase 3: Outlining Goals and Objectives/Start-up Workshop 31
    Phase 4: Identifying Educational Strategies/Midway Workshop with Specialist 32
    Phase 5: Implementation of Educational Intervention/Project Work Ctd 33
    Phase 6: Evaluating the Intervention/Concluding Workshop 34
  Chapter 4. Discussion 51
    Limitations 57
    Conclusion 58

References 60
APPENDICES 67
Appendix A: Literature Matrix 67
Appendix B: Transgender Patient Experiences with Healthcare 88
Appendix C: Resident Resource Guide 90
Appendix D: Sample Vignettes 91
Appendix E: Full Adapted Measures 92
Appendix F: Module Content 94
VITA 95

LIST OF TABLES

Table 1a. Baseline Demographic Data 22

Table 1b. Post Demographic Data 23

Table 2. Needs, Learning Objectives, and Outcome Measures 24

Table 3. Baseline Descriptive Statistics Between Groups 34

Table 4. Baseline ANOVA Comparision Between Groups 35

Table 5a. Personal Exposure to Trans People 36

Table 5b. Professional Exposure to Trans People 36

Table 6. Training Hours in Trans Health Needs 37

Table 7. Hours of Lecturing in Medical School 37

Table 8a. Baseline General Knowledge Item Frequencies 38

Table 8b. Post General Knowledge Item Frequencies 39

Table 9a. Baseline Descriptive Statistics of Attitude and Competency Scales 40

Table 9b. Post Descriptive Statistics of Attitude and Competency Scales 40

Table 10. Descriptive Statistics Within Groups (Post and Baseline) 40

Table 11. ANOVA Between Groups (Post and Baseline) 41

Table 12a. Baseline AMA Guidelines Awareness Items Frequencies 42

Table 12b. Post AMA Guidelines Awareness Items Frequencies 43

Table 13a. Baseline Awareness of Patient Experiences Item Frequencies 44

Table 13b. Post Awareness of Patient Experiences Item Frequencies 46

Table 14. Descriptive Statistics of Resident Experience of Training 49

Chapter 1. Introduction

Access to healthcare is dependent on logistical factors like health insurance coverage, proximity to providers, and availability of specialty clinics. These barriers disproportionately impact people who are marginalized because of their race, ethnicity, gender, or socioeconomic status. Persons with marginalized identities also experience barriers to receiving competent care, even when care is accessible to them. It is well-documented that transgender patients in particular experience a myriad of barriers to both accessing care and receiving high quality, non-discriminatory care (Hatzenbuehler & Pachankis, 2016; James et al., 2016; Rahman et al., 2019; Safer et al., 2016). This lack of access to culturally competent healthcare services contributes to health disparities that disproportionately impact the trans community, leading to poorer health outcomes and increased risk of serious mental health concerns like suicide, substance use, and depression (Meyer, 2003; Hatzenbuehler & Pachankis, 2016; Frost et al., 2015; Hughto et al., 2015; Hendricks & Testa, 2012).

Transgender is a term referring to an experience of assigned sex not matching gender identity. Gender identity is the personal feeling of what one's own gender is, whereas gender expression is the personal choice in how to express that identity. This umbrella term transgender, or "trans", also includes folks who may not identify with binary gender expressions (i.e., "man" or "woman") but rather, identify with no gender expression or a spectrum of gender expression (Trans + Gender Identity, 2020). Throughout this manuscript, the term "trans" will be used as an umbrella term to refer to people who fall outside binary gender expressions as well as people who have gender identity that does not match assigned sex.

One setting in which many barriers for trans people exist is the primary care environment. Prior research indicates that the healthcare experiences of trans individuals in primary care settings in South Central Appalachia are characterized by occurrences of stigma, marginalization, and significant barriers to receiving effective care. Lack of cultural competency training related to trans health needs may maintain existing barriers to care. This dissertation describes the development and implementation of a training intervention for medical residents designed to mitigate health disparities for trans patients. The project involved identifying relevant needs from the literature and involved stakeholders, creating and disseminating a training program across three medical residency training clinics, and evaluating the goals of creating an accessible and useful training program to promote better trans healthcare competencies in medical providers. This introduction includes a summary of literature related to sexual minority stress and stigma, barriers to accessing care for trans patients, provider training deficits, and best practices for cultural competency trainings related to trans healthcare.

How Did We Get Here? Cultural Competency and Barriers to Trans Healthcare

Minority Stress and Sources of Stigma

The Minority Stress Model (Meyer, 2003) is a framework through which we may better understand health disparities among sexual minority individuals, positing that people endure stressors due to experienced and perceived stigma that can lead to poorer physical health outcomes. This model holds that cognitive, social, and affective processes are disrupted by cumulative experiences of stigmatization, often across contexts and throughout the lifespan. Sexual minorities are more frequently exposed to occurrences of prejudice compared to heterosexual people, including being fired from a job, violent victimization, earning less in comparison with heterosexual coworkers, and others (Meyer, 2003). These events lead to a range of poorer health outcomes such as sleep disturbances, chronic headaches, gastrointestinal issues, anxiety, depression, substance use, and interpersonal distress (Meyer, 2003; Hatzenbuehler

& Pachankis, 2016; Frost et al., 2015; Hughto et al., 2015). For example, in one recent study (Frost et al., 2015), sexual minority participants were three times more likely to experience a health problem (including cancer, hypertension, and influenza) at follow-up if they had also experienced a prejudice event compared to sexual minority participants who had not experienced these events.

The Minority Stress Model was adapted by Hendricks and Testa (2012) to include trans people and demonstrated that suicidal ideation was amplified in trans people who had experienced gender-based hostility (Hendricks & Testa, 2012). As in the traditional Minority Stress Model, these results suggest an impact of discrimination on the psychological and physical health of trans people, as is also true of other diverse groups represented in the Minority Stress Model literature.

Stigma that impacts healthcare falls within two types: structural stigma and interpersonal stigma. Structural stigma (including societal norms, policies, and laws) has a marked impact on health outcomes and health disparities trans people face due to both structurally-based barriers and the effect of policies on provider training and attitudes (Hatzenbuehler & Pachankis, 2016). For example, in 2020, section 1557 of the U.S. Affordable Care Act was amended to include only "male" or "female" in the definition of gender discrimination, a ruling that overtly allows medical providers to refuse care to trans patients on the basis of gender alone. Further, in September of 2020, the Executive Order on Combating Race and Sex Stereotyping and M20-34 was passed by the U.S. Trump Presidential Administration, prohibiting federally-funded agencies from providing what was described as "divisive, propaganda diversity and inclusion trainings." This cultural Zeitgeist is an example of structural stigma that broadly impacts trans patients by limiting accessibility of healthcare options and protecting discriminatory practices that harm trans patients. This also directly impacts trans patients when they do access care by maintaining a culture of discrimination among providers that sets a low bar for seeking learning opportunities, providing scientifically up-to-date care practices, and adhering to American Medical Association guidelines for treating diverse patients. Other forms of structural stigma are evident. Many trans people lack access to health insurance, which leads to prohibitive out-of-pocket medical costs for gender-affirming treatments, and trans healthcare competency training is seldom delivered to medical students and residents.

At the interpersonal level, trans people experience overt violence but also covert violence in the form of microaggressions (Hatzenbuehler & Pachankis, 2016). In a healthcare setting, the experience of microaggressions from a provider or clinic staff are one of many reported barriers to accessing culturally competent care (Hugto et al., 2015). For example, McPhail and colleagues (2016) reported trans patients experiencing microaggressions such as misgendering, provider shock in response to gender-affirming medical requests like hysterectomies, questions about how trans men could have been pregnant, and minimizing the imperative nature of gender-affirming garments like chest binders. Physicians carry into medical education their own moral views that, despite an oath to do no harm, may negatively impact populations with whom they feel least comfortable (Snelgrove et al., 2012). Many physicians surveyed within the empirical literature report biases towards trans patients and indicate “moral” dilemmas with being trans (Snelgrove et al., 2012). When providers initiate their medical training holding personal biases originating from geographical or religious influences or other precursors to bias, and work within a political system that legally supports microaggressions and prevents education from mitigating or eliminating that bias, this facilitates discrimination at the provider-patient level. For example, a national study indicated that 28% of trans respondents had experienced harassment in a medical setting, 19% were refused care, and 2% experienced violence in their doctor's office (Grant et al., 2011). Interpersonal stigma in healthcare is, in part, due to insufficient provider training and has a cyclical impact on the health journey of the patient, often resulting in care avoidance (Hugto et al., 2015; Kattari et al., 2020).

Interpersonal stigma at a provider level is a barrier to accessing competent care because patients experience discrimination at their medical offices. The U.S Transgender Survey (2015) indicated that a third of participants reported a negative interaction with a healthcare provider in the past year, and this rate increased among patients with intersecting identities (James et al., 2016). As a result, 23% of respondents did not seek necessary medical care because of fear of discrimination (James et al., 2016).

Medical Provider Training Deficits in Trans Healthcare

Much of the literature on barriers to competent care for trans patients indicates that providers experience discomfort related to their ability to provide competent care (Safer et al., 2016). Many providers endorse a median of only five hours of trans healthcare training across their entire medical school curriculum (Hughto et al., 2015), and in some cases, as little as 45 minutes per year (Sawning et al., 2017). In 2018, a national survey of U.S. medical schools indicated that 76% of medical students rated their trans health education as only fair or poor, while a staggering 83% of students reported minimal to no trans health education in their entire residency training experience (Dubin et al., 2018). This gap in training is apparent in medical providers' lack of knowledge regarding best practices for trans healthcare, as well as their discomfort with treating trans patients (Dubin et al., 2018). General healthcare providers like primary care physicians have expressed a lack of preparation and appropriate training for working with trans patients (Poteat et al., 2013), and specialists like endocrinologists and gynecologists report feeling ill-equipped to understand the psychosocial aspects of trans patients' experiences even when medically competent to prescribe and monitor Hormone Replacement Therapy (McPhail et al., 2016; Poteat et al., 2013). Some providers report feeling worried that their lack of training could inadvertently physically harm trans patients they treat, and this concern often leads to avoidance of treating trans patients at all (McPhail et al., 2016).

Medical providers' lack of education contributes to patients' feelings of unease and mistrust while also continuing to foster a stigmatizing environment. While some of these barriers have solutions that could only be implemented at systemic levels (i.e., health insurance access), many barriers to competent care may be addressed by improvements in provider education, including cultural competence/training for providers and staff, development of trans-friendly clinical environments, and promotion of basic trans health education (Hanssmann, 2008).

Best Practices for Providing Culturally Competent Trans Healthcare Training

Given the evidence suggesting pervasive deficits in relevant training for medical providers, recent empirical efforts have investigated the effect of infusing trans-specific healthcare training into the medical curriculum. Several best practices have been suggested, many of which have arisen from needs assessments of metropolitan patient communities. For example, themes such as gender insensitivity (e.g., use of incorrect pronouns or microaggressive statements from office staff and providers), denial of services, forced care (e.g., unnecessary physical exams and/or forced psychiatric hospitalizations), as well as verbal abuse have been identified as major barriers to trans patients receiving competent care. These areas of concern have been empirically demonstrated to improve with cultural competency trainings (Dubin et al., 2018), with simple interventions often improving cultural competency.

Gender insensitivity, or lack of awareness of the role gender plays in an individual's life and identity, is an experience commonly reported by many trans patients seeking healthcare (Kosenko et al., 2013) and may stem from lack of understanding of trans healthcare and the psychosocial aspects of being trans. It has been suggested that health clinics could facilitate greater cultural competence by creating office environments that are welcoming and sensitive to and inclusive of gender identity (Redfern & Sinclair, 2014). In addition to changes to the physical space (e.g., gender neutral restrooms), more intentional usage of correct pronouns as well as using indicated names over legal names is imperative to providing competent care to trans patients (Redfern & Sinclair, 2014). Further, measures like implementing more trauma informed communication skills creates a patient-centered environment in which the patient is informed about the rationale of medical procedures and has power to consent to aspects of care, which may reduce occurrences of forced care or denial of services resulting from providers' lack of knowledge or discomfort. Redfern and Sinclair (2014) suggested that a new patient visit interview should be conversational and safe, with explanations intended to decrease trauma responding and promote open communication and trust between patient and provider. This recommendation is echoed by patients in needs assessment studies (McClain et al., 2016) and could be implemented in a variety of intervention formats.

Context of the Current Study: Primary Care in Appalachia

Primary care settings provide access to comprehensive medical care across the lifespan. Primary care providers strive to successfully diagnosis and manage biological, psychological, and social concerns by providing support to patients throughout their lifespans in all stages of illness (Frankel & Beckman, 2004). Primary care clinics should be the place in which general health and wellbeing are addressed for trans patients, as has been true for cisgender people.

Primary care providers should be competent in assessing eligibility for Hormone Replacement Therapy (HRT) and surgery (Wylie et al., 2016), as well as providing necessary preventative care. Thus, this makes primary care the ideal setting for the proposed medical education development and implementation project.

However, primary care settings are notoriously fast-paced work environments, and primary care providers often report having very little time to spend with patients, averaging approximately 16 minutes per patient (Frankel & Beckman, 2004). Any trainings or interventions designed for implementation in this setting must be succinct and efficient. Some empirical explorations of the efficiency of different formats of cultural competency trainings for working with trans patients exist. Regardless of format, increased opportunities for learning are associated with a 67% decrease in the number of medical students who felt uncomfortable treating trans patients (Dubin et al., 2018), have been shown to be associated with increased knowledge about health disparities, and increased knowledge regarding basic concepts relevant to trans health such as the difference between biological sex and gender (Dubin et al., 2018).

Provider education interventions have been piloted in clinics across the U.S and have included educational domains such as overviewing biological sex versus gender identity, social determinates of health and health disparities, care needs and risks when treating trans patients, and providing examples of how to give culturally competent care (Vanderlesst & Galper, 2009). Many of these piloted interventions for healthcare providers have improved provider knowledge regarding trans patient care needs as well as overall clinical competency (Felsenstein, 2018; Keuroghlian et al., 2017; Lelutiu-Weinberger et al., 2016; Sequeira et al., 2012; Sawning et al., 2017; Snelgrove et al., 2012; Thomas & Safer, 2015; White et al., 2015). Many piloted interventions involve medical residents and have shown that they value education regarding trans health disparities and structural barriers to care (Hanssmann et al., 2008) and benefit from gaining hands-on experience working with trans patient populations in clinic (Lelutiu-Weinberger et al., 2014; Park, & Safer, 2018). These results indicate a desire for more training from medical residents specifically and show efficacy for cultural competency trainings. However, a survey in the Southeastern U.S. indicated predominantly negative attitudes among medical residency program directors regarding the importance of trans health education (Dubin et al., 2018). Thus, while medical residents may be amenable to such education, their program directors may be less welcoming.

While this literature supports the notion that trans health focused trainings in residency are useful in improving understanding, attitudes, and willingness to treat trans patients, many of these studies have been piloted in metropolitan areas, and none have been piloted in the rural southern region of the United States. With the unique culture and barriers to care people in the rural southeastern United States experience, this type of medical training is imperative to improve health outcomes of trans patients in South Central Appalachia. Developing a training model with input from medical residents in this region is critical for understanding how to best address deficits in provider education and cultural barriers that exist for patients and providers in the region.

An intersectional approach, or one that considers the range of identities a person holds across race, ethnicity, age, gender, sexual orientation, class, or physical ability, is suggested (Warner, 2008) when conducting research with participants who have marginalized identities. For trans patients in South Central Appalachia, intersectional identities constitute barriers to receiving competent healthcare and increase the risk of poorer health outcomes (Benson et al., 2018; Hughto et al., 2016; McGarvey et al., 2011). This only adds to existing social disparities in

Southern Appalachia, such as lack of economic resources (McGarvey et al., 2011), discrimination against trans people in religious communities (Benson, Westerfield, & van Eeden-Moorefield, 2018), and lack of transportation/proximal distance barriers to affirming healthcare clinics. Trans patients in South Central Appalachia thus experience intersectionality that exponentially multiplies barriers to receiving competent healthcare (Hughto et al., 2016). For example, trans patients with lower income experience higher rates of care refusal due to having fewer resources to research more inclusive providers and/or travel further for care (Kattari et al., 2020). Medical education for residents within this region can assist in reducing negative bias toward trans patients and remove some barriers that exist in seeking competent healthcare.

