DNP Project:
Implementing Multi-Method Transgender Education into a Baccalaureate Nursing Program

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Abstract

Transgender health has been designated as a research priority to address disparities and the startling rates of discrimination, stigmatization, harassment, and violence often inflicted by healthcare providers (Bogard et al., 2017). Research shows that knowledge surrounding transgender healthcare is severely lacking in higher education. Lack of exposure and learning application perpetuates negative attitudes and incompetence which impedes future students’ clinical practice when working with transgender individuals (Brown et al., 2017). To address the disparity, a multi-method transgender education program was created for junior level baccalaureate nursing students at [Redacted]. The education program utilized a contact education seminar followed by a clinical simulation for knowledge application. The Transgender Attitudes and Beliefs (TABS) scale was used to assess the knowledge, attitudes, and comfort levels of nursing students. Research shows the TABS scale has proven to be psychometrically sound with demonstrated reliability and validity (Kanamori et al., 2017). The TABS scale was completed by participants at three critical points - the beginning of the study, after the contact education seminar, and after the simulation - to assess the effectiveness of each intervention and the overall study. This study sought to increase knowledge, change attitudes, and improve comfort levels of junior-level baccalaureate nursing students when caring for transgender clients. Project results revealed a significant increase in knowledge and comfort levels only after completion of the seminar and simulation. Study findings support current research that multimethod education models are needed to promote trans-affirmative practice. This project’s transgender education interventions can be easily adapted into the baccalaureate nursing curriculum in the future.
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Nurses play a vital role in the client experience and serve as key advocates in the healthcare system. They are on the frontlines caring for a diverse client population yet nursing curricula have been slow to incorporate education addressing the health care needs of minority groups. This education deficit leads to nurses entering the workforce with uncertainty when caring for members of minority groups. One education topic that has historically been overlooked and nonexistent in some nursing programs is transgender health. The National League for Nursing’s (NLN) core values call for the inclusion of culturally competent education addressing diverse populations; however, nursing curricula continue to provide little to no education opportunities surrounding care for the transgender person (Jackson & Halstead, 2016, Carabez et al., 2016, Acker, 2017, Green et al., 2017, Lim & Hsu, 2016).

This absence of education and exposure is detrimental to new nurses entering the workforce and has a direct impact on the transgender community. Research shows that the lack of formal education in healthcare programs transition students into the clinical setting with negative attitudes, feeling uncomfortable, unconfident, and unprepared to care for transgender clients (Leach & Layson-Wolf, 2016). One study found fewer than 50% of students felt their current education training prepared them to care for members of the Lesbian, Gay, Bisexual, Transgender, and Queer/Questioning (LGBTQ) community (Greene et al., 2018). This gap in education leads to nurses having little knowledge on how to care for transgender people and increases the risk for bias and discrimination towards members of the community (Carabez et al., 2016).
The DNP project is a multi-method education program that exposed junior-level baccalaureate nursing students to transgender health care topics. First, nursing students participated in a contact education seminar. Students engaged with a panel of transgender speakers discussing lived experiences and transgender health education. Second, the students participated in a transgender simulation video series applying the knowledge learned from the seminar. Programs utilizing various and interactive methods such as panels or simulations are more effective in changing attitudes involving LGBTQ persons (Morris et al., 2019). By addressing this gap in nursing education, the goal of the project was to increase knowledge, improve attitudes, and build comfort in nursing students caring for the transgender community.