Additionally, Appalachian culture itself functions as an identity that impacts medical care. There is reportedly a perception that medical providers lack cultural competency regarding Appalachian values more broadly (McGarvey et al., 2011). Cisgender patients in this region cite this incompetence as a barrier to utilizing healthcare service and are more likely to report poorer health outcomes than people who are not from Appalachia (Huttlinger et al., 2004; McGarvey et al., 2011). This lack of provider competency is evident also within interpersonal interactions. For example, cisgender patients in Appalachia have reported poor communication in encounters with medical providers (Holder et al., 2012). Trans patients in Southern Appalachia specifically report having to educate providers about ways to respect them and being afraid of care refusal if they practice self-advocacy (Johnson et al., 2020; Marshall et al., 2018). This burden of needing strong health literacy is anxiety-provoking for trans patients (Johnson et al., 2020). Further, patients have to work diligently to obtain health insurance that might cover some of their transition care (Marshall et al., 2018) and search for a provider close to their geographic location who is willing to treat them (Marshall et al., 2018). This often results in delays from needing medical care to receiving it (Johnson et al., 2020). Trans patients in South Central Appalachia are at greater risk of experiencing healthcare disparities compared to other trans patients in the country and yet, there have not been medical education interventions for primary care providers in this region that have included community needs assessment data. The current study intended to address these gaps.

The Current Study

Given the clear need to improve provider training for culturally competent trans healthcare practice, the current study aimed to develop and implement a training program for healthcare providers in the surrounding region. This project utilized a community-based participatory research design to engage medical residents in primary care in rural South Central Appalachia in the development of a cultural competency training, specific to the needs of trans patients and their providers in this region. Data from the TransACCESS study was utilized to inform initial development of the training. The TransACCESS study is a mixed-methods, interdisciplinary project that utilized in-depth, qualitative participant interviews and quantitative surveys to examine healthcare experiences of trans people in the South Central Appalachian region with the intention to utilize trans patient feedback to develop medical education trainings. The current study utilized a similar model and methodology as previous research (Berenson et al., 2020; Lelutiu-Weinberger et al., 2014) to assess the preliminary effectiveness of the educational intervention in accessibility of the training, utility to the residents' practices, and sustainability of the programming for the clinics' long-term use. I also hypothesized that medical residents would have a significant change in knowledge related to psychosocial aspects of gender identity and health disparities trans patients experience in South Central Appalachia, and that residents' self-assessed competency to treat trans patients would significantly increase between pre and post intervention.

Chapter 2. Methods

The model for the current study follows two research models concurrently. First, action learning and action research (ALAR) design was utilized for the project overall, as ALAR incorporates the values of adaptivity, flexibility, and generic design to best serve the organization (Zuber-Skerritt, 2002). These values were identified in the early stages of project planning to be the overarching goals of training implementation. The ALAR research design outlines eight-phases of project development including 1) problem definition/needs analysis, 2) start-up workshop, 3) project work, 4) midway workshop with specialist input, 5) project work continued, 6) concluding workshop, 7) preparing for presentations/publications, and 8) final presentation/celebration.

Another design model was needed to build the training program. As such, the trans healthcare educational program for the current study was developed utilizing the Kern Model (Thomas et al., 2016), which is a curriculum development approach specific to medical education. The Kern Model was previously and successfully utilized to develop programming related to trans healthcare competencies for second year medical students (Berenson et al., 2020). This model includes six steps that constitute the various phases of my current dissertation research: 1) problem identification and general needs assessment, 2) targeted needs assessment, 3) outlining goals and objectives, 4) identifying educational strategies, 5) implementation of the educational intervention, and 6) evaluating the intervention. This model closely adheres to the ALAR model with similar phase goals and ideology.

Phase 1: ALAR – Problem definition and general needs assessment

The current study was based on a scoping literature review (Pham et al., 2014) of gaps in medical education addressing healthcare competency for trans patients. For this study, I conducted structured searches of three databases (PubMed PsychINFO, and EducationSource) using relevant keywords (i.e., transgender health, minority stress model, healthcare discrimination, transgender medical training, barriers to care). Literature was sorted into a large matrix based on type of methodology, year of publication, and predetermined qualitatively assigned categories.

Phase 2: Kern Model – Targeted needs assessment

Targeted needs assessment efforts involved community-based data gathering from two relevant groups. First, needs assessment data collected from the TransACCESS survey detailed trans patients' experiences with healthcare in South Central Appalachia. These data were utilized in subsequent phases of the study to provide feedback to residents related to trans patients' healthcare experiences in the region, which included environmental practices of clinics, experiences of interpersonal stigmatization with clinic staff, experiences of being denied care, perception of provider competency for treating trans patients, and perception of ability to disclose gender identity (Appendix B).

The second group involved in the targeted needs assessment consisted of medical residents at a medical college in South Central Appalachia across three regional clinics. IRB approval of this project was granted by the ETSU Campus IRB on March 2, 2021 prior to the first scheduled training module. All medical residents enrolled in the residency program were invited via email by the Director of Faculty Development and the Resident Training Psychologist to the training as part of their behavioral health didactic curriculum. Residents self-excluded due to schedule conflicts. Medical residents were potentially involved at two time points during the study, including pre- and post-implementation of the medical education intervention and associated surveys. Informed consent was obtained via emailed consent form, which all residents who attended any amount of training modules were required to sign. Residents had the opportunity to ask questions regarding informed consent prior to participating in the trainings.

At baseline, 35 total residents completed the pre-training survey, with 34.3% post-graduate year (PGY) 1, 31.4% PGY2, and 34.3% PGY 3. Just over half (51.4%) of residents identified as men, and 31.4% identified as women, with 17.1% who did not specify their gender. Following the completion of both sections of the training, 24 total participants completed the post-training survey; 37.5% of residents were PGY1, 25% were PGY2, and 37.5% were PGY3. In the post-training group, 33.3% of residents identified as men, 41.7% identified as women, and 25% did not specify their gender identity (Tables 1a and 1b).

Table 1a

Baseline Demographic Data

Baseline characteristic	*n*	%
Gender of Resident		
Male	18	51.4%
Female	11	31.4%
Unspecified	6	17.1%
Year of Residency		
PGY1	12	34.3%
PGY2	11	31.4%
PGY3	12	34.3%
Location of Residency		
JC	13	37.1%
Bpt	14	40.0%
Kpt	8	22.9%

Table 1b

Post Demographic Data

Baseline characteristic	*n*	*%*
Gender of Resident		
Male	8	33.3%
Female	10	41.7%
Unspecified	6	25.0%
Year of Residency		
PGY1	9	37.5%
PGY2	6	25.0%
PGY3	9	37.5%
Location of Residency		
Clinic 1	7	29.2%
Clinic 2	12	50.0%
Clinic 3	5	20.8%

Between clinic sites, 37.1% of residents who completed the survey at baseline were practicing at Clinic 1, 40% at Clinic 2, and 22.9% at Clinic 3. Of note, Clinic 1 was the only clinic to have the training delivered entirely virtually and was also the only clinic to have a fully operational Hormone Replacement Therapy clinic that residents practice in.

Phase 3: Kern Model and ALAR – Outlining goals and objectives/Start-up Workshop and Project Work

Primary learning objectives for the planned medical education intervention were largely derived from the TransACCESS Data (Table 2).

Table 2.

Needs, Learning Objectives, and Outcome Measures

Areas of Improvement in Care as Identified by Needs Assessment	Learning Objectives	Outcome Measures
Affirming Environment *Participants report discriminatory environmental practices including* • Presence of gender specific bathrooms • Absence of affirming signage and materials	Learners will better understand the effects on environmental space on patient comfort and care satisfaction	Brief measure of awareness of AMA guidelines for inclusive spaces (to be created for the proposed study)
Interpersonal Discrimination *Participants report discrimination from staff and providers including* • Deadnaming • Misgendering • Lack of cultural competence regarding trans identity	1) Learners will better understand in the impact of specific forms of interpersonal discrimination on patient experience and care. 2) Learners will practice supportive patient interactions	• Brief measure of awareness of discriminatory experiences (to be created for the proposed study) • Counselor Competency Scale (Bidell, 2005)
Perceived Stigma/ Expected Stigma *Participants report the perception and/ or expectation of stigmatization as indicated by:* • Feeling as though treatment is influenced by the patients' gender identity • Feeling unsafe to disclose gender identity to providers/staff • Feeling as though providers' personal beliefs and values will inhibit care quality	1) Learners will better understand perceived stigma and the impact of stigma on patient care, 2) Learners will practice affirming patient interactions 3) Learners will practice techniques for fostering patient trust	• Gay-Affirmative Practice Scale (Crisp, 2006) • Counselor Competency Scale (Bidell, 2005)

Perceived Provider Knowledge of Trans Health Needs *Participants report gaps in provider knowledge regarding Trans specific healthcare needs (such as HRT) in routine care and trans-specific care*	1) Learners will gain knowledge related to trans healthcare needs 2) Learners will improve confidence and competency in providing healthcare to trans patients	• Counselor Competency Scale (Bidell, 2005) • Brief measure of level of knowledge of trans patient healthcare needs (created for this study)

Additional learning objectives were added following input from stakeholders which included resident liaisons, educational consultants to the training program, and behavioral health didactic facilitators within the residency training program. Stakeholders were asked to identify areas of competency that would be beneficial for their practices to improve upon, what baseline information would be necessary for all participants to know in order for the training to be most helpful.

Phase 4: Kern Model and ALAR – Identifying educational strategies/Midway workshop with specialist input

Educational strategizing occurred in three steps, which included contextual considerations, goal setting, and training design. First, due to the current study taking place during the COVID-19 pandemic, the training had to be customized to the needs of busy family medicine practices while also following social distancing guidelines. As such, trainings were planned to be a hybrid of virtual and live delivery to pivot in response to space allocations at each clinic and to allow residents who were on hospital rotations to attend trainings. Second, pedagogical goals for this study were set and included accessibility, sustainability, and usefulness to the residents' practice, as these aspects have been identified in literature as being barriers to trans healthcare training implementation (Dubin et al., 2018). Third, an educational consultant was utilized to inform best style of training design to meet the stated pedagogical goals. Accessibility was addressed through the hybrid delivery format as well as through the "living" resource guide provided to residents following the conclusion of the study. Sustainability was addressed by including behavioral health providers and training facilitators in the training module design and implementation in order for the training to be continued in future residency cohorts. Usefulness was addressed through interactive case presentations and practiced in collaboration within an interdisciplinary team to "solve" vignettes (Appendix D) that were similar to cases that may present in a family medicine practice. Including stakeholder residents in the development of the modules also contributed to usefulness, as it allowed topics to be included that residents were specifically seeking information about, such as cancer screening protocols, HRT information, and documentation challenges with pediatric patients.

Phase 5: Kern Model and ALAR – Implementation of the educational intervention/Project Work Continued

Implementation of the training modules occurred over the course of two months following IRB approval of the project and are outlined, along with pedagogical strategies, in Appendix F. Each clinic received both modules of the two-part training series. Prior to residents attending their first training module, they received the survey for data collection via an emailed REDCap survey link, which included the informed consent. Residents did not have to attend both training modules and as such received the survey link even if they only attended the second module to maintain fidelity to the goal of accessibility of the material. Each clinic received either entirely live or entirely hybrid delivery of the modules depending on social distancing compliant space resources at the site. As such, more collaborative and discussion-based elements of the modules were conducted via chat at the virtually delivered clinic training.

Phase 6: Kern Model and ALAR – Evaluating the intervention/Concluding Workshop

An effective effort to implement the training intervention would be consistent with the aforementioned goals of utility to residents, sustainability, and accessibility. Data were collected regarding residents' perception of usefulness of the training, and they were provided the opportunity to ask for specific topics to be addressed in the living resource guide. Residents were also provided the opportunity to provide unstructured, qualitative feedback to the trainer. Sustainability was evaluated by gathering unstructured qualitative feedback from non-resident stakeholders regarding length of training, content within training modules, and presentation style. Finally, accessibility was assessed by attendance at all trainings across sites. Analyses of the effectiveness of the intervention included measures of competency, provider awareness of discriminatory experiences and provider attitudes towards treating trans patients.

Competency was assessed in two separate ways. First, residents were asked objective measures of competency including their exposure to trans patients, hours spent receiving various types of training regarding trans healthcare, and general knowledge related to trans healthcare needs. Residents were also qualitatively asked to indicate what types of training on trans healthcare they had received post medical school. Second, residents completed an adapted and combined version of The Sexual Orientation Counselor Competency Scale (Bidell, 2005) and The Gay-Affirmative Practice Scale (Crisp, 2006), which served as a subjective measure of competency. Following both sections of the training, residents filled out a post-training survey to indicate any changes in competency levels and to report if the training had been useful to their practice.

Awareness was measured both by awareness of the AMA practice guidelines (Eckstrand & Potter, 2016) and the awareness of trans patient healthcare experiences in Appalachia. Items aiming to measure awareness of AMA practice guidelines were created for use in this study (see Appendix E), as were the items asking residents about their perceptions of patient healthcare experiences. The latter responses were qualitatively compared to reported experiences in the TransACCESS data for accuracy of perception.

Attitude towards treating trans patients was assessed using an adapted version of The Gay-Affirmative Practice Scale (Crisp, 2006). This measure originally was a 30-item, Likert scale, measure of both provider beliefs and provider behaviors. Overall measure reliability was an alpha=0.95 with adequate validity (Crisp, 2006). For use in the current study, wording regarding sexuality was adapted to be gender-specific. Items from this measure that were used to measure competency were not included in the attitude adaptation. General knowledge was assessed using items created for use in this study (Appendix E).

Participating medical residents then filled out a pre-training survey to indicate baseline levels of trans health related competency and knowledge including an adapted version of The Sexual Orientation Counselor Competency Scale (Bidell, 2005), The Gay-Affirmative Practice Scale (Crisp, 2006), and other measures created for use in this study that assessed for awareness of the American Medical Association’s practice guidelines and awareness of trans patient experiences in South Central Appalachia (Appendix E). The Sexual Orientation Counselor Competency Scale (Bidell, 2005) originally measured the attitudes, skills, and knowledge of counselors who work with sexual minority individuals. This measure has an internal consistency of α=.90, and adequate criterion, concurrent, and divergent validity (Bidell, 2005). This measure was adapted for use in the current study.

Analyses for this phase of the study included basic frequencies calculations and ANOVA test analysis of pre and post survey measures to assess significant changes between baseline and post-program provider knowledge regarding trans healthcare, awareness of AMA guidelines and patient experiences, attitudes towards trans patients in their practice, and self-assessed subjective competency. Data were analyzed using SPSS, version 28.

Chapter 3. Results

Phase 1: ALAR – Problem definition and general needs assessment

The scoping literature review yielded approximately 50 relevant peer-reviewed works that encompassed about seven qualitatively determined themes within transgender healthcare (barriers to care, provider education, minority stress, intersectionality, pedagogical considerations for medical education, trans health in the southern U.S., Appalachian healthcare). A summarized literature matrix is described in Appendix A.

A national deficit in trans health-related educational content during medical training (Hughto et al., 2015; Sawning et al., 2017; Dubin et al., 2018; McPhail et al., 2016; Poteat et al., 2013) contributes to health disparities and trans patients' experiences of discrimination in healthcare. While some programming has been implemented to address this concern (Berenson et al., 2020; Felsenstein, 2018; Keuroghlian et al., 2017; Lelutiu-Weinberger et al., 2016; Sequeira et al., 2012; Sawning et al., 2017; Snelgrove et al., 2012; Thomas & Safer, 2015; White et al., 2015; Hanssmann et al., 2008) most of this programming has been implemented either prior to students working directly with patients (i.e,, during early medical school years) or in more urban areas. Thus, there is a need to address intersectionality concerns in the underserved region of South Central Appalachia by providing programming to medical residents working with patients in primary care.

Phase 2: Kern Model – Targeted needs assessment

The needs of the residency program were assessed through stakeholder and resident liaison involvement. Two major themes arose from planning with these key stakeholders: accessibility/reusability of the material and usefulness of the material to the resident. Stakeholder participation in the early the development of the program and throughout implementation was used to create a sustainable training that could be left with the residency program after the conclusion of the study. Stakeholder participation was also utilized to fit the training to social distancing guidelines during the COVID-19 pandemic. Stakeholders included training facilitators within both the behavioral health service in the residency program and within the larger medical school faculty, behavioral health providers employed by the residency program clinics, and identified residents who acted as liaisons. The resident liaisons assisted in the development of the training by indicating what the most useful topics within trans health would be to participants. These individuals also aided by providing feedback related to how to present material in the most engaging but accessible way with the restrictions in place.