**Background and Significance**

The National Academy of Medicine (NAOM), has designated transgender health as a research priority and emphasizes the need to address disparities experienced in healthcare settings (Bogard et al., 2017). *The Report of the 2015 U.S Transgender Survey (USTS)* (2016), revealed startling rates of discrimination, stigmatization, harassment, and violence surrounding the most basic elements of life, such as employment, housing, and access to medical care within the transgender community (James et al., 2016). The survey results indicate that 33% of transgender people, often referred to as “trans” within the LGBTQ community, reported at least one negative experience in the past year while receiving healthcare, while 23% of trans people reported delaying healthcare due to fear of mistreatment or discrimination. Poor or fair health was reported by 22% of respondents. An alarming 39% of transgender people experienced serious psychological distress one month before the survey, which is eight times higher than the U.S population (5%). Furthermore, 40% reported having attempted suicide in their lifetime, which is almost nine times greater than the U.S population (4.6%) (James et al., 2016).
*Healthy People 2030* identifies the LGBT community as a population that is significantly impacted by discrimination. Discrimination adversely impacts LGBT individuals through day-to-day stigma, emotional distress, and poor overall health outcomes. Therefore, further research to understand and eliminate discrimination barriers has become a national priority to improve overall health ([Office of Disease Prevention and Health Promotion [ODPHP], n.d.]). Two prominent healthcare barriers for transgender people identified throughout research are the lack of knowledgeable providers and fear of discrimination or rejection in a healthcare setting (Puckett et al., 2018). Discrimination and the lack of competent providers have been directly linked to the delay or avoidance of healthcare by transgender people (Jaffee et al., 2016). On an average day, over 50% of trans people will delay healthcare (Lerner et al., 2017). *The USTS (2016)* states 24% of transgender people report having to teach their providers about their healthcare needs, while only 6% feel their primary care provider is knowledgeable about transgender health (James et al., 2016). Negative outcomes are perpetuated and magnified when healthcare providers are inadequately prepared to competently care for transgender individuals (Lim et al., 2015). As a result, transgender clients are more likely to postpone or avoid care when providers are inadequately trained and propagate stigmatization (Jaffee et al., 2016). In turn, delayed care leads to recurrent healthcare crises that can manifest into improper resource utilization and increasing health care costs. Transgender health research sheds light on the overall harmful effects of discrimination toward the transgender community. Healthcare disparities affect students, healthcare providers, transgender people, and their respective healthcare systems.

According to Lim & Hsu (2016), nursing students’ negative attitudes, deficient knowledge, and discomfort with transgender clients have lasting negative influences on
professional practice. Carabez et al. (2015) found that nearly 40% of baccalaureate nursing students felt unprepared to care for LGBTQ clients. Furthermore, 85% of the nursing students report receiving inadequate education from their nursing programs and relied on alternative methods to gain insight such as personal relations or extracurricular activities (Carabez et al., 2015). One study found 79% of participating nursing school administrators felt that LGBTQ education is important, but 75% of administrators report limited or non-existent LGBTQ education in the curriculum (Lim & Hsu, 2016). Research shows that receiving formal education addressing transgender healthcare issues has a direct result on increasing knowledge, attitudes, and comfort of nursing students (Brown et al., 2017).

A systematic review revealed the most effective way to reduce LGBT bias among healthcare students was to utilize a multi-method formal education approach (Morris et al., 2019). Recent literature emphasizes the importance of formally integrating transgender health education into healthcare curricula and stresses the need for qualified transgender healthcare providers. This project aimed to implement formal education on transgender health issues into nursing curricula through a multi-method education program comprised of a contact education seminar and clinical simulation.

**Needs Assessment**

Knowledge surrounding transgender people is lacking in higher education. School of Nursing's baccalaureate curriculum was reviewed independently as well as with the course faculty. Assessment findings uncover that there is currently no formal education provided on transgender health issues. Faculty express that the inclusion of LGBTQ-related education is at the discretion of the educator. Current practice is inconsistent and leads to an education gap that hinders the future of the nursing practice. Lack of exposure and learning application perpetuates
negative attitudes and incompetence which impedes future students’ clinical practice when working with transgender individuals (Lim & Hsu, 2016). To ensure nurses provide safe and affirmative care to the transgender community, nurse faculty are responsible for providing the knowledge, exposure, and skills to their aspiring students (Maruca et al., 2018).

**SWOT Analysis**

*Strengths*

The strengths of this project lie within the willingness of the School of Nursing and faculty to develop and implement a multi-method education program. The intervention aligns with School of Nursing’s core values, ideals, and goals. is devoted to diversity, inclusion, innovation, and honoring humanity (School of Nursing, n.d.a). The project exemplifies respecting diversity, honoring the humanity of transgender individuals, and providing competent care to disenfranchised communities. Additionally, School of Nursing is equipped with the resources to integrate the project interventions such as campus-community partnerships, academic space, equipment, and simulation labs. Education interventions were developed using the current evidence-based practice recommendations.

A synthesis of the current evidence shows that certain education aspects must be implemented simultaneously to improve the LGBTQ cultural competence of nursing students. The education aspects are formally integrated education, contact with members of the community, and interactive learning experiences (Orgel, 2017). Each DNP project team member offers valuable insight by either identifying within the LGBTQ community, as an expert in transgender healthcare, or as academic leaders for University. This brings an authentic perspective to this project and ensures the education provided aligns with the needs of the community.
Weaknesses

The prominent weakness at the study site is the lack of dedicated education for transgender health care. Research shows promise in utilizing contact education and simulation experiences separately, but few studies have been conducted using these proposed interventions together. This project is preliminary in studying the effectiveness of simulation, contact education, or a combined approach when preparing pre-licensure nursing students to care for transgender clients (Orgel, 2017).

Opportunities

Due to the current lack of formal transgender education in the curricula, the intervention leads to opportunities for integration. The students who complete the education program can acclimate the information to improve their perceptions, attitudes, and comfort in providing affirmative and competent care to transgender clients. Furthermore, the School of Nursing curriculum can adapt the multi-method education approach for LGBTQ education for future students.

Threats

The education program challenges the participants, their personal values, and beliefs. Brown et al. (2017) state personal values include political views, religious beliefs, and social justice opinions. These factors influence a student’s openness to learning and changing attitudes which can alter the effectiveness of the project positively or negatively. If nursing students approach this education program with internal bias and negative attitudes this could lead to a potential disruption in the education experience along with skewed results. Attitudes of the nursing students and naive faculty could also affect the transgender educational speakers and the environment during the simulation. Due to the potential consequences, students and faculty were
provided education to prepare before both interventions to help recognize unconscious bias or negative perceptions and mitigate them before the education experience.

**Purpose Statement**

The purpose of this project is to determine whether a multi-method education program for junior-level nursing students will improve knowledge, attitudes, and comfort levels when caring for members of the transgender community.

**Clinical Question**

Do junior-level undergraduate nursing students report improved knowledge, attitudes, and comfort when preparing to care for members of the transgender community after participating in a multi-method education program utilizing contact education and a clinical simulation experience?

**Population**

Level 1 (junior) undergraduate nursing students at University School of Nursing: enrolled in the Nursing Provider I course. The program at is a 2+2 model. Students completed two years at a community college then transferred to School of nursing for the last two years.

**Intervention**

A multi-method education program comprised of a contact education seminar utilizing members of the transgender community followed by a simulation video series.

**Comparison**

Knowledge, attitudes, and comfort levels of nursing students before the implementation of a formal education program were compared to the same measures after the intervention.

**Outcome**
The planned outcome is to improve knowledge, attitudes, and comfort of nursing students when caring for members of the transgender community.

**Time**

The project took place over one month. Each phase was scheduled during class lectures and scheduled Clinical Learning Lab (CCL) classes. First, the students attended the informed consent discussion followed by the education seminar. Next, the students were divided into six groups of ten for the transgender simulation video series.

**Aims & Objectives**

**Project Aims**

1. This project will increase the overall knowledge of nursing students surrounding the healthcare experiences and issues faced by the transgender community through a multi-method education intervention.

2. This project will promote positive attitudes of nursing students towards transgender health care by providing contact with members of the transgender community.

3. This project will improve the comfort level of nursing students when caring for members of the transgender community through an interactive clinical simulation.

**Objectives**

- Upon completion of the education, seminar participants will be able to identify gender-affirming approaches to healthcare and understand the meaning of gender identity versus sexual orientation.

- Upon completion of the education seminar, participants will explain the discrimination and barriers in health care faced by members of the transgender community
• Upon completion of the education seminar participants will be able to describe healthcare disparities and identify ways to reduce disparities experienced by the transgender community.