The development and implementation of the training was a hybrid of both virtual and in person learning as each clinic location within the larger residency program had different COVID-19 guidelines for training. This presented an interesting opportunity to address accessibility concerns in rural areas broadly by having to design the material delivery to be virtual and accessible while also being engaging, useful, and meaningful. Ultimately, this was achieved by creating material that was delivered differently at each site and by reimagining the participatory elements of the training for the fully virtual training sessions. This was also achieved by providing a resident-informed resource guide at the end of the training built in a way that allowed quick access to primary care resources the resident may need on site.

Phase 3: Kern Model and ALAR – Outlining goals and objectives/Start-up Workshop and Project Work

These objectives were met by the presentation of basic trans health related terminology, data related to trans patient health outcomes, and TransACCESS data related to experiences of discrimination in healthcare. Additional objectives identified by residents included trans specific cancer screening protocols, trauma and gender informed examination protocols, and curating a resource guide for residents (Appendix C).

Phase 4: Kern Model and ALAR – Identifying educational strategies/Midway workshop with Specialist Input

Pedagogical goals for this study included accessibility, sustainability, and usefulness to the residents' practice. Accessibility of the training materials applied both to the COVID-19 pandemic as well as the inherent constraints within medical training program schedule. The flexibility of the material to be delivered virtually, hybrid, or in person allowed the maximum degree of accessibility to residents in the cohort. Contextual considerations were implemented specific to clinic site and resources. Due to COVID-19 and spacing limitations, Clinic 1 received an entirely virtual format of the training, and Clinics 2 and 3 received hybrid versions. The full virtual version of the modules allowed for maximum engagement and interaction from virtual attendees through polling activities, chat function-based discussions, and more interactive material such as videos, than was true of the hybrid format. Changes were made to the training modules for Clinic 2 and 3 to accommodate the in-person format following feedback from on-site stakeholders. These changes included removing the polling activities and facilitating more in-vivo discussions and challenges. Despite changes made to modules to accommodate the need for virtual learning both due to COVID-19 and accessibility (residents are often on call at the hospital during training times), qualitative observation suggests that materials delivered in-person were more engaging and interactive. The goal of sustainability is an ongoing metric that in subsequent research may be further explored. The behavioral health service team at all three clinics attended the modules and became familiarized with the materials. The modules were formatted for future use and provided to the behavioral health service training leader following the conclusion of the training in order to ensure the application of this training program in subsequent residency cohorts. The goal of usefulness was incorporated and measured in a variety of ways. First, quantitative data were collected from the residents to assess for usefulness, as is described in subsequent sections of the results. Second, the resource guide was built by resident request with customized information hyperlinked and clearly titled directly into the guide including medical databases, best practices, and pharmacological information. The resource guide is accessible via mobile devices and computers such that residents could access it if needed in real time during patient care. Third, the interactive and resident liaison informed module materials aimed to make the training as applicable to real-time practice as possible

Phase 5: Kern Model and ALAR – Implementation of the educational intervention/Project Work Continued

The developed educational programming was implemented in one residency program in South Central Appalachia across three training clinics located within the region. Each training clinic had different levels of exposure to behavioral health service and had differing policies related to treating trans patients. Medical residents enrolled in the residency training programs at these identified clinics were encouraged to attend the training as their weekly behavioral health didactic. One clinic site was entirely via Zoom, with residents signing in from their own locations, and training at two clinic sites was delivered in person, with most residents in attendance live but some attending via Zoom from their own locations. Training occurred between March 2021 and April 2021. Each of the three clinic sites received two modules of the training program. Across sites, the resident attendance rate was between 8-15 residents, with the live delivery format more attended than the hybrid delivery format. Training sessions were also open to preceptors and behavioral health providers. Across the training sites, approximately 3 preceptors and 1 behavioral health provider attended each module.

Phase 6: Kern Model and ALAR – Evaluating the intervention/ Concluding Workshop

Pre- and post-evaluations were conducted by group, and participant data were not matched in order to maintain anonymity of participants. Thus, findings in Phase 6 should be interpreted with caution, as they do not represent individualized differences at pre- and post-training implementation. There were some baseline mean differences in the competency measure (Table 3) between clinic sites that were further examined using ANOVA test for mean differences (Table 4). The awareness measure had no significant mean differences at baseline (Table 4).

Table 3

Baseline Descriptive Statistics Between Groups

		N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Min	Max
						Lower Bound	Upper Bound		
Competency Scale	Clinic 1	12	37.9167	4.62126	1.33404	34.9805	40.8529	30.00	46.00
	Clinic 2	14	29.5714	4.43265	1.18467	27.0121	32.1308	24.00	37.00
	Clinic 3	8	32.8750	5.74301	2.03046	28.0737	37.6763	26.00	40.00
	Total	34	33.2941	5.96215	1.02250	31.2138	35.3744	24.00	46.00
Attitude Scale	Clinic 1	13	33.3077	4.15100	1.15128	30.7993	35.8161	28.00	39.00
	Clinic 2	13	32.0000	4.43471	1.22997	29.3201	34.6799	26.00	40.00
	Clinic 3	8	33.1250	6.24357	2.20743	27.9052	38.3448	25.00	40.00
	Total	34	32.7647	4.69725	.80557	31.1258	34.4037	25.00	40.00

Table 4

Baseline Welch's t-test Comparison Between Groups

		Sum of Squares	df	Mean Square	F	Sig.
Competency Scale	Between Groups	451.839	2	225.919	9.711	.001
	Within Groups	721.220	31	23.265		
	Total	1173.059	33			
Attitude Scale	Between Groups	12.473	2	6.237	.270	.765
	Within Groups	715.644	31	23.085		
	Total	728.118	33			

Competency

At baseline, objective measures of competency broadly indicated a mix of personal exposure to trans people in both professional and personal contexts (Tables 5a and 5b). Of note, 62.9% of participants indicated having patients during residency who were trans, with 37.1% indicating that they had not (*n*=35). 51.4% of residents with trans patients during the residency program reported having between 1-5 patients, and 11.4% of residents indicated having 20 trans patients during residency. Participants were also asked to indicate various training in trans healthcare that they had formally received, which is described in Table 6. Of note, 60% of participants indicated they had received lecturing in medical school, only 28.6% of participants indicated receiving formal, clinically oriented training following medical school, and 85.7% indicated they had never attended conferences, webinars, or other formally organized trainings post-graduation. The majority of residents indicated 3 hours or fewer (45%, *n*=20) of lecturing in medical school (Table 7).

Table 5a

Exposure to Trans People

		Frequency	Percent
I have met a transgender person	No Yes	2 33	5.7% 94.3%
I know someone (an acquaintance) who is transgender.	No Yes	20 15	57.1% 42.9%
I have a coworker who is transgender.	No Yes	35 0	100.0%
I have a close, personal, friend who is transgender	No Yes	33 2	94.3% 5.7%
I have a family member who is transgender	No Yes	32 3	91.4% 8.6%
I have a romantic partner who is transgender.	No Yes	35 0	100%
I have patients who are transgender.	No Yes	13 22	37.1% 62.9%

Table 5b

Professional Exposure to Transgender People

Number of Patients Treated	Frequency	Percent
0	6	17.1%
1-5	18	51.4%
6-9	1	2.6%
10-15	2	5.7%
20	4	11.4%
20-25	1	2.6%
30	1	2.6%
Missing	2	5.7%

Table 6

Training in Trans healthcare

		Frequency	Percent
I have received lecturing in medical school on transgender health	No Yes	14 21	40.0% 60.0%
I have received formal, clinically oriented training regarding transgender health	No Yes	25 10	71.4% 28.6%
I have taken courses outside of my formal medical education on transgender health	No Yes	34 1	97.1% 2.9%
I have attended conferences, trainings, webinars, etc outside of my formal medical education on transgender health topics	No Yes	30 8	85.7% 22.9%
I have not received any organized training on transgender health topics.	No Yes	27 3	77.1% 8.6%

***Table** 7*

Hours of Lecturing in Medical School

Lecture Hours in Medical School	Frequency	Percent
1	3	15.0
2	4	20.0
3	2	10.0
4	1	5.0
5	1	5.0
6	1	5.0
8	3	15.0
10	3	15.0
15	1	5.0
20	1	5.0
Total	20	100.0

Fifteen residents indicated that they had informal training, and the majority described activities such as “self-guided readings”, “articles on prescribing transitioning hormones”, “university campus club lecture one time”, and “resident-led presentations”. Two of the 15 residents who responded to this item indicated they had sought out “an afternoon-length course on trans medicine” and other organized, formal, seminars. Items related to general knowledge of trans health needs indicated a ceiling effect at baseline with most participants indicating knowledge of common trans health needs (Tables 8a and 8b).

Table 8a

Baseline General Knowledge Item Frequencies

		Frequency	Percent
If a patient requests Hormone Replacement Therapy (HRT) from a primary care provider, the PCP can prescribe it.	True	34	97.1%
	False	1	2.9%
If a patient requests HRT from a PCP, the PCP needs to refer the patient to an endocrinologist.	True	2	5.7%
	False	33	94.3%
All female-to-male (FTM) patients will want phalloplasty someday.	True	0	
	False	35	100.0%
All male-to-female (MTF) patients will want chest surgery someday.	True	1	2.9%
	False	34	97.1%
Transgender male patients never need pap smears.	True	2	5.7%
	False	33	94.3%
Transgender female patients never need a prostate exam.	True	2	5.7%
	False	33	94.3%
Transgender male patients cannot get pregnant.	True	3	8.6%
	False	32	91.4%

Table 8b

Post-Training General Knowledge Item Frequencies

		Frequency	Percent
If a patient requests Hormone Replacement Therapy (HRT) from a primary care provider, the PCP can prescribe it.	True	22	91.7%
	False	0	
	Missing	4	
If a patient requests HRT from a PCP, the PCP needs to refer the patient to an endocrinologist.	True	0	
	False	24	100%
All female-to-male (FTM) patients will want phalloplasty someday.	True	0	
	False	24	100.0%
All male-to-female (MTF) patients will want chest surgery someday.	True	0	
	False	24	100%
Transgender male patients never need pap smears.	True	0	
	False	24	100%
Transgender female patients never need a prostate exam.	True	0	
	False	24	100%
Transgender male patients cannot get pregnant.	True	1	4.2%
	False	24	95.8%

At baseline, competency scores from the resident group were as follows and are further described in Table 9a, *r*=22, *M*=33.29(*SD*=5.96). At post, competency scores were as follows and are further described in Table 9b, *r*=31, *M*=37.33(*SD*=8.00). Descriptive data comparisons between baseline and post groups for the subjective competency scale are described in Table 10. ANOVA analysis indicated no significant differences in mean in the competency scale across residents at the three clinics (Table 11).

Table 9a.

Baseline Descriptive Statistics of Attitude Scale and Competency Scale Within Groups

	N	Range	Minimum	Maximum	Mean		Std. Deviation
	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic
Attitudes	34	15.00	25.00	40.00	32.7647	.80557	4.69725
Competency	34	22.00	24.00	46.00	33.2941	1.02250	5.96215
Valid N (listwise)	33						

Table 9b

Post Descriptive Statistics of Attitude Scale and Competency Scale Within Groups

	N	Range	Minimum	Maximum	Mean	Std. Error	Std. Deviation
Competency	24	31.00	18.00	49.00	37.3333	1.63373	8.00362
Attitudes	22	13.00	27.00	40.00	34.7273	1.00039	4.69226
Valid N (listwise)	22						

Table 10

Descriptive Statistics within Groups

		N	Mean	Std. Deviation	Std. Error	95% CI		Min	Max
						Lower Bound	Upper Bound		
Attitude Scale	Baseline	34	32.7647	4.69725	.80557	31.1258	34.4037	25.00	40.00
	Post	22	34.7273	4.69226	1.00039	32.6468	36.8077	27.00	40.00
	Total	56	33.5357	4.75190	.63500	32.2631	34.8083	25.00	40.00
Competency Scale	Baseline	34	33.2941	5.96215	1.02250	31.2138	35.3744	24.00	46.00
	Post	24	37.3333	8.00362	1.63373	33.9537	40.7130	18.00	49.00
	Total	58	34.9655	7.10316	.93269	33.0978	36.8332	18.00	49.00

Table 11

Welch's t-test Between Groups (Post and Baseline)

		Sum of Squares	df	Mean Square	F	Sig.
Attitude Scale	Between Groups	51.447	1	51.447	2.334	.132
	Within Groups	1190.481	54	22.046		
	Total	1241.929	55			
Competency Scale	Between Groups	229.539	1	229.539	4.857	.032
	Within Groups	2646.392	56	47.257		
	Total	2875.931	57			

Awareness

A ceiling effect was detected at baseline regarding awareness of AMA guidelines (Tables 12a and 12b). At baseline, residents indicated varying degrees of awareness of patient experiences in South Central Appalachia that are fully described in Table 13a. Of note, 34.3% responded neutrally to whether patients are mostly well-treated by office staff in the region, but 65.7% of residents indicated that they agreed that trans patients are being misgendered by office staff, and 40% of residents indicated a neutral response to if clinics are using chosen names versus legal names. Further, 62.9% of residents indicated that they agreed that patients are often misgendered by direct medical care staff. There were several other inconsistencies in responses to this measure at baseline. For example, 62.9% of residents indicated that there is inclusive, LGBTQ+, signage and materials in the clinics in South Central Appalachia, which compared to TransACCESS data, is not correct. Additionally, 62.9% of residents indicated that patients do not feel their care is impacted by their providers' attitudes towards their gender identity. Residents were presented with the TransACCESS data that mapped onto this measure during the training implementation. These data were collected from trans people in South Central Appalachia who had interacted with healthcare in the region over the past year. Post-implementation measurement results are described in detail in Table 13b; the exposure to regional experiences of trans people seemed to slightly alter the responses at post. Of note, 41.7% of residents indicated that patients in the region do feel their care is impacted by provider attitudes towards gender identity, and 41.7% of residents indicated there is not LGBTQ+ inclusive signage and materials in clinics in South Central Appalachia.

Table 12a

Baseline AMA Guidelines Awareness Items Frequencies

Item		Frequency	Percent
Displaying brochures and educational materials about trans health concerns in my medical practice	Has been shown in research to promote inclusivity and safety for my patients	30	85.7%
	Has no effect on patient satisfaction	3	8.6%
	May be upsetting to staff who do not support transgender patient	1	2.9%
Updating the clinic's New Patient Intake Form to include more gender affirming language is not necessary and not recommended by the AMA	True	2	5.7%
	False	33	94.3%
Providers should be held to effective communication policies that aim to create an inclusive environment for transgender patients	True	34	97.1%
	False	1	2.9%
It is up the provider to not discriminate against transgender patients. The medical clinic is not responsible for making policies regarding provider and staff behavior.	True	9	25.7%
	False	26	74.3%
If a provider is not interested in learning about basic familiarity with transgender patient needs in a medical	True	9	25.7%
	False	26	74.3%

setting, they do not need to,
per the AMA guidelines.

Table 12b

Post AMA Guidelines Awareness Items Frequencies

Item		Frequency	Percent
Displaying brochures and educational materials about trans health concerns in my medical practice	Has been shown in research to promote inclusivity and safety for my patients	22	91.7%
	Has no effect on patient satisfaction	1	4.2%
	May be upsetting to staff who do not support transgender patient	1	4.2%
Updating the clinic's New Patient Intake Form to include more gender affirming language is not necessary and not recommended by the AMA	True	4	16.7%
	False	20	83.3%
Providers should be held to effective communication policies that aim to create an inclusive environment for transgender patients	True	23	95.8%
	False	1	4.2%
It is up the provider to not discriminate against transgender patients. The medical clinic is not responsible for making policies regarding	True	3	12.5%
	False	21	87.5%

provider and staff behavior.			
If a provider is not interested in learning about basic familiarity with transgender patient needs in a medical setting, they do not need to, per the AMA guidelines.	True	5	20.8%
	False	19	79.2%

Table 13a

Baseline Awareness of Patient Experiences in Appalachian Healthcare Item Frequencies

		Frequency	Percentage
Transgender patients in Northeast Tennessee are mostly well treated by office staff	Strongly Disagree	1	2.9%
	Disagree	10	28.6%
	Neutral	12	34.3%
	Agree	8	22.9%
	Strongly Agree	4	11.4%
Transgender patients are often misgendered (referred to by a gender other than the one they identity as) by front desk staff in medical clinics in Northeast Tennessee	Strongly Disagree	0	0
	Disagree	1	2.9%
	Neutral	6	17.1%
	Agree	23	65.7%
	Strongly Agree	5	14.3%
Because many clinics in Northeast Tennessee follow AMA guidelines for inclusive intake paperwork, transgender patients in are not being called their legal /birth names (as opposed to their	Strongly Disagree	1	2.9%
	Disagree	8	22.9%

chosen/preferred names) when they visit the clinics.			
	Neutral	14	40.0%
	Agree	10	28.6%
	Strongly Agree	2	5.7%
Transgender patients are often misgendered by direct care medical providers in Northeast Tennessee region	Strongly Disagree	1	2.9%
	Disagree	1	2.9%
	Neutral	7	20.0%
	Agree	22	62.9%
	Strongly Agree	4	11.4%
There is inclusive LGBTQ+ signage in the clinics in Northeast Tennessee	Strongly Disagree	1	2.9%
	Disagree	1	2.9%
	Neutral	7	20.0%
	Agree	22	62.9%
	Strongly Agree	4	11.4%
There are inclusive LGBTQ+ materials in the waiting areas clinics in Northeast Tennessee.	Strongly Disagree	1	2.9%
	Disagree	1	2.9%
	Neutral	7	20.0%
	Agree	22	62.9%
	Strongly Agree	4	11.4%
Transgender patients in this region feel that their medical care is not impacted by provider attitudes towards their identities.	Strongly Disagree	1	2.9%
	Disagree	1	2.9%
	Neutral	7	20.0%
	Agree	22	62.9%
	Strongly Agree	4	11.4%

Table 13b

Post Awareness of Patient Experiences in Appalachian Healthcare Item Frequencies

Awareness of Patient Experiences in Appalachian Healthcare Item Frequencies		Frequency	Percent
Transgender patients in Northeast Tennessee are mostly well treated by office staff	Strongly Disagree	0	
	Disagree	8	33.3%
	Neutral	9	37.5%
	Agree	7	29.2%
	Strongly Agree	0	
Transgender patients are often misgendered (referred to by a gender other than the one they identity as) by front desk staff in medical clinics in Northeast Tennessee	Strongly Disagree	0	0
	Disagree	1	4.2%
	Neutral	6	25.0%
	Agree	10	41.7%
	Strongly Agree	7	29.2%
Because many clinics in Northeast Tennessee follow AMA guidelines for inclusive intake paperwork, transgender patients in are not being called their legal /birth names (as opposed to their chosen/preferred names) when they visit the clinics.	Strongly Disagree	0	0
	Disagree	6	25.0%
	Neutral	11	45.8%
	Agree	7	29.2%
	Strongly Agree	0	0
Transgender patients are often misgendered by direct care medical providers in Northeast Tennessee region	Strongly Disagree	0	0
	Disagree	1	4.2%
	Neutral	11	45.8%
	Agree	9	37.5%

	Strongly Agree	3	12.5%
There is inclusive LGBTQ+ signage in the clinics in Northeast Tennessee	Strongly Disagree	0	0
	Disagree	10	41.7%
	Neutral	10	41.7%
	Agree	4	16.7%
	Strongly Agree	0	0
There are inclusive LGBTQ+ materials in the waiting areas clinics in Northeast Tennessee.	Strongly Disagree	0	0
	Disagree	10	41.7%
	Neutral	10	41.7%
	Agree	4	16.7%
	Strongly Agree	0	0
Transgender patients in this region feel that their medical care is not impacted by provider attitudes towards their identities.	Strongly Disagree	6	25.0%
	Disagree	10	41.7%
	Neutral	6	25.0%
	Agree	1	4.2%
	Strongly Agree	1	4.2%

Attitude

Scores from the resident groups at baseline and post were similar (baseline *M*=32.76 and post *M*=34.72) and not significantly different. Scores are further described in Tables 9a and 9b. Baseline and post descriptive data of this measure are described in detail in Table 10. ANOVA test of this measure indicated no significant mean differences between baseline and post scores, and results are depicted in Table 11.

Exploratory Analyses

Due to unanticipated baseline differences between clinic sites, additional exploratory analyses were conducted to examine the mean differences in self-assessed competency scores.

Baseline mean differences in the competency measure between clinic sites (Table 3) were further examined using ANOVA test for mean differences (Table 4). There was a significant difference between groups, *F*(2)=9.711, *p*=.001 with a moderate effect size (*d*=.385). A test for homogeneity of variance was non-significant (*p*=.288). Tukey post-hoc test analysis indicated significant differences between Clinics 1 and 2 (*M*=8.36, *p*<.001). The awareness measure evidenced no significant mean differences at baseline (Table 3).

Sustainability, Accessibility, and Usefulness

Residents responded to questions within the post-training survey regarding value, satisfaction, and helpfulness of the training modules. Each question provided a Likert scale of response options such as "This training was not useful at all to me" to "This training was very useful to me." Residents responded with a mean response of approximately 4 out of 5 to all three questions (value of training, satisfaction with training, and usefulness of training), with the minimum response being 2 or "unsatisfied/Not very valuable/not very useful". Descriptive data from these responses are further depicted in Table 14.

Table 14

Descriptive Statistics of Resident Experiences of Training

Variable	N	Range	Min	Max	Mean	Std Deviation
Satisfaction	23	2	3	5	4.17	0.717
Usefulness	23	3	2	5	4.13	0.869
Value	23	2	3	5	4.22	0.736
Missing	37					
Valid N	23					

Sustainability was also qualitatively assessed by feedback from non-resident stakeholders, which indicated that the material was transferrable to a new trainer to be implemented in subsequent residency cohorts. This outcome was one of the major goals for this project. Accessibility was qualitatively assessed through attendance and engagement outcomes. Across all three clinics, 34 residents attended the first module of the training and 31 residents attending the second module out of a total of 60 residents within the program. During both training modules, Clinics 1 and 3 had the highest attendance. Clinic 1 was the only clinic that received an entirely virtually-delivered training while Clinic 3 was the only clinic without behavioral health services integrated into the medical team. While Clinic 1 did have a higher attendance rate despite the virtual delivery, it also had the least amount of resident engagement with very little resident participation. Clinics 2 and 3 had the most resident engagement, with Clinic 3 being the most engaged and interactive group across both training modules. Clinic 3 engagement included collaborative and interprofessional discussion of ethical issues and involvement in building the resource guide.

Chapter 4. Discussion

The current study aimed to develop, implement, and evaluate an educational training for medical residents in South Central Appalachia through a six-phase, mixed methods community-based participatory research project. This project had two main goals: to design a sustainable, accessible, and useful medical resident training on competent trans healthcare, and to quantitively assess changes in competency through increased awareness of AMA guidelines and patient experiences, general knowledge of trans health needs, and positive attitudes towards treating trans patients. It was hypothesized that following the conclusion of the developed training, residents would exhibit increased competency in treating trans patients in the region, increased awareness of AMA guidelines and patient experiences, increased general knowledge related to trans health needs, and an overall positive attitude shift towards treating trans patients. Previous studies have indicated that, on average, medical providers do not receive adequate training on and exposure to trans health needs and literature on trans healthcare competency. Such research has demonstrated that more training opportunities for providers leads to increased provider knowledge and comfort treating trans patients in a primary care setting. Ultimately, enhanced training leads to higher care quality and fewer discriminatory experiences for trans patient populations.

The summary of the systematic literature review conducted in the beginning of this project indicated a national deficit in competency trainings related to transgender healthcare. However, there is also literature suggesting differences in general medical education due to resource competition (Brosnan, 2010). If resources are part of the cause of the national deficit of trans healthcare education, precious resource utilization needs to culminate in sustainable, accessible, and useful content. Designing sustainable, accessible, and useful medical education is challenging in optimal circumstances but designing during a global pandemic, when physical health was suddenly not guaranteed, presented unique barriers. It was imperative to this project to include resident and community member feedback in the content creation of this project as it allowed the modules to be customized to the community's and residents' unique and evolving needs. This will allow for the future implementation of these modules beyond the timeline of this project, and it allowed each resident to have their unique practice needs met through both the living resource guide and the training modules themselves.

Further, stakeholder and specialist input on the pedagogy of this project was critical to accessibility due to physical space constraints with social distancing guidelines. While the globe as whole struggled to manage the health system strain during COVID-19, Appalachia experienced the same strain, though with its own pre-existing condition. As previously mentioned, Appalachia is a vastly under-resourced region with health risks that outnumber the national averages. This training needed to meet the needs of the trans community, the needs of medical residents, and adhere to social distancing guidelines in order to mitigate the impact of COVID-19 as much as possible. Without stakeholder input on how to meet these seemingly conflicting goals, this training would not have been successful. While it emerged largely as a response to COVID-19, virtual medical education will not become obsolete post-pandemic. This training highlights the value in engaging virtual curricula, as it allows optimal accessibility for rural clinics and for residents who may be out on other rotations. Virtual curricula can also allow for longevity of content, as highlighted by the resource guide, an outcome that is important to consider for under-resourced clinics.

Lastly, integrated care is the new frontier of both medicine and health sciences. Conducting psychological research that leverages community participation allows for translation of integrated clinical practices to integrated pedagogical and psychological research. This project was a collaborative effort and stimulated interdisciplinary conversations at all time points of the project and with all roles who were involved. This was a critical and important, yet unintentional, outcome of this project. During the time of this project, multiple anti-trans political actions were underway, including Florida's "Don't Say Gay" bill, Bill SB-1646 in Texas, which upholds providing trans youth healthcare as reportable child abuse, and Tennessee's bill that passed in May of 2021 prohibiting medical providers from prescribing HRT (including puberty blockers) to trans youth under the age of 13. Having interdisciplinary discussions rooted in scientific evidence while these laws were being discussed and highly politized allowed for real-time problem solving and differing ideas to be shared. As such, medical education that includes voices from other disciplines, when applicable, furthers the future of integrated care and provides comprehensive training that benefits patient communities.

While the first goal of this project was to design and implement a training, the second goal aimed to measure changes in competency and attitudes in providers. Baseline mean scores in subjective competency and attitudes had mean scores indicating almost perfect subjective competency and attitudes towards treating trans patients. Therefore, any changes in subjective competency and attitudes from pre-training to post-training were minimal and likely impacted by baseline ceiling effects that left little room for improvement at post-training. This is an interesting finding despite deviation from the hypothesis, as it indicates a self-reported level of competency that is inconsistent with the paucity of prior training reportedly received. Similar to the literature on national trans healthcare training trends, residents in this study reported previous hours of training to be three hours or fewer, which is consistent with what is reported across the U.S in other studies (Hughto et al., 2015; Sawning et al., 2017). Post medical school, approximately one-quarter of residents reported receiving formal, clinically-oriented training. The majority of residents also indicated that they did not seek outside, organized, opportunities for training such as conferences or webinars post-graduation. This is in contrast to their relatively high subjective self-reports of their own competency in this area.

These results reflect what is reported nationally with regard to the nature and amount of trans healthcare training medical professionals receive but also indicate a problematic culture within medical training that inflates self-awareness of specific competencies and likely maintains discriminatory treatment of trans patients in healthcare settings. Residents have little formal training and little exposure to trans patients in three years of residency yet indicated moderate levels of subjective competency, with a mean score of 37.33 out of a maximum of 46, prior to receiving the training implemented for this study. This dissonant expression of subjective competency lacks any objective support for it. It is likely that the ceiling effects found for both competency and attitude scales in this study are an artifact of this dissonance rather than an actual measure of moderate competency prior to the training. One way to potentially control the phenomenon of dissonance in future research would be to examine if residents respond with similar dissonance to other medically-related areas adjacent to their expertise, such as how primary care residents might respond to questions related to cardio-thoracic surgery. Another example may be a pre-training “quiz” on included topics within the curriculum to more accurately assess knowledge and to help mitigate this effect when compared to a post-training “quiz”. This dissonance is also reflected within the ceiling effect at baseline in the AMA guidelines measure, where majority of residents responded “false” to the item ‘If a provider is not interested in learning about basic familiarity with trans patient needs in a medical setting, they do not need to, per the AMA guidelines.’ Thus, while residents indicated an awareness that the AMA asks practitioners to learn about trans health needs, their responses regarding their own training and need for acquired competency are inconsistent with this. However, it is also possible that the residents felt that three hours of lecture during medical school was sufficient to attain competence.

Residents were given the opportunity to qualitatively indicate any training outside of medical school they have received, and many of the respondents indicated self-driven activities that were directly related to providing better care to their patients (i.e., reading articles on prescribing HRT, attending university club talks, and self-guided readings). However, as indicated in Table 6, this was a small handful of proactive residents. This suggests that providers desire more training and improvement of their practice. At the residency level of their career, the proactive respondents are spending time trying to find resources to provide good care, and while this is a testament to those specific residents' dedication to the art of medicine, it also demonstrates a deficit on the part of their training program, especially considering that one of the clinics operates one of the only HRT clinics in the region. This places an immense burden on these residents. Ultimately, the juxtaposition of dissonant residents and dedicated residents who are working harder to seek additional knowledge impacts patient experiences with these clinics.

Another interesting finding from the current study was that when asked about their perceptions of patient experiences in this region at baseline, residents evidenced contradictory responses across items. For example, over one-quarter of residents selected "neutral" when asked if patients are well-treated by office staff, but then majority indicated feeling as though office staff misgender patients in this region. This seems to suggest that residents are not aware that misgendering trans people is discriminatory. Further, residents agreed that patients are misgendered by direct care providers, but the majority responded that patients do not feel their care is impacted by provider attitudes toward patient identity. This is an inconsistent response pattern that raises the question of who defines quality care and also implies that being referred to by the incorrect gender is not considered apart of quality care. However, while this did change post-training, as residents presented with data summarizing patient experiences in South Central Appalachia were able to make gains in their awareness, this change was not statistically significant.

Interesting, between-site differences were noted. At baseline, there was a significant difference in self-evaluated competency between clinic sites. It also further highlights a discrepancy in post-graduation medical training; as residents were likely trained in a range of medical school environments but share residency training programming, their self-assessed level of competence is influenced by not only their initial training but their continued training post-graduation. That their assessments differed within a shared post-graduate environment may reflect differences in operations and opportunities across sites. Two of the three sites are integrated clinics with behavioral health service providers on staff, and all three sites have behavioral health-focused didactics. All three sites have trans patient populations, but only one has an HRT clinic. All three clinics also support residents if they refuse to treat trans patients for gender-specific concerns (including HRT). Clinic 1 had a significantly higher competency score at baseline than the other two. Clinic 1 does house the HRT clinic, so this may be because Clinic 1 residents chose that site for their residency and may be more comfortable treating trans patients, or perhaps more interested and open to such experiences. However, per the AMA guidelines and the recent reversal to the Executive Order on Combating Race and Sex Stereotyping and M20-34l, all three clinics should be providing adequate and cohesive training to the residents in the program. This is especially important when considering the Appalachian context of the residency program. While all three clinics are proximal to each other, each site serves patients from surrounding rural counties. Patients sometimes drive great distances to the clinics, and thus the reach of the residency program is vaster than the three communities in which they are immediately located. It is imperative to patients who live in these rural areas to be able to access competent care, and if only one clinic in the program is offering competent care, this may make the difference between going without or receiving care at all.

Limitations

This study has several limitations. First, the sample size is small and unequal at baseline and post. While this is not ideal, it is a reality of community-based interventions in rural areas but also a reality of training medical residents during and even prior to COVID-19. Residents are overworked, often cannot attend didactics, and may not see value in trainings that may not directly interest them. Given the degree to which many felt they had already achieved substantial competence in trans healthcare, this latter factor may have been particularly relevant. The training was informed by stakeholders to try to address these concerns and to recruit as many attendees as possible. However, many residents simply did not attend Relatedly, it would be ideal to be able to match residents' responses at both baseline and post, and this study did not do so. However, due to the size of the residency program, doing this would potentially compromise anonymity and therefore was not pursued. This impacts the interpretation of ANOVA results and limits the assumptions that can be made from them.

Second, this study was exploratory in nature and based on the needs of a specific community of patients and providers. While some quantitative information of interest was gathered from this project, the primary purpose of the project was to inform future efforts to develop and assess trans healthcare training intervention. Therefore, results and specific elements of the training modules may not be generalizable to other populations or regions. However, the procedural aspects of this study, such as the model of content development and some elements of outcome measurement in a primary care setting could be useful in other settings.

Third, this study did not consider control for baseline ceiling effects or other indicators of limited variability, as this was unanticipated and was not evidenced in similar studies across the relevant literature. Future endeavors would benefit from pre- and post-testing that utilized knowledge-based competency assessments rather than only self-assessed competence.

Finally, the COVID-10 pandemic allowed for the development of this training to ensure accessibility in clinic environments that required fully virtual delivery, an aspect that will be useful post-pandemic in rural communities. However, while clinic operations continued as usual during COVID-19, it is possible that the general sense of burn out among providers may have influenced to results of this study.