• Upon receiving contact education from transgender individuals during the education seminar participants will convey improved positive attitudes surrounding the transgender community.

• Upon completion of the education seminar and clinical simulation, participants will be able to demonstrate therapeutic communication skills to promote trans-affirmative care.

• Upon completion of the clinical simulation participants will be able to recognize and demonstrate behaviors that create a safe, welcoming, and professional working environment.

• Upon completion of the clinical simulation, participants will be able to demonstrate effective communication within the context of trans-affirmative practices.

Review of Literature

Contact Education Seminar Literature Review

A search was conducted using CINAHL, MEDLINE, and PSYCHNET using the words “Nursing Student” AND “Transgender”, limited to scholarly/peer-reviewed results between 2010-2020. The search yielded 43 abstracts from which 21 articles were reviewed and 8 articles were included in the literature review. Articles included focused on nursing students’ perceptions surrounding the transgender community and teaching interventions to improve attitudes and knowledge of nursing students (See Appendix A).

The literature revealed nursing students exhibit a significant lack of positive attitudes surrounding the transgender community. In a systematic review designed to assess the attitudes
of nursing students towards the LGBT community, it was found that 2000 studies demonstrated an extremely high percentage of negative attitudes, and the most current studies revealed less than 50% of students exhibit positive attitudes towards the LGBT community (Lim & Richard, 2017). The review revealed a major lack of consistent education in nursing curricula surrounding this topic, which is linked to the slow progression of positive attitudes surrounding the LGBT community (Lim & Richard, 2017).

Student nurses report in multiple studies feeling uncomfortable, unprepared and lacking the education and experience needed to care for the LGBT community, especially the transgender population (Greene et al., 2018, Brown et al., 2017, Carabez et al., 2016). Studies reveal most students have had little to no formal education, experience, or contact with members of the trans community leaving students to feel incompetent and unprepared to care for this minority population (Greene et al., 3018, Brown et al., 2017). One study polled 600 members of interdisciplinary healthcare programs at an urban college in New York (nursing, social work, and occupational therapy) and found moderate to high levels of transphobia in 45% of the students. In this study, 75% of students have low levels of exposure to transgender education, and only 7% have had contact or experience with transgender individuals (Gila, 2017). This study speaks to the direct correlation between the lack of education, contact, and ongoing negative views of students towards the transgender community.

A second search was conducted using CINHAL and PUBMED using the keywords “transgender” and “barriers to healthcare”. Search results yielded 118 abstracts of which 6 articles were used in the literature review. Articles were excluded if they studied a specific transgender population such as HIV or age-related concerns, or if they were from a country outside of the U.S. Multiple literature reviews and systematic reviews repeatedly found two
common themes surrounding the barriers to care among transgender individuals: lack of provider knowledge and previous negative experiences or discrimination/anticipation of negative experiences or discrimination surrounding healthcare (Lerner & Robles, 2017, Cicero et al., 2019, Kcomt., 2019, Gonzales & Henning Smith., 2017). The 2015 U.S. Transgender Survey reveals results consistent with these themes. In the survey 33% report having at least one negative experience in healthcare, 23% report delaying care due to fear of being mistreated, 40% report having attempted suicide once in their lifetime, and 22% report their health as poor or fair (James et al., 2016). USTS (2015) also revealed almost ¼ of transgender individuals felt as though they had to teach their providers about being transgender and only 6% report their providers were knowledgeable about transgender health (James et al., 2016). These results further validate the themes that the transgender community reports to help educate providers on transgender healthcare.

A third search was conducted using CINHAL and MEDLINE using the words “nursing student”, “transgender”, and “contact or experience education”. The search populated 19 abstracts of which 8 articles were reviewed and 5 included in this literature review. Articles discussed improving attitudes of nursing students towards the transgender community or providing education using contact with a minority group.