Conclusion

Trans healthcare literature has identified training gaps that create competency deficits for providers as they move into advanced professional practice. Trans populations have reported in previous literature that this leads to care avoidance, experiences of discrimination, and poorer health outcomes. This study aimed to develop a training specific for South Central Appalachian providers that was informed by trans people in the region and tailored specifically for regional providers based on stakeholder input. The resulting training, coupled with the resource guide provided to residents, may be an invaluable tool for the future medical providers in South Central Appalachia, a region that is medically and educationally under-resourced and experiences inflated intersectional discrimination within systemic and interpersonal levels (McGarvey et al., 2011). As previously noted, residency program directors in the Southeastern United States predominantly hold negative attitudes regarding the importance of trans health education (Dubin et al., 2018), which exacerbates existing social disparities in Southern Appalachia (McGarvey et al., 2011). Trans patients in South Central Appalachia thus experience intersectionality that exponentially multiplies barriers to receiving competent healthcare (Hughto et al., 2016). Providers in this study reported low levels of prior training in trans healthcare, which is consistent with prior empirical research. Further, this study highlights the potential for provider overconfidence in existing knowledge regarding trans healthcare as a contributing factor to discriminatory experiences in healthcare, a previously unmentioned aspect of the national training deficit's impact on care quality for trans patients. The study also highlighted differences between clinics within the same residency training program, suggesting additional influence of unit-level cultural attitudes and practices within a larger system. Continuing to implement trainings nationally to advance trans healthcare competency is an improvement to the larger healthcare system. Care avoidance due to fear can be a costly public health issue that can be assuaged by more provider trainings and in Appalachia, this is multiplied as Appalachia is historically burdened by poorer health outcomes compared to other regions in the United States (Benson et al., 2018; Hughto et al., 2016; McGarvey et al., 2011). With a recent rise in the call to action for psychological and medical communities to be more inclusivity focused, efforts in developing trainings to promote inclusion and improve provider competency could improve the wellness of trans Appalachians. Utilizing research models such as ALAR and the Kern model, trainings can be accessible to even the most remote clinics in rural areas and can be sustained through clear and clinic-focused materials. When research and program development can focus on the serving communities in which we live, tangible and experiential change can occur, even if improving patient care for just one person or improving competency for one provider.

References

Berenson, M. G., Gavzy, S. J., Cespedes, L., Gabrani, A., Davis, M., Ingram, K., & Sánchez, J. P. (2020). The Case of Sean Smith: A Three-Part Interactive Module on Transgender Health for Second-Year Medical Students. *MedEdPORTAL*, *16*, 10915.

Bidell, M. P. (2005). The Sexual Orientation Counselor Competency Scale: Assessing attitudes, skills, and knowledge of counselors working with lesbian, gay, and bisexual clients. *Counselor Education and Supervision*, *44*(4): 267-279.

Biener, L., & Abrams, D. B. (1991). The Contemplation Ladder: validation of a measure of readiness to consider smoking cessation. *Health Psychology*, *10*(5), 360.

Brosnan, C. (2010). Making sense of differences between medical schools through Bourdieu's concept of 'field'. Medical education, *44*(7), 645-652.

Crisp, C. (2006). The gay affirmative practice scale (GAP): A new measure for assessing cultural competence with gay and lesbian clients. *Social Work*, *51*(2), 115-126.

Delacre, M., Lakens, D., & Leys, C. (2017). Why Psychologists Should by Default Use Welch's *t*-test Instead of Student's *t*-test. *International Review of Social Psychology*, *30*(1).

Dubin, S. N., Nolan, I. T., Streed Jr, C. G., Greene, R. E., Radix, A. E., & Morrison, S. D. (2018). Transgender health care: improving medical students' and residents' training and awareness. *Advances in Medical Education and Practice*, *9*, 377.

Eckstrand, K. L., & Potter, J. (2016). Affirmative and responsible health care for people with nonconforming gender identities and expressions. *AMA journal of ethics*, *18*(11), 1107-1118.

Frankel, R., & Beckman, H. (2004). The physician-patient relationship. In R. G. Frank, S. H. McDaniel, J. H. Bray, & M. Heldring, Primary care psychology (p. 45–61). American Psychological Association. https://doi.org/10.1037/10651-003

Frost, D. M., Lehavot, K., & Meyer, I. H. (2015). Minority stress and physical health among sexual minority individuals. *Journal of Behavioral Medicine*, *38*(1), 1-8.

Felsenstein, D. R. (2018). Enhancing lesbian, gay, bisexual, and transgender cultural competence in a Midwestern primary care clinic setting. *Journal for Nurses in Professional Development, 34*(3), 142.

Grant, J. M., Motter, L. A., & Tanis, J. (2011). Injustice at every turn: A report of the national transgender discrimination survey.

Hanssmann, C., Morrison, D., & Russian, E. (2008). Talking, gawking, or getting it done: Provider trainings to increase cultural and clinical competence for transgender and gender-nonconforming patients and clients. *Sexuality Research & Social Policy*, 5(1), 5.

Hatzenbuehler, M. L., & Pachankis, J. E. (2016). Stigma and minority stress as social determinants of health among lesbian, gay, bisexual, and transgender youth: research evidence and clinical implications. *Pediatric Clinics*, *63*(6), 985-997.

Hendricks, M. L., & Testa, R. J. (2012). A conceptual framework for clinical work with transgender and gender nonconforming clients: An adaptation of the Minority Stress Model. *Professional Psychology: Research and Practice*, *43*(5), 460–467. https://doi.org/10.1037/a0029597

Hughto, J. M. W., Reisner, S. L., & Pachankis, J. E. (2015). Transgender stigma and health: A critical review of stigma determinants, mechanisms, and interventions. *Social Science & Medicine, 147*, 222-231.

Hughto, J. M., Murchison, G. R., Clark, K., Pachankis, J. E., & Reisner, S. L. (2016). Geographic and individual differences in healthcare access for US transgender adults: a multilevel analysis. LGBT health, *3*(6), 424-433.

Huttlinger, K., Schaller-Ayers, J., & Lawson, T. (2004). Health care in Appalachia: a population-based approach. *Public Health Nursing*, *21*(2), 103-110.

James, S., Herman, J., Rankin, S., Keisling, M., Mottet, L., & Anafi, M. A. (2016). The report of the 2015 US transgender survey.

Johnson, A. H., Hill, I., Beach-Ferrara, J., Rogers, B. A., & Bradford, A. (2020). Common barriers to healthcare for transgender people in the US Southeast. *International Journal of Transgender Health*, *21*(1), 70-78.

Kattari, S. K., Bakko, M., Hecht, H. K., & Kinney, M. K. (2020). Intersecting experiences of healthcare denials among transgender and nonbinary patients. American Journal of Preventive Medicine. *58*(4), 506-513.

Thomas, P. A., Kern, D. E., Hughes, M. T., & Chen, B. Y., (2016). Curriculum development for medical education: a six-step approach. JHU Press.

Keuroghlian, A. S., Ard, K. L., & Makadon, H. J. (2017). Advancing health equity for lesbian, gay, bisexual and transgender (LGBT) people through sexual health education and LGBT-affirming health care environments. *Sexual Health*, *14*(1), 119-122.

Korpaisarn, S., & Safer, J. D. (2018). Gaps in transgender medical education among healthcare providers: A major barrier to care for transgender persons. *Reviews in Endocrine and Metabolic Disorders, 19*(3), 271-275.

Kosenko, K., Rintamaki, L., Raney, S., & Maness, K. (2013). Transgender patient perceptions of stigma in health care contexts. *Medical Care*, 819-822.

Lelutiu-Weinberger, C., Pollard-Thomas, P., Pagano, W., Levitt, N., Lopez, E. I., Golub, S. A., & Radix, A. E. (2016). Implementation and evaluation of a pilot training to improve transgender competency among medical staff in an urban clinic. *Transgender Health*, *1*(1), 45-53.

Marshall, S. A., Allison, M. K., Stewart, M. K., Thompson, N. D., & Archie, D. S., 2018. Highest priority health and health care concerns of transgender and nonbinary individuals in a Southern State. *Transgender Health, 3*(1), 190-200.

McClain, Z., Hawkins, L. A., & Yehia, B. R. (2016). Creating welcoming spaces for lesbian, gay, bisexual, and transgender (LGBT) patients: An evaluation of the health care environment. J*ournal of Homosexuality*, *63*(3), 387-393.

McGarvey, E. L., Leon-Verdin, M., Killos, L. F., Guterbock, T., & Cohn, W. F. (2011). Health disparities between Appalachian and non-Appalachian counties in Virginia USA. *Journal of Community Health, 36*(3), 348-356.

Meyer, I. H. (2003). Prejudice, social stress, and mental health in lesbian, gay, and bisexual populations: conceptual issues and research evidence. *Psychological bulletin*, *129*(5), 674.

Park, J. A., & Safer, J. D. (2018). Clinical exposure to transgender medicine improves students' preparedness above levels seen with Didactic teaching alone: a key addition to the Boston University model for teaching transgender healthcare. *Transgender Health*, *3*(1), 10-16.

Pham, M.T., Rajić, A., Greig, J.D., Sargeant, J.M., Papadopoulos, A., McEwen, S.A. (2014). A scoping review of scoping reviews: advancing the approach and enhancing the consistency. *Res Synth Methods*. *5*(4),371–385.

Pieh-Holder, K. L., Goldschmidt, C., & Young, P. (2012). Qualitative needs assessment: healthcare experiences of underserved populations in Montgomery County, Virginia, USA. *Rural and Remote Health, 12*(2045).

Poteat, T., German, D., & Kerrigan, D. (2013). Managing uncertainty: a grounded theory of stigma in transgender health care encounters. *Social Science & Medicine*, *84*, 22-29.

Radix, A. E., Lelutiu-Weinberger, C., & Gamarel, K. E. (2014). Satisfaction and healthcare utilization of transgender and gender non-conforming individuals in NYC: a community-based participatory study. *LGBT Health*, *1*(4), 302-308.

Rahman, M., Li, D. H., & Moskowitz, D. A. (2019). Comparing the healthcare utilization and engagement in a sample of transgender and cisgender bisexual+ persons. *Archives of Sexual Behavior*, *48*(1), 255-260.

Redfern, J. S., & Sinclair, B. (2014). Improving health care encounters and communication with transgender patients. *Journal of Communication in Healthcare*, *7*(1), 25-40.

Safer, J. D., Coleman, E., Feldman, J., Garofalo, R., Hembree, W., Radix, A., & Sevelius, J. (2016). Barriers to health care for transgender individuals. *Current Opinion in Endocrinology, Diabetes, and Obesity*, *23*(2), 168.

Sanchez, N. F., Rabatin, J., (2006). Medical students' ability to care for lesbian, gay, bisexual, and LGBT patients. *Family Medicine*. *38*(1): 21.

Sawning, S., Steinbock, S., Croley, R., Combs, R., Shaw, A., & Ganzel, T. (2017). A first step in addressing medical education Curriculum gaps in lesbian-, gay-, bisexual-, and transgender-related content: The University of Louisville Lesbian, Gay, Bisexual, and Transgender Health Certificate Program. *Education for Health*, *30*(2), 108.

Sequeira, G. M., Chakraborti, C., & Panunti, B. A. (2012). Integrating lesbian, gay, bisexual, and transgender (LGBT) content into undergraduate medical school curricula: a qualitative study. *Ochsner Journal, 12*(4), 379-382.

Snelgrove, J. W., Jasudavisius, A. M., Rowe, B. W., Head, E. M., & Bauer, G. R. (2012). “Completely out-at-sea” with “two-gender medicine”: A qualitative analysis of physician-side barriers to providing healthcare for transgender patients. *BMC Health Services Research*, *12*(1), 110.

Stone, A. L. (2018). The geography of research on LGBTQ life: Why sociologists should study the South, rural queers, and ordinary cities. *Sociology Compass, 12*(11), e12638

Thomas, D. D., & Safer, J. D. (2015). A simple intervention raised resident-physician willingness to assist transgender patients seeking hormone therapy. *Endocrine Practice*, *21*(10), 1134-1142.

Trans + Gender Identity. (2020, April 14). Retrieved June 29, 2020, from https://www.thetrevorproject.org/trvr_support_center/trans-gender-identity/

Vanderleest, J. G., & Galper, C. Q. (2009). Improving the health of transgender people: Transgender medical education in Arizona. *Journal of the Association of Nurses in AIDS Care*, *20*(5), 411-416.

Warner, L. R. (2008). A best practices guide to intersectional approaches in psychological research. *Sex Roles, 59*(5-6), 454-463

White, W., Brenman, S., Paradis, E., Goldsmith, S., Lunn, M. R., Obedin-Maliver, J., Stewart, L., Tran, E., Wells, M., Chamberlain, L. J., Fetterman, D.M., & Garcia, G., (2015). Lesbian, gay, bisexual, and transgender patient care: medical students' preparedness and comfort. *Teaching and Learning in Medicine*, 27:3, 254-263, DOI: 10.1080/10401334.2015.1044656

Wylie, K., Knudson, G., Khan, S. I., Bonierbale, M., Watanyusakul, S., & Baral, S. (2016). Serving transgender people: clinical care considerations and service delivery models in transgender health. *The Lancet*, *388*(10042), 401-411.

Zuber-Skerritt, O. (2002). A model for designing action learning and action research programs. *The Learning Organization, 9*(4), 143-149.

APPENDICES

Appendix A: Literature Matrix

Citation	Methodology	Summary of Findings	Theme
Poteat, T., German, D., & Kerrigan, D. (2013). Managing uncertainty: a grounded theory of stigma in transgender health care encounters. Social science & medicine, 84, 22-29.	Grounded Theory Qualitative Interviews	The findings of this study suggest that interpersonal stigma also functions to reinforce medical power and authority in the face of provider uncertainty. Within functional theories of stigma, it is important to acknowledge the role of power and to understand how stigmatizing attitudes function to maintain systems of inequality that contribute to health disparities.	Barriers to Care
Safer, J. D., Coleman, E., Feldman, J., Garofalo, R., Hembree, W., Radix, A., & Sevelius, J. (2016). Barriers to health care for transgender individuals. Current opinion in endocrinology, diabetes, and obesity, 23(2), 168.	Systematic Review	The biggest barrier to health care reported by transgender individuals is lack of access due to lack of providers who are sufficiently knowledgeable on the topic. Other barriers include: financial barriers, discrimination, lack of cultural competence by providers, health systems barriers and socioeconomic barriers. National research priorities should include rigorous determination of the capacity of the United States health care system to provide adequate care for transgender individuals. Studies should determine knowledge and biases of the medical work force across the spectrum of medical training with regard to transgender medical care; adequacy of sufficient providers for the care required, larger social structural barriers and status of a framework to pay for appropriate care. As well, studies should propose and validate potential solutions to address identified gaps.	Barriers to Care
Kattari, S. K., Atteberry-Ash, B., Kinney, M. K., Walls, N. E., & Kattari, L. (2019). One size does not fit all: differential transgender health experiences. Social Work in Health Care, 58(9), 899-917.	Logistic regressions	Using a statewide sample of TNB individuals (N = 417), analyses include descriptive statistics and logistic regressions predicting delayed care due to fear of discrimination and having any medical intervention to understand the importance of transgender-inclusive care and other experiences across identities. Findings indicate differential experiences across gender identity, sexual orientation, and age. Access to a trans-inclusive primary care provider was one of the strongest indicators both for not delaying care due to fear of discrimination and having had a medical	Barriers to Care

		intervention. Providers should be provided with more nuanced training about being culturally responsive and aware of differences across sexual orientation within the TNB community.	
Romanelli, M., & Lindsey, M. A. (2020). Patterns of Healthcare Discrimination Among Transgender Help-Seekers. American journal of preventive medicine.	Latent Class analysis	The final sample included 23,541 respondents. A 3-class model fit best: Class 1 experienced overt discrimination and interfaced with providers with limited trans-competence; Class 2 did not experience healthcare discrimination or report issues related to providers' trans-competence; and Class 3 did not experience discrimination but had providers with low trans-competence. Trans men and respondents who were out as trans to their providers and reported psychological distress, suicidal thoughts, and disabilities were more likely to be members of Class 1 or 3 than Class 2. Predictors of the latent classes indicated that transgender help-seekers holding an additional marginalized identity may be at higher risk for healthcare discrimination or care from providers with limited trans-competence. Targeted engagement and education interventions might improve these transgender help-seekers' access to and connections with care.	Barriers to Care
Kattari, S. K., Bakko, M., Hecht, H. K., & Kinney, M. K. (2020). Intersecting Experiences of Healthcare Denials Among Transgender and Nonbinary Patients. American Journal of Preventive Medicine.	Multivariate Logistic Regression	Almost 8% of the participants had been denied trans-specific health care, and >3% had been refused general health care. Transgender (compared with nonbinary), older, biracial, or multiracial, and lower-income participants, as well as those with less than a high school diploma and those with disabilities, were significantly more likely to experience refusal of care in general or trans-specific healthcare settings. There is a need for better training of healthcare providers to be inclusive and reduce denial rates of their transgender and nonbinary patients. However, it is also clear that current rates of denial must be considered through a whole-person lens, considering the experience of concurrent oppressed identities and recognizing the increased risk those with multiple marginalized identities experience in being denied needed health care.	Barriers to Care

McPhail, D., Rountree-James, M., & Whetter, I. (2016). Addressing gaps in physician knowledge regarding transgender health and healthcare through medical education. Canadian medical education journal, 7(2), e70.	Qualitative	Qualitative study with 30 trans identified people and 11 physicians (N=41) in Winnipeg, Manitoba. Methods included semi-structured individual interviews and focus groups. Data were transcribed and analyzed with NVivo qualitative data software using iterative methods. An overwhelming finding of this study was a lack of physician knowledge, as reported both by trans people and by physicians, that resulted in a denial of trans-specific care and also impacted general care. Transphobia was also identified as a barrier to quality care by both trans people and physicians. Physicians were open to learning more about trans health and healthcare.The findings suggest a pressing need for better medical education that exposes students to basic skills in trans health so that they can become competent in providing care to trans people. This learning must take place alongside anti-transphobia education. Based on these findings, we suggest key recommendations at the close of the paper for providing quality trans health curriculum in medical education.	Barriers to Care
Hughto, J. M. W., Reisner, S. L., & Pachankis, J. E. (2015). Transgender stigma and health: A critical review of stigma determinants, mechanisms, and interventions. Social science & medicine, 147, 222-231.	Systematic Review	This review demonstrates that transgender stigma limits opportunities and access to resources in a number of critical domains (e.g., employment, healthcare), persistently affecting the physical and mental health of transgender people. The applied social ecological model employed here elucidates that transgender stigma operates at multiple levels (i.e., individual, interpersonal, structural) to impact health. Stigma prevention and coping interventions hold promise for reducing stigma and its adverse health-related effects in transgender populations. Additional research is needed to document the causal relationship between stigma and adverse health as well as the mediators and moderators of stigma in US transgender populations. Multilevel interventions to prevent stigma towards transgender people are warranted.	Barriers to Care/MSS
Warner, L. R. (2008). A best practices guide to intersectional approaches in psychological research. Sex roles, 59(5-6), 454-463.	Best Practices Guide	This paper serves as a “best practices guide” for researchers interested in applying intersectionality theory to psychological research. Intersectionality, the mutually constitutive relations among social identities, presents several issues to researchers interested in applying it to research. I highlight three central issues and provide guidelines for how to address them. First, I discuss the constraints in the number of identities that researchers are able to test in an empirical study, and highlight relevant decision rules. Second, I discuss when to focus on “master” identities (e.g., gender)	intersectionality

		versus “emergent” identities (i.e., White lesbian). Third, I argue that treating identity as a process situated within social structural contexts facilitates the research process. I end with a brief discussion of the implications for the study of intersectionality.	
Cole, E. R. (2009). Intersectionality and research in psychology. American psychologist, 64(3), 170.	Concept Paper	Feminist and critical race theories offer the concept of intersectionality to describe analytic approaches that simultaneously consider the meaning and consequences of multiple categories of identity, difference, and disadvantage. To understand how these categories depend on one another for meaning and are jointly associated with outcomes, reconceptualization of the meaning and significance of the categories is necessary. To accomplish this, the author presents 3 questions for psychologists to ask: Who is included within this category? What role does inequality play? Where are there similarities? The 1st question involves attending to diversity within social categories. The 2nd conceptualizes social categories as connoting hierarchies of privilege and power that structure social and material life. The 3rd looks for commonalities across categories commonly viewed as deeply different. The author concludes with a discussion of the implications and value of these 3 questions for each stage of the research process.	intersectionality
Redfern, J. S., & Sinclair, B. (2014). Improving health care encounters and communication with transgender patients. Journal of Communication in Healthcare, 7(1), 25-40.	Systematic review	This review examines communication and procedural barriers to transgender health care and suggests practical steps to help ameliorate disparities and unequal treatment. Publications addressing health disparities and communication and procedural barriers to health care of transgender persons were identified by a structured search of electronic databases. The most pertinent articles are reviewed and consolidated with the authors' collective experiences. To improve their interactions and communication with transgender persons, health care providers can take a variety of practical steps in several key areas: office environment, registration forms, initial interview and assessment, confidentiality, personnel training, awareness of and compliance with applicable antidiscrimination legislation, health insurance-related issues, and outreach and transgender health promotion. Enhancing patient satisfaction through culturally competent health	Intervention Considerations

		care, quality assurance, and patient feedback is critical to creating open lines of communication between practitioner and patient and fostering a favorable context for transgender patient care.	
Dubin, S. N., Nolan, I. T., Streed Jr, C. G., Greene, R. E., Radix, A. E., & Morrison, S. D. (2018). Transgender health care: improving medical students' and residents' training and awareness. Advances in medical education and practice, 9, 377.	Systematic Review	We conducted structured searches of five databases to identify literature related to medical education and transgender health. Of the 1272 papers reviewed, 119 papers were deemed relevant to predefined criteria, medical education, and transgender health topics. Transgender health has yet to gain widespread curricular exposure, but efforts toward incorporating transgender health into both undergraduate and graduate medical educations are nascent. There is no consensus on the exact educational interventions that should be used to address transgender health. Barriers to increased transgender health exposure include limited curricular time, lack of topic-specific competency among faculty, and underwhelming institutional support. All published interventions proved effective in improving attitudes, knowledge, and/or skills necessary to achieve clinical competency with transgender patients. Transgender populations experience health inequities in part due to the exclusion of transgender-specific health needs from medical school and residency curricula. Currently, transgender medical education is largely composed of one-time attitude and awareness-based interventions that show significant short-term improvements but suffer methodologically. Consensus in the existing literature supports educational efforts to shift toward pedagogical interventions that are longitudinally integrated and clinical skills based, and we include a series of recommendations to affirm and guide such an undertaking.	Intervention Considerations

Bockting, W., Robinson, B., Benner, A., & Scheltema, K. (2004). Patient satisfaction with transgender health services. Journal of sex & marital therapy, 30(4), 277-294.	Regressions	This study compared satisfaction ratings of 180 transgender and 837 other sexual health patients with psychotherapeutic, psychiatric, and sexual medicine services provided at a university-based sexual health clinic. We found few significant differences between transgender and other sexual health patients, except that in 1995, transgender patients had higher satisfaction on their perceived ability to handle the problems that originally had led them to therapy. Survey results helped target areas in need of improvement (e.g., friendliness and courtesy of staff, handling of phone calls), and efforts by the providers to improve services resulted in significant increases in patient satisfaction. These findings put individual complaints in perspective and showed that despite the challenges inherent in providing transgender care good satisfaction can be achieved. We encourage providers to implement quality assurance	Intervention Considerations
Wylie, K., Knudson, G., Khan, S. I., Bonierbale, M., Watanyusakul, S., & Baral, S. (2016). Serving transgender people: clinical care considerations and service delivery models in transgender health. The Lancet, 388(10042), 401-411.	Systematic review	We review the increasing evidence and examples of the defined roles of the mental health professional in transgender health-care decisions, effective models of health service provision, and available surgical interventions for transgender people	Intervention Considerations
Rahman, M., Li, D. H., & Moskowitz, D. A. (2019). Comparing the Healthcare Utilization and Engagement in a Sample of Transgender and Cisgender Bisexual+ Persons. Archives of sexual behavior, 48(1), 255-260.	Survey-based	We assessed participants' access to health care, health outcome experiences, confidence with talking about anogenital topics, proactivity toward their health, comfort with healthcare providers, and knowledge about HPV and examined differences across groups. The data indicated that bi+ transmen and transwomen were more likely to be uninsured or on a government-sponsored insurance plan relative to bi+ ciswomen. Only a minority of transmen and transwomen had seen an obstetrician/gynecologist compared with ciswomen. Transmen were less likely to have received a pelvic examination or cervical Pap smear in their lifetime. Transgender participants had significantly less correct knowledge about HPV relative to ciswomen. Finally, relative to ciswomen, transgender participants reported lower comfort talking with health providers. Our findings suggest that bi+ transmen and transwomen access care less than bi+ ciswomen and have less health knowledge and comfort with their providers. Implications for intervention include encouraging	Barriers to care

		transgender individuals to seek routine screenings, reducing structural barriers to care based on medical coverage, and improving patient–provider competencies around bi+ and transgender health needs	
Hughto, J. M., Pachankis, J. E., & Reisner, S. L. (2018). Healthcare mistreatment and avoidance in trans masculine adults: The mediating role of rejection sensitivity. Psychology of sexual orientation and gender diversity, 5(4), 471.	SEM	TM adults completed a comprehensive survey assessing sociodemographics, sexual health, and healthcare experiences. A 5-item scale assessing participants' sensitivity to rejection in healthcare scenarios was administered and psychometrically evaluated. Structural equation modeling was used to test whether rejection sensitivity in healthcare mediated the relationship between lifetime mistreatment in healthcare and last 12-month healthcare avoidance among TM adults. Overall, 68% of participants had experienced some form of mistreatment in healthcare in their lifetime and 43% had avoided healthcare in the last 12 months. For 5% of the sample, healthcare avoidance in the last 12 months resulted in a medical emergency. Path analyses revealed that healthcare mistreatment was positively correlated with rejection sensitivity and sensitivity was positively correlated with last 12-month healthcare avoidance. Rejection sensitivity mediated the relationship between mistreatment and healthcare avoidance (all p values .05). Rejection sensitivity may contribute to healthcare avoidance among stigmatized TM patients; however, longitudinal research is needed to establish the temporal reordering of these processes. Multilevel interventions to reduce healthcare discrimination and help TM adults cope with the psychological and behavioral consequences of stigma are recommended	barriers to care

Rodriguez, A., Agardh, A., & Asamoah, B. O. (2018). Self-reported discrimination in health-care settings based on recognizability as transgender: a cross-sectional study among transgender US citizens. Archives of sexual behavior, 47(4), 973-985.	Binary Logistic Regression	Data were obtained from the National Transgender Discrimination Survey (n = 6106 participants, assigned sex at birth = 3608 males, 2480 females, respectively). Binary logistic regressions were performed to examine associations between transgender recognizability and discrimination in health-care settings. Being recognized as transgender to any extent had a significant effect on perceived discrimination in health care. Always recognized as transgender showed significant associations with discrimination in a health-care setting (OR 1.48) and the following individualized health-care settings: social service settings (rape crisis and domestic violence centers, OR 5.22) and mental health settings (mental health clinic and drug treatment program, OR 1.87). Sex work and other street economy, which are known experiential factors affected by discrimination, were also significantly associated with discrimination in health-care settings. Discrimination in health-care settings is pervasive for transgender who are recognized as transgender. Public health efforts to improve access to equitable health care for transgender individuals may benefit from consideration of demographic, experiential, and medical risk factors to more fully understand the source of the seemingly excess risk of discrimination among persons recognized by others as being transgender.	Intervention considerations
Kosenko, K., Rintamaki, L., Raney, S., & Maness, K. (2013). Transgender patient perceptions of stigma in health care contexts. Medical care, 819-822.	Qualitative Content Analysis	A total of 152 transgender adults were recruited to complete an online questionnaire about their health care. Participants were asked if and how they had been mistreated, and responses were analyzed by qualitative content analysis. Results: Participants' descriptions of mistreatment coalesced around 6 themes: gender insensitivity, displays of discomfort, denied services, substandard care, verbal abuse, and forced care. Conclusions: These findings provide insight into transgender patients' perceptions of and sensitivity to mistreatment in health care contexts. This information might be used to increase providers' cultural competency and inform their interactions with transgender patients.	Intervention Considerations

McClain, Z., Hawkins, L. A., & Yehia, B. R. (2016). Creating welcoming spaces for lesbian, gay, bisexual, and transgender (LGBT) patients: An evaluation of the health care environment. Journal of homosexuality, 63(3), 387-393.	Systematic Review	Health outcomes are affected by patient, provider, and environmental factors. Previous studies have evaluated patient-level factors; few focusing on environment. Safe clinical spaces are important for lesbian, gay, bisexual, and transgender (LGBT) communities. This study evaluates current models of LGBT health care delivery, identifies strengths and weaknesses, and makes recommendations for LGBT spaces. Models are divided into LGBT-specific and LGBT-embedded care delivery. Advantages to both models exist, and they provide LGBT patients different options of healthcare. Yet certain commonalities must be met: a clean and confidential system. Once met, LGBT-competent environments and providers can advocate for appropriate care for LGBT communities, creating environments where they would want to seek care.	Intervention Considerations
Lelutiu-Weinberger, C., Pollard-Thomas, P., Pagano, W., Levitt, N., Lopez, E. I., Golub, S. A., & Radix, A. E. (2016). Implementation and evaluation of a pilot training to improve transgender competency among medical staff in an urban clinic. Transgender Health, 1(1), 45-53.	Training implementation	Three 2 hour training sessions were delivered to 35 clinic staff across 4 months by two of the authors experienced in TG competency training; the training sessions included TG-related identity and barriers to healthcare issues, TG-specialized care, and creating TG-affirmative environments, medical forms, and billing procedures. We evaluated changes through pre-post intervention surveys by trainees. Compared to pre-training scores, post-training scores indicated significant (1) decreases in negative attitudes toward TGI and increases in TG-related clinical skills, (2) increases in staff's awareness of transphobic practices, and (3) increases in self-reported readiness to serve TGI. The clinic increased its representation of general LGBT-related images in the waiting areas, and the staff provided highly positive training evaluations. This PTP in TG health shows promise in leading to changes in provider attitudes and competence,as well as clinic systems, especially with its incorporation in continuing	intervention considerations
Radix, A. E., Lelutiu-Weinberger, C., & Gamarel, K. E. (2014). Satisfaction and healthcare utilization of transgender and gender non-conforming individuals in NYC: a community-based participatory study. LGBT health, 1(4), 302-308.	Focus Groups	50 TGNC individuals were recruited via flyers and direct referrals from healthcare professionals within community spaces and pertinent venues. We administered a brief survey and conducted four focus groups exploring participants' health care utilization and perceived barriers to care, routine care, hormone and silicone use, and recommendations for improving transgender services.Participants were 18- to 64-years-old, racially/ethnically diverse, and the majority were medically insured, underwent routine health care in the last year, and received an HIV test in their lifetime. A significant proportion	Intervention Considerations/ Barriers to Care

		reported taking hormones prescribed by a medical provider and were in the care of knowledgeable providers. Participants perceived four areas where barriers persisted: utilization of preventive services, access to transition-related procedures, access to legal assistance, and inclusion of TGNC individuals in public health education and campaigns. Structural interventions are needed, such as comprehensive provider training programs for all level staff to better serve the needs of TGNC individuals, increase service utilization and improve wellbeing, while effecting lasting institutional change. Service provision establishments should hire more TGNC staff and integrate transgender care into existing practices.	
Frost, D. M., Lehavot, K., & Meyer, I. H. (2015). Minority stress and physical health among sexual minority individuals. Journal of behavioral medicine, 38(1), 1-8.	interview subjects with follow up	This study examined the effects of minority stress on the physical health of lesbians, gay men, and bisexuals (LGBs). Participants (N = 396) completed baseline and one year follow-up interviews. Exposure to stress and health outcomes were assessed with two methods: a subjective self-appraisal method and a method whereby two independent judges externally rated event narratives using standardized criteria. The odds of experiencing a physical health problem at follow-up were significantly higher among LGBs who experienced an externally rated prejudice event during the follow-up period compared to those who did not. This association persisted after adjusting for experiences of general stressful life events that were not related to prejudice. Self-appraised minority stress exposures were not associated with poorer physical health at 1-year follow-up. Prejudice-related stressful life events have a unique deleterious impact on health that persists above and beyond the effect of stressful life events unrelated to prejudice.	MSS
Kelleher, C. (2009). Minority stress and health: Implications for lesbian, gay, bisexual, transgender, and questioning (LGBTQ) young people. Counselling psychology quarterly, 22(4), 373-379.	Stepwise Regression Analysis	This study explored the impact of minority stress on psychological distress among LGBTQ youth in Ireland. Measures assessing three components of minority stress (sexual identity distress, stigma consciousness, and heterosexist experiences) were administered online to LGBTQ youth aged 16–24 years (N = 301). Each minority stressor had a significant independent association with distress. Stepwise regression analyses identified the linear combination of minority stressors as significantly predictive of distress [$F(3,201) = 30.80$, $p \leq 0.001$]. Results suggest that the oppressive social environment created through sexual/transgender identity-related stigma negatively impacts on the well-being of	MSS