The literature revealed that to effectively improve LGBTQ cultural competency in nursing students’, education must use a multi-method intervention approach to improve the multifaceted dimensions surrounding culturally competent care (Orgel., 2017). A systematic review was performed of the current evidence to determine the most effective ways to improve LGBTQ cultural competence among nursing students and found that to affect change three components must be provided in an intervention: formal education, contact with the minority
group, and interactive experiences (Orgel, 2017). The review determined when interventions are combined, they are much more effective at increasing knowledge, improving positive attitudes, and increasing comfort levels among nursing students (Orgel., 2017). Attitudes showed to be most improved when education was combined with face-to-face contact of minority group members, while comfort and confidence were most improved using interactive and experiential learning (Orgel., 2017). These findings support the importance of combining multiple education methods to make an impact and promote positive changes to decrease trans prejudice and improve attitudes and confidence among nursing students (Orgel., 2017).

Another systemic review assessed articles from March 2005 to February 2017 and found similar results: bias-focused education increases knowledge in nursing students while interactive training increases comfort and confidence levels (Morris et al., 2019). Multiple studies found that an effective and long-lasting way to improve attitudes towards the transgender community is by providing interpersonal contact with transgender individuals (Orgel., 2017, Walch et al., 2012). Walch (2012) uses Allport’s Intergroup Contact Theory to reduce trans stigma among nursing students. This study found when using the principles of intergroup contact and a speaker panel of transgender individuals, a significant decrease in transphobia and increasing positive attitudes towards the transgender community occurred after the transgender speaker panel (Walch et al., 2012). Intergroup Contact Theory has been proven effective through a meta-analytic review of 515 studies. The review found that intergroup contact has a significant impact on reducing intergroup prejudice; and further adds that when Allport’s optimal contact conditions - equal status, cooperation, common goals, and support from social/institutional authorities - are applied to group settings, there will be an even greater reduction in prejudice towards the minority group (Pettigrew et al., 1998). Based on the literature, incorporating interpersonal contact into
transgender education is a critical piece to effectively improve the attitudes of nursing students towards the transgender community.

**Clinical Simulation Literature Review**

An initial search was conducted through the databases, CINAHL, MEDLINE, and LGBT Life, using the terms “nursing students or nursing education”, AND “transgender or transsexual or transexual” AND “attitudes OR beliefs OR comfort”. The filters were the English language, scholarly or peer-reviewed, and published dates from 2014 to 2020. Search results yielded 110 articles. Studies were included if they discussed the attitudes, beliefs, comfort, and confidence of nursing students or registered nurses toward transgender clients, and educational interventions affecting care for transgender individuals. Duplicates and studies that did not meet inclusion criteria for the DNP project were discarded. 101 studies were discarded, and nine studies were reviewed (see Appendix B).

Despite recent social progress, the nursing profession has been slow to advocating trans-affirmative practice changes (Lim & Hsu, 2016). The review of literature exemplifies an education gap of transgender education in the pre-licensure nursing curriculum. Carabez et al. (2015) found that nearly 40% of baccalaureate nursing students felt unprepared to care for LGBTQ clients. Furthermore, 85% of nursing students reported no dedicated LGBTQ education in the curriculum. Additionally, 50% report limited knowledge and awareness of LGBTQ topics. The estimated median time for LGBTQ health education is 2.12 hours in baccalaureate programs. Nursing students’ negative attitudes, knowledge, and comfort deficits toward transgender clients have a long-term influence on clinical practice. Stewart and O’Reilly (2017) identified that some practicing nurses exhibited limited knowledge about transgender health needs. Transgender clients report having to teach providers supporting apparent knowledge and
training gaps. Furthermore, transgender individuals frequently report difficulties with healthcare providers through misgendering, ridicule, and harassment. Some providers regarded sexual and gender minorities as treatable pathology typically in the mental health domain. Ineffective provider training for transgender client needs perpetuates their significant health disparities.

Research supports multiple methods of education to improve knowledge, attitudes, and comfort when providing care to transgender individuals (Brown et al., 2017; Carabez et al., 2015; Morris et al., 2019). A systematic review by Morris et al. (2019) discussed specific education modalities and their most effective intention for change. LGBTQ and related health knowledge increased with educational programs such as lectures, videos, and seminars presented by LGBTQ-identifying individuals. Similarly, intergroup contact education was efficient in improving attitudes. Experiential learning such as simulation or role-play improved comfort levels by practicing communication and nursing skills. Simulation is an evidence-based intervention widely used in health care student curriculums, but it also is regarded as an effective bridge to the LGBTQ education gap (Hickerson et al., 2018; Morris et al., 2019). Additionally, the simulation setting allows students to refine client-centered care skills such as asking the client about their preferred name and pronouns as well as treating them with respect and dignity (Diaz et al., 2017; Maruca et al., 2018). Lim and Hsu (2016) state that education interventions should affect the cognitive, affective, and psychomotor domains of the student to change attitudes. Interactions with LGBTQ identifying individuals move prejudice toward empathy which is vital for providing client-centered care.

Two simulation studies were designed using the NLN Jeffries Simulation Theory Framework (Diaz et al., 2017; Maruca et al., 2018). The theoretical framework highlights the importance of the facilitator and participant’s debriefing to reflect on outcomes relevant to the
participant, client, and systems (Jeffries et al., 2015). Reflection is a common intervention utilized in the research which is typically in the form of pre-and post-test self-assessment or debriefing discussions. Allowing students to reflect on their values and beliefs is the initial step for cultural sensitivity and changing attitudes (Brown et al., 2017; Hickerson et al., 2018; Maruca et al., 2018; Morris et al., 2019).

Theoretical and Conceptual Frameworks

Benner’s theory of Novice to Expert was used as the theoretical framework for the overall project. Benner (1982) states building skilled performance is based on experience as well as education. Benner describes five levels of the dynamic knowledge and skill acquisition process that one must pass through to develop skilled performance: novice, advanced beginner, competent, proficient, and expert (Benner, 1982). This project looked to move nursing students from the novice level to advanced beginner, to possess the skills needed when entering the nursing field to confidently move through the levels and become the expert. Benner (1982) explains that a novice has no background experience which typically applies to nursing students or providers inexperienced in a specific area of practice. Novice nurses are guided by rules that have been taught to them while having no relevant real-life experiences. Advanced beginners are the next step towards an expert skillset. Advanced beginners can demonstrate marginally acceptable performance, have experienced some real-life situations, and can effectively recognize meaningful components of situations based on previous experiences (Benner, 1982). Participating nursing students are considered in the novice stage of Benner’s theory. The overall goal of this project was to provide nursing students with the education and real-life experiences to help move them from a novice to advanced beginner skillset. Both interventions provided an opportunity for initial exposure to improve understanding of transgender individuals and their
needs. In the simulation, students applied new knowledge and skills such as therapeutic communication to provide basic care.

**Contact Education Seminar Theoretical Framework**

The contact education portion of the multi-method program followed the conceptual framework of the Intergroup Contact Theory, originated by Allport in 1954 and further expanded by Thomas Pettigrew in 1998. Allport’s *Intergroup Contact Hypothesis* states positive effect from intergroup contact and reduction in prejudice can only occur if four conditions are present during the contact: equal status, cooperation, common goals, and support from social or institutional authorities (Pettigrew, 1998). The theory was expanded by Pettigrew to include that for effective change and improvement in attitudes four processes are critical: learning about the out-group, changing behaviors, generating affective ties, and in-group reappraisal (Pettigrew, 1998). Pettigrew explains the importance of the “friend potential” between the in-group and the out-group or minority group, and creating emotion is a critical component to reduce prejudice through intergroup contact.

This project followed the Intergroup Contact Theory by providing an education contact seminar that utilized a transgender speaker panel to discuss transgender healthcare, provide lived experiences, and education on the transgender community. The panel was made up of transgender individuals who can be seen as of equal status to nursing students. The education was also provided in a panel discussion format, where the students were actively involved, and there were common goals set forth for both groups. Students were also able to opt-out of the presentation and perform an alternative assignment, aligning with the principle that cooperation is needed among both groups. Lived fully supported the project and provided supportive information to students surrounding the education. Lived
experiences created an opportunity for students to build empathetic connections with the speakers. By incorporating these elements, the seminar hoped to elicit emotion and create a “friend potential” among the nursing students and the speaker panel. The project followed Allport’s Intergroup Hypothesis as shown in Appendix C, by providing the right conditions and moderators to improve cognitive, affective, and behavioral mediators which likely leads to an intergroup bias reduction. This unique education program followed the Intergroup Contact Theory to overall increase knowledge and improve attitudes of nursing students towards the transgender community.