		LGBTQ youth. These findings have implications for health professionals and policy makers interested in the concerns of LGBTQ youth experiencing difficulties related to minority status and will facilitate the development and tailoring of interventions aimed at reaching those most at risk.	
Hatzenbuehler, M. L., & Pachankis, J. E. (2016). Stigma and minority stress as social determinants of health among lesbian, gay, bisexual, and transgender youth: research evidence and clinical implications. Pediatric Clinics, 63(6), 985-997.	Systematic Reciew	In this article, we review theories and evidence for stigma and minority stress as determinants of LGBT health disparities among youth. We begin by briefly reviewing theories of stigma and minority stress. Next, we cover empirical evidence bearing on the role that stigma at individual, interpersonal, and structural levels plays in conferring risk for negative health outcomes among LGBT youth. We then cover the myriad processes that are disrupted by stigma—ranging from cognitive (eg, sensitivity to rejection), affective (eg, emotional response), interpersonal (eg, social relationships), and physiologic (eg, reactivity to stress)—that in turn contribute to poor health among this population. Finally, we review emerging evidence for clinical and public health interventions aimed at reducing LGBT health disparities among youth and conclude with a discussion of future directions for research and interventions	MSS
Hendricks, M. L., & Testa, R. J. (2012). A conceptual framework for clinical work with transgender and gender nonconforming clients: An adaptation of the Minority Stress Model. Professional Psychology: Research and Practice, 43(5), 460–467. https://doi.org/10.1037/a0029597	Concept	In the last few years, transgender and gender nonconforming people have become more visible in our society, which has sparked a marked increase in awareness, interest, and attention among psychologists. Questions have emerged about the extent to which psychologists are able to work competently with this population. This article presents a framework for understanding key clinical issues that psychologists who work with transgender and gender nonconforming individuals will likely encounter in their clinical work. This article does not address the knowledge and skills required to provide services related to gender transition, but rather to provide other psychological services that these clients may need, in light of the high levels of gender-related victimization and discrimination to which they are exposed. An adaptation of the Minority Stress Model (Meyer, 2003) is presented and translated to incorporate the unique experiences encountered by transgender and gender nonconforming individuals. In particular, we examine adverse experiences that are closely related to gender identity and	MSS

		expression, resulting expectations for future victimization or rejection, and internalized transphobia. The impact of Minority Stress Model factors on suicide attempts is presented as a detailed example. Mechanisms by which transgender and gender nonconforming persons develop resilience to the negative psychological effects of these adverse experiences are also discussed. Recommendations for clinicians are then made to assist psychologists in developing competence in working with this population.	
Snelgrove, J. W., Jasudavisius, A. M., Rowe, B. W., Head, E. M., & Bauer, G. R. (2012). “Completely out-at-sea” with “two-gender medicine”: A qualitative analysis of physician-side barriers to providing healthcare for transgender patients. BMC health services research, 12(1), 110.	qualitative	This was a qualitative study with physician participants from Ontario, Canada. Semi-structured interviews were used to capture a progression of ideas related to barriers faced by physicians when caring for trans patients. Qualitative data were then transcribed verbatim and analysed with an emergent grounded theory approach.A total of thirteen (13) physician participants were interviewed. Analysis revealed healthcare barriers that grouped into five themes: Accessing resources, medical knowledge deficits, ethics of transition-related medical care, diagnosing vs. pathologising trans patients, and health system determinants. A centralising theme of “not knowing where to go or who to talk to” was also identified. The findings of this study show that physicians perceive barriers to the care of trans patients, and that these barriers are multifactorial. Access barriers impede physicians when referring patients to specialists or searching for reliable treatment information. Clinical management of trans patients is complicated by a lack of knowledge, and by ethical considerations regarding treatments—which can be unfamiliar or challenging to physicians. The disciplinary division of responsibilities within medicine further complicates care; few practitioners identify trans healthcare as an interest area, and there is a tendency to overemphasise trans status in mental health evaluations. Failure to recognise and accommodate trans patients within sex-segregated healthcare systems leads to deficient health policy. The findings of this study suggest potential solutions to trans healthcare barriers at the informational level—with increased awareness of clinical guidelines and by including trans health issues in medical education—and at the institutional level, with	provider education

		support for both trans-focused and trans-friendly primary care models.	
Hanssmann, C., Morrison, D., & Russian, E. (2008). Talking, gawking, or getting it done: Provider trainings to increase cultural and clinical competence for transgender and gender-nonconforming patients and clients. Sexuality Research & Social Policy, 5(1), 5.	Mixed Methods	Using a mixed-methods approach, the evaluation assessed the effectiveness of 3 competency trainings administered by a nonprofit health education and outreach organization serving lesbian, gay, bisexual, transgender, gender-nonconforming, and questioning people. Quantitative data indicated that the trainings were effective in transferring knowledge. Qualitative data confirmed this finding and elicited a number of themes about providers' experience of the trainings and their posttraining questions about interacting with transgender and gender-nonconforming patients and clients. The authors propose policy recommendations to guide curriculum developers and trainers in developing content and structure and to facilitate implementation of lessons learned in trainings at an agency- or organization-wide level.	provider education
Keuroghlian, A. S., Ard, K. L., & Makadon, H. J. (2017). Advancing health equity for lesbian, gay, bisexual and transgender (LGBT) people through sexual health education and LGBT-affirming health care environments. Sexual health, 14(1), 119-122.	Concept	Lesbian, gay, bisexual and transgender (LGBT) people face pervasive health disparities and barriers to highquality care. Adequate LGBT sexual health education for emerging health professionals is currently lacking. Clinical training programs and healthcare organisations are well poised to start addressing these disparities and affirming LGBT patients through curricula designed to cultivate core competencies in LBGT health as well as health care environments that welcome, include and protect LGBT patients, students and staff. Health education programs can emphasize mastery of basic LGBT concepts and terminology, as well as openness towards and acceptance of LGBT people. Core concepts, language and positive attitudes can be instilled	provider education

		alongside clinical skill in delivering inclusive sexual health care, through novel educational strategies and paradigms for clinical implementation. Caring for the health needs of LGBT patients also involves the creation of health care settings that affirm LGBT communities in a manner that is responsive to culturally specific needs, sensitivities and challenges that vary across the globe.	
Sequeira, G. M., Chakraborti, C., & Panunti, B. A. (2012). Integrating lesbian, gay, bisexual, and transgender (LGBT) content into undergraduate medical school curricula: a qualitative study. Ochsner Journal, 12(4), 379-382.	qualitative	We provided 4 educational sessions to preclinical medical students at the Tulane University School of Medicine: 3 optional, 1-hour didactic sessions and 1 standardized patient encounter. Following sessions 1-3, students completed electronic feedback forms; we then analyzed their responses thematically. The thematic analysis of student responses identified key themes: a current lack of exposure to LGBT content, agreement that LGBT material is applicable to students' work as future physicians, and the relevance of including such information in the medical school curriculum.	provider education
William White, Stephanie Brenman, Elise Paradis, Elizabeth S. Goldsmith, Mitchell R. Lunn, Juno Obedin-Maliver, Leslie Stewart, Eric Tran, Maggie Wells, Lisa J. Chamberlain, David M. Fetterman & Gabriel Garcia (2015) Lesbian, Gay, Bisexual, and Transgender Patient Care: Medical Students' Preparedness and Comfort, Teaching and Learning in Medicine, 27:3, 254-263.	survey + focus groups	An online questionnaire (2009–2010) was distributed to students (n = 9,522) at 176 allopathic and osteopathic medical schools in Canada and the United States, followed by focus groups (2010) with students (n D 35) at five medical schools. The objective of this study was to characterize LGBT-related medical curricula, to determine medical students' assessments of their institutions' LGBT-related curricular content, and to evaluate their comfort and preparedness in caring for LGBT patients. Findings: Of 9,522 survey respondents, 4,262 from 170 schools were included in the final analysis. Most medical students (2,866/4,262; 67.3%) evaluated their LGBT-related curriculum as "fair" or worse. Students most often felt prepared addressing human immunodeficiency virus ((HIV; 3,254/4,147; 78.5%) and non-HIV sexually transmitted infections (2,851/4,136; 68.9%). They felt least prepared discussing sex reassignment surgery (1,061/4,070; 26.1%) and gender transitioning (1,141/4,068; 28.0%). Medical education helped 62.6% (2,669/4,262) of students feel "more prepared" and 46.3% (1,972/4,262) of students feel "more comfortable" to care for LGBT patients. Four focus group sessions with 29 students were transcribed and analyzed. Qualitative analysis	provider education

		suggested students have significant concerns in addressing certain aspects of LGBT health, specifically with transgender patients.	
Thomas, D. D., & Safer, J. D. (2015). A simple intervention raised resident-physician willingness to assist transgender patients seeking hormone therapy. Endocrine Practice, 21(10), 1134-1142.	pre/post intervention	An intervention on transgender medicine covering the durability of gender identity and hormonal treatment regimens was added to the curriculum for residents. An anonymous survey assessed the residents' knowledge and willingness to assist with hormonal therapy before and after the lecture.The percent of residents who agreed that they felt sufficiently knowledgeable to assist with hormonal therapy for a female-to-male patient increased significantly, from 5% before to 76% following the lecture ($\chi 2$, 24.7; degrees of freedom, 1; $P<.001$). The percent of residents who reported that they felt sufficiently knowledgeable to assist with hormonal therapy for a male-to-female patient increased significantly, from 5% before to 71% following the lecture ($\chi 2$, 24.0; degrees of freedom, 1; $P<.001$). The intervention increased resident knowledge about hormonal therapy for hypogonadal men ($\chi 2$, 11.4; degrees of freedom, 1; $P<.001$) and women ($\chi 2$, 9.4; degrees of freedom, 1; $P = .002$). The intervention made more residents agree that gender identity has a biologic basis that remains constant ($P<.001$) and that hormonal and surgical therapies should be offered ($P = .047$).	provider education
Felsenstein, D. R. (2018). Enhancing lesbian, gay, bisexual, and transgender cultural competence in a Midwestern primary care clinic setting. Journal for nurses in professional development, 34(3), 142.	Pre/post intervention	The process of initiating lesbian, gay, bisexual, and transgender (LGBT) cultural competencies and educational interventions developed to increase staff knowledge on LGBT culture and health issues is discussed, including a computer-based module and panel discussion. The module intervention showed a statistically significant increase ($p = .033$) of staff LGBT knowledge from pretest to posttest scores. An evaluation after the panel discussion showed that 72% of staff indicated they were more prepared for LGBT patient care.	provider education

Vanderleest, J. G., & Galper, C. Q. (2009). Improving the health of transgender people: Transgender medical education in Arizona. Journal of the Association of Nurses in AIDS Care, 20(5), 411-416.	Concept	Learning objectives for this educational session were to outline important concepts to be included in a medical training for treating LGBT patients	provider education
Dubin, S. N., Nolan, I. T., Streed Jr, C. G., Greene, R. E., Radix, A. E., & Morrison, S. D. (2018). Transgender health care: improving medical students' and residents' training and awareness. Advances in medical education and practice, 9, 377.	Systematic Review	We conducted structured searches of five databases to identify literature related to medical education and transgender health. Of the 1272 papers reviewed, 119 papers were deemed relevant to predefined criteria, medical education, and transgender health topics. Citation tracking was conducted on the 119 papers using Scopus to identify an additional 12 relevant citations (a total of 131 papers). Searches were completed on October 15, 2017 and updated on December 11, 2017. Results: Transgender health has yet to gain widespread curricular exposure, but efforts toward incorporating transgender health into both undergraduate and graduate medical educations are nascent. There is no consensus on the exact educational interventions that should be used to address transgender health. Barriers to increased transgender health exposure include limited curricular time, lack of topic-specific competency among faculty, and underwhelming institutional support. All published interventions proved effective in improving attitudes, knowledge, and/or skills necessary to achieve clinical competency with transgender patients.	provider education
Korpaisarn, S., & Safer, J. D. (2018). Gaps in transgender medical education among healthcare providers: A major barrier to care for transgender persons. Reviews in Endocrine and Metabolic Disorders, 19(3), 271-275.	Systematic Review	The PubMed database was searched for all literature that assessed transgender medical education among physicians or trainees and all papers that reported results of transgender-specific educational interventions. Literature that only evaluated general lesbian, gay, bisexual, and transgender (LGBT) educational interventions was excluded. The lack of education in transgender care continues among providers across all levels of medical education from medical students and physician trainees to primary care providers, endocrinologists and other specialists involved in transgender care. Several interventions have been shown to effectively improve transgender knowledge and cultural competency. Education among healthcare providers is deficient and is considered a major barrier to care for transgender individuals. Effective interventions should be applied to fundamental medical	provider education/barriers to care

		education. Additional focused education also should be taught with specialty-appropriate content to produce needed proficiency among providers of transgender care.	
Sawning, S., Steinbock, S., Croley, R., Combs, R., Shaw, A., & Ganzel, T. (2017). A first step in addressing medical education Curriculum gaps in lesbian-, gay-, bisexual-, and transgender-related content: The University of Louisville Lesbian, Gay, Bisexual, and Transgender Health Certificate Program. Education for Health, 30(2), 108.	Pre/post intervention	A pretest-post-test design was used to investigate medical students' (n = 39) attitude and knowledge outcomes after program participation. Attitudinal items with Likert-type responses were analyzed using the Wilcoxon signed-rank test. Baseline frequency and percentage of correct responses were tabulated for knowledge questions. At both pre- and post-test, the 11 knowledge items were summed to establish a total knowledge score, creating two total scores. The paired sample t-test was used to evaluate the pre- and post-change, and Cohen's D was used to assess effect size. All P values were two-tailed. Statistical significance was set by convention at $P < 0.05$. Results: Students correctly answered 69% or less of the knowledge questions at baseline. Total correct knowledge scores significantly increased post intervention with the effect size being large (Cohen's D = 0.90, $P < 0.001$). Attitudes significantly increased post intervention on two items ($P = 0.019$ and $P = 0.037$). Some attitude items decreased post intervention: students felt it is more challenging to conduct a patient history with a LGB patient (pre-mean agreement = 2.44; post-mean agreement = 2.97, $P = 0.018$).	provider education/intervention considerations
Bradford, J., Reisner, S. L., Honnold, J. A., & Xavier, J. (2013). Experiences of transgender-related discrimination and implications for health: results from the Virginia Transgender Health Initiative Study. American journal of public health, 103(10), 1820-1829.	Multivariate logistic regression	In 2005 through 2006, 387 self-identified transgender people completed a statewide health needs assessment; 350 who completed eligibility questions were included in this examination of factors associated with experiences of discrimination in health care, employment, or housing. We fit multivariate logistic regression models using generalized estimating equations to adjust for survey modality (online vs paper). Of participants, 41% (n = 143) reported experiences of transgender-related discrimination. Factors associated with transgender-related discrimination were geographic context, gender (female-to male spectrum vs male-to-female spectrum), low socioeconomic status, being a racial/ethnic minority, not having health insurance, gender transition indicators (younger	Trans Health South

		age at first transgender awareness), health care needed but unable to be obtained (hormone therapy and mental health services), history of violence (sexual and physical), substance use health behaviors (tobacco and alcohol), and interpersonal factors (family support and community connectedness).	
White Hughto, J. M., Murchison, G. R., Clark, K., Pachankis, J. E., & Reisner, S. L. (2016). Geographic and individual differences in healthcare access for US transgender adults: a multilevel analysis. LGBT health, 3(6), 424-433.	Multilevel analysis	Multilevel analyses were conducted to investigate lifetime healthcare refusal using national data from 5831 U.S. transgender adults. Hierarchical generalized linear models examined associations between individual (age, gender, race, income, insurance, and healthcare avoidance) and state-level factors (percent voting Republican, percent same-sex couple households, income inequality, and transgender protective laws) and lifetime refusal of care. Results show that individual-level factors (being older; trans feminine; Native American, multiracial, or other racial/ethnic minority; having low income; and avoiding care due to discrimination) are positively associated with care refusal (all P-values <0.05). Adjusting for individual-level factors, variation was observed across U.S. states, with a greater proportion of states in the Southern and Western United States with transgender residents at increased odds of experiencing care refusal, relative to other regions of the United States. When adjusting for state-level factors, the percentage of the state population voting Republican was positively associated with care refusal among the transgender adults sampled ($P < 0.01$).	Trans Health South
Marshall, S. A., Allison, M. K., Stewart, M. K., Thompson, N. D., & Archie, D. S. (2018). Highest priority health and health care concerns of transgender and nonbinary individuals in a Southern State. Transgender health, 3(1), 190-200.	Qualitative Surveys	Participants (n = 125), who were trans/NB individuals (77%) and their cisgender allies (23%) living in a southern state, completed a survey with open-ended response options and/or participated in trans-led summits. The top three health and health care concerns identified by participants, both trans/NB and cisgender rallies, were insurance coverage for transition-related care, access to and availability of transition-related care, and education of health care providers about trans patients and issues.	Trans Health South