Clinical Simulation Theoretical Framework

The transgender simulation video series was guided by the National League of Nursing (NLN) Jeffries Simulation Theory (Jeffries et al., 2015). This theoretical framework is used in nursing education, research, evidence-based practice, and guides the design, implementation, and evaluation of simulations. NLN Jeffries Simulation Theory’s concepts include the context and background, design, simulation experience, the facilitator and their education strategy, participants, and the outcomes (Jeffries et al., 2015). Context includes the setting and circumstances that impact the design and evaluation of the simulation. Background concept includes the goals and principal purpose within the curriculum. Simulation design is guided by the learning objectives and includes decisions affecting fidelity, roles, and activities. Jeffries et al. (2015) define the simulation experience as a learner-centered, interactive, collaborative, and experiential environment. Simulation roles include the facilitator and participant, and their relationship is dynamic throughout the simulation. Authenticity and trust are important to uphold within the learning environment. The facilitator role is responsible for the progression, timing,
and feedback during cues and the debriefing period. Lastly, the simulation outcomes are
categorized for the participant, client, and the system (see Appendix D).

The simulation was designed using evidence-based transgender simulation developed by
Montgomery College following NLN’s simulation template (Montgomery College, 2016).
Learning objectives aligned with junior-level nursing students’ course curriculum. Project co-
investigators took on the facilitating role of collaborating with the students throughout the
simulation. Students connected with the simulated transgender client using their empathy,
therapeutic communication, and patient-centered care techniques. Ultimately, the simulated
learning environment was safe to authentically practice without any repercussions as opposed to
real client interactions. After the simulation, a debriefing allowed reflection of new knowledge to
integrate with personal attitudes and values. Pre-licensure education such as this project is
integral to promote trans-affirmative care. As a result, more nurses can enter the field feeling
ready to care for transgender individuals which ultimately impacts the community and healthcare
systems.

Methodology

Design of Project

This project provided transgender education by utilizing a contact education seminar
followed by the application of learned skills through a clinical simulation video series. This
multi-method structure is an effective approach to ensure understanding of content and increase
the ability to incorporate knowledge into practice. The project used mixed methodology to
evaluate this innovative education program. Quantitative data was collected through an online
survey distributed to participants at three points throughout the overall intervention: before the
education seminar, between the seminar and clinical simulation, and after the completion of the
simulation. Qualitative data was collected from open-ended survey questions, during the pre-intervention survey, and post-debriefings after the simulation.

The two methods were completed in succession to evaluate the effectiveness of utilizing a multi-method approach to improve the overall perceptions of students towards the transgender community. By collecting both quantitative and qualitative data the project was able to objectively determine if knowledge, attitudes, and comfort levels improved after the intervention along with collecting real-life perceptions of the impact the intervention had on nursing students.

Setting

The project was implemented through virtual conferences using Cisco WebEx®. Participants were enrolled at [redacted], located at [redacted].

Study Population

Inclusion criterion was junior-level nursing students enrolled in the Nursing Care Provider I course. Students at this level are beginning clinical rotations where they learn how to interact and build relationships with clients. The exclusion criterion was any student not enrolled in the Nursing Care Provider I course at the time of the intervention. Care Provider I is an introductory course that prepares the student for clinical rotations. In this course, students are beginning to learn how to build a therapeutic relationship with clients. The DNP project provided students with trans-affirmative education and skills that can be applied to future clinical learning and professional practice. The sample size was 60 students which are comparable to an average size nursing cohort.

Subject Recruitment
The participants were recruited through their enrollment in the Care Provider I course. The project was integrated into the course curriculum with faculty