Meyer, I. H. (2003). Prejudice, social stress, and mental health in lesbian, gay, and bisexual populations: conceptual issues and research evidence. Psychological bulletin, 129(5), 674.	Systematic Review	In this article the author reviews research evidence on the prevalence of mental disorders in lesbians, gay men, and bisexuals (LGBs) and shows, using meta-analyses, that LGBs have a higher prevalence of mental disorders than heterosexuals. The author offers a conceptual framework for understanding this excess in prevalence of disorder in terms of minority stress—explaining that stigma, prejudice, and discrimination create a hostile and stressful social environment that causes mental health problems. The model describes stress processes, including the experience of prejudice events, expectations of rejection, hiding and concealing, internalized homophobia, and ameliorative coping processes. This conceptual framework is the basis for the review of research evidence, suggestions for future research directions, and exploration of public policy implications.	MSS
Abelson, M. J. (2016). ‘You aren’t from around here’: race, masculinity, and rural transgender men. Gender, Place & Culture, 23(11), 1535-1546.	Intersectional Analysis	Both scholarly and everyday understandings of transgender people tend to assume that they can only live well in urban places, yet there is little research on the transgender people actually living in rural communities. This article uses an intersectional analysis of 45 interviews conducted between 2010 and 2013 with transgender men living in the Southeast and Midwest United States to understand how some rural transgender people may not necessarily and automatically fare worse than those in cities. Indeed, these data demonstrate that a more productive question might be, which transgender people integrate into rural communities? The reported experiences of trans men suggest that the claims to sameness that are crucial to inclusion in rural communities are articulated centrally through whiteness and enacting appropriate rural working-class heterosexual masculinities. The claim to sameness allows for a measure of acceptance in rural communities under economic and demographic strain in the twenty-first century.	Trans Health South

Johnson, A. H., Hill, I., Beach-Ferrara, J., Rogers, B. A., & Bradford, A. (2020). Common barriers to healthcare for transgender people in the US Southeast. International Journal of Transgender Health, 21(1), 70-78.	Focus Groups	The research team conducted four 120-minute focus groups (eligibility criteria: 18 years or older, self-identify as transgender, live in the U.S. Southeast). Participants completed a demographic questionnaire prior to the start of the focus group. Each focus group explored access to and experiences of receiving basic healthcare as a transgender person in the U.S. Southeast. Established qualitative methods were used to conduct the focus groups and data analysis. Participants (n ¼ 48) ranged in age from 19 to 65, with the majority identifying as trans women (43.8%) and non-binary (33.3%). The sample was racially diverse: White (50%), Black (37.5%), and Latinx or Multiracial (12.5%). Multiple barriers to care were identified: (1) fear and mistrust of providers; (2) inconsistency in access to healthcare; (3) disrespect from providers; and, (4) mistreatment due to intersecting experiences of gender, race, class, and location.	Trans Health South
Benson, K., Westerfield, E., & van Eeden-Moorefield, B. (2018). Transgender people's reflections on identity, faith, and Christian faith communities in the US. Sexual and Relationship Therapy, 33(4), 395-420.	Qualitative	Seven self-identified transgender people participated in indepth interviews. Results of the study indicated that participants had various experiences in faith communities, with both supportive and discriminatory responses from others. The results also suggest that participants maintained their faith beliefs even when they experience rejection from faith communities. Moreover, participants reported feeling a connection with a higher power, and specifically viewed themselves as made transgender by God. Findings from this study may be particularly relevant for relational therapists who work within Christian faith communities and organizations. Implications for transgender inclusive and supportive therapy are discussed.	Trans Health South
McGarvey, E. L., Leon-Verdin, M., Killos, L. F., Guterbock, T., & Cohn, W. F. (2011). Health disparities between Appalachian and non-Appalachian counties in Virginia USA. Journal of community health, 36(3), 348-356.	Large population based survey	A telephone survey of a random sample of adults living in households within communities of all counties of the state of Virginia in the USA was conducted. Findings: Health status was poorer among those in communities within Appalachian counties in VA and health insurance did not make a difference. Health perception was significantly worse in within communities in Appalachian counties compared to non-Appalachian community residents (30.5 vs. 17.4% rated their health status as poor/fair), and was worse even among those with no chronic diseases. Within communities in Appalachian counties, black residents report significantly better health perception than do white residents.	Appalachian Health

Pieh-Holder, K. L., Goldschmidt, C., & Young, P. (2012). Qualitative needs assessment: healthcare experiences of underserved populations in Montgomery County, Virginia, USA.	Focus Groups	Community focus groups were conducted with target populations which were representative of the community. A thematic analysis of the transcribed field notes and group interviews was conducted. Qualitative data analysis was performed using the Analysis Software for Word-Based Records (AnSWR) developed by the Centers for Disease Control. Results: Three important categories of beliefs which may impact healthcare utilization emerged from the discussions: (1) cultural health perceptions; (2) perceived barriers to care; and (3) coping strategies. Participants expressed a right to access quality care, preferred to spend money on basic living expenses rather than healthcare services; frequently neglected seeking care for adults while rarely neglecting to seek care for their children; valued but infrequently utilized preventative care; and had a lack of confidence in the care that was provided. Perceived barriers to healthcare services reported by participants included a lack of access to affordable care; complexities of health insurance and payer status; limited hours of clinic operation; lack of transportation and geographic distance; and the complexity of navigating the healthcare system. Finally, participants reported using various coping strategies to overcome barriers to accessing healthcare services. These strategies included delaying treatment and self-care; seeking financial and transportation assistance; and using community resources to navigate the system.	Appalachian Health
Huttlinger, K., Schaller-Ayers, J., & Lawson, T. (2004). Health care in Appalachia: a population-based approach. Public Health Nursing, 21(2), 103-110.	Large population-based survey	Findings indicated a population who had a greater morbidity for chronic illnesses such as heart disease and hypertension than the rest of the state, a large number of people without health and prescription coverage, and an overall perception of fair-to-poor health status. Findings also indicated a substantial proportion of the population who were in need of dental and visual care and general preventive services and those who were dealing with depression at home without outside intervention. One disturbing finding was the large number of people who shared prescriptive medications with family and friends.	Appalachian Health

Appendix B. Transgender Patient Experiences with Healthcare

Please rate how strongly you agree with the following statements:	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree
My healthcare provider has a bathroom I feel comfortable using	28%	29%	17%	10%	2%
I have encountered front desk staff at the office of a provider who have treated me poorly because of my gender identity	8%	17%	17%	28%	18%
I have been misgendered by a front desk staff person at the office of a provider I have seen	26%	29%	6%	12%	15%
A front desk staff person at the office of a provider I have seen has deadnamed me	24%	25%	9%	16%	11%
I have encountered medical providers that have treated me poorly because of my gender identity	13%	13%	16%	27%	17%
I have been misgendered by providers at the office of a provider I have seen	28%	24%	9%	20%	8%
A provider at the office of a provider I have seen has deadnamed me	19%	21%	11%	21%	11%
There is LGBTQ+ affirming signage at the office of the last primary care provider I saw	13%	15%	10%	20%	30%
There are LGBTQ+ affirming materials at the office of the last primary care provider I saw	8%	18%	9%	28%	28%

Appendix C: Resident Resource Guide

Promoting Health in Transgender Patient Populations in Appalachia
Rebecca Altschuler, M.A
Altschuler@etsu.edu

Directions for Using This Guide: Click through the links as you need them in your practice. If you need anything specific or want to share a resource for your fellow residents, please add in a comment to the "Comment" Section. New additions will be identified as they are added.

Training Session 1
- Intake Form Options
- Creating a Welcoming Environment (see Page 5)
- Community Standards of Practice
- Overview of Gender Affirming Treatments and Procedures
- Transgender Health Needs Management
- Additional Learning Modules

Training Session 2
- Care Considerations for Primary Care

The above is a flow chart for care considerations based on age
- Monitoring Patients Receiving Gender Affirming Therapy
- Gender Affirming Hormone Therapies
- Cervical Cancer Screening
- eQuality Toolkit for LGBTQ Affirming Care

The above resource covers screenings, preventative care, affirming communication skills, affirming exam practices, and national resources for patients
- Safe Chest Binder
- Guide to Safely Using Chest Binders
    - Local Trans Community Resources (PFLAG)
    - Tri Cities Pride Community Center Website

Appendix D: Sample Vignettes

1) A 45-year-old transwoman comes into the clinic. She is currently on HRT but is an established patient somewhere else. She wants to increase her hormone schedule because she saw online that someone else had better results on this new schedule. You have concerns that this change in her hormones will have negative impacts on her health, but she is insistent that if you do not prescribe these hormones, she will get them on the street.

2) Shay is a transgender man who presents in the clinic concerned that he has a yeast infection. Shay is an established patient at the clinic, but his usual provider is out today so you see him instead. How do you meet Shay's medical need (assessment of a yeast infection) in an affirming way?

3) A 17-year-old transgender man comes to clinic reporting trouble breathing. You do a physical exam and find out that they are wearing ace bandages as a chest binder. They have sores and bruising on their chest.

Appendix E. Full Adapted Measures

Please indicate the extent to which you agree or disagree with the following statements on a scale from 1 (strongly disagree) to 5 (strongly agree):

1-Strongly Disagree, 2-Disagree, 3-Neutral, 4-Agree, 5-Strongly Agree

Attitudes Measures

1. Practitioners should verbalize respect for transgender clients.

2. Practitioners should make an effort to learn about diversity within the transgender communities.

3. Practitioners should be knowledgeable about transgender-relevant resources.

4. Practitioners should educate themselves about transgender identities and needs.

5. Practitioners should acquire knowledge necessary in effective practice with transgender clients.

6. Practitioners should work to develop skills necessary for effective practice with transgender clients.

7. Practitioners should develop attitudes necessary for effective practice with transgender clients.

8. Discrimination creates problems that transgender clients may need to address in treatment.

Competency Measure

9. I demonstrate comfort about transgender issues to transgender clients.

10. I educate myself about transgender concerns.

11. I create a climate that allows for voluntary self-identification by transgender clients.

12. I discuss gender identity in a non-threatening manner with clients.

13. At this point in my professional development, I feel competent, skilled, and qualified to counsel transgender clients.

14. I have been to in-services, conference sessions, or workshops, which focused on transgender issues in psychology.

15. I feel competent to assess the mental health needs of a person who is transgender in a therapeutic setting.

16. I have received adequate clinical training and supervision to counsel transgender clients.

17. I have done counseling role-plays either the client or counselor involving a transgender issue.

18. Currently, I do not have the skills or training to do a case presentation or consultation if my client were transgender.

19. I check up on my transgender counseling skills by monitoring my functioning/competency via consultation, supervision, and continuing education.

Please indicate whether the following statements are true or false:

General Knowledge Items

20. If a patient requests Hormone Replacement Therapy (HRT) from a primary care provider, the PCP can prescribe it.

21. If a patient requests HRT from a PCP, the PCP needs to refer the patient to an endocrinologist.

22. All female-to-male (FTM) patients will want phalloplasty someday.

23. All male-to-female (MTF) patients will want chest surgery someday.

24. Transgender male patients never need pap smears.

25. Transgender female patients never need a prostate exam.

26. Transgender male patients cannot get pregnant.

Please indicate the extent to which you agree or disagree with the following statements on a scale from 1 (strongly disagree) to 5 (strongly agree):

1-Strongly Disagree, 2-Disagree, 3-Neutral, 4-Agree, 5-Strongly Agree

Awareness of AMA Guidelines Items

27. Displaying brochures and educational materials about Has been shown in research to promote inclusivity trans health concerns in my medical practice

28. Updating the clinic's New Patient Intake Form to include more gender affirming language is not necessary and not recommended by the AMA

29. Providers should be held to effective communication policies that aim to create an inclusive environment for transgender patients

30. It is up the provider to not discriminate against transgender patients. The medical clinic is not responsible for making policies regarding provider and staff behavior.

31. If a provider is not interested in learning about basic familiarity with transgender patient needs in a medical setting, they do not need to, per the AMA guidelines.

Awareness of Patient Experiences in South Central Appalachia

32. Transgender patients in Northeast Tennessee are mostly well treated by office staff

33. Transgender patients are often misgendered (referred to by a gender other than the one they identity as) by front desk staff in medical clinics in Northeast Tennessee

34. Because many clinics in Northeast Tennessee follow AMA guidelines for inclusive intake paperwork, transgender patients in are not being called their legal/birth names (as opposed to their chosen/preferred names) when they visit the clinics.

35. Transgender patients are often misgendered by direct care medical providers in Northeast Tennessee region

36. There is inclusive LGBTQ+ signage in the clinics in Northeast Tennessee

37. There are inclusive LGBTQ+ materials in the waiting areas clinics in Northeast Tennessee.

38. Transgender patients in this region feel that their medical care is not impacted by provider attitudes towards their identities.

Appendix F: Module Content

Educational Content	Derived From	Delivered Via
Patient Experiences of Accessing Care	TransACCESS Data	Video
Terminology	Literature Base/ Resident Liaison Input	Lecture
Patient Experiences of Discrimination In Clinic	TransACCESS Data	Virtual, Live Polling and Interactive Discussion
Best Practices for Gender Inclusivity	Literature Base/ Resident Liaison Input	Lecture/Live Polling
Cultural Humility	Literature Base/ Liaison Input	Lecture/Interactive Vignette Discussion
Taking Gender/Sexuality History	TransACCESS Data/Resident Liaison Input/ Literature Base	Video
Minority Stress/Health Disparaties	Literature Base	Lecture
Health Needs	TransACCESS Data/Resident Liaison Input	Live Poll, Lecture, Decision Trees
Procedure Guidelines	Literature Base/ Resident Liaison Input	Lecture/ Vignette/ Interactive Discussion

VITA

REBECCA ALTSCHULER

Education:	Ph.D. Psychology, concentration in Clinical Psychology, East Tennessee State University, Johnson City, Tennessee, 2023 M.A. Clinical Psychology, Columbia University New York, NY 2015-2017 B.A. Psychology, University of New Haven, New Haven, CT 2013-2015 A.A, Liberal Arts and Sciences, Gateway Community College, New Haven, CT 2010-2012
Professional Experience:	Graduate Assistant, East Tennessee State University, College of Arts and Sciences, 2017-2019
Publications:	Dodd, J., **Altschuler, R.,** Caselman, G., & Hinkle, M. (2021). Associations among sexual trauma stigma, anxiety, and somatic health complaints in predominantly high-SES white women. *Stigma and Health.* Brucato, G., Appelbaum, P. S., Lieberman, J. A., Wall, M. M., Feng, T., Masucci, M. D., **Altschuler, R.A** & Girgis, R. R. (2018). A longitudinal study of violent behavior in a psychosis-risk cohort. *Neuropsychopharmacology*, 43(2), 264.

Ciarleglio, A. J., Brucato, G., Masucci, M. D., **Altschuler, R**.**A**, Colibazzi, T., Corcoran, C. M., & Schobel, S. A. (2018). A predictive model for conversion to psychosis in clinical high-risk patients. *Psychological medicine*, 1-10.

Brucato, G., Appelbaum, P. S., Masucci, M. D., Rolin, S., Wall, M. M., Levin, M., **Altschuler, R.A**. & Girgis, R. R. (2018). Prevalence and phenomenology of violent ideation and behavior among 200 young people at clinical high-risk for psychosis: an emerging model of violence and psychotic illness. *Neuropsychopharmacology*.

Grivel, M. M., Leong, W., Masucci, M. D., **Altschuler, R. A**., Arndt, L. Y., Redman, S. L., Bruacto, G., & Girgis, R. R. (2018). Impact of lifetime traumatic experiences on suicidality and likelihood of conversion in a cohort of individuals at clinical high-risk for psychosis. *Schizophrenia research*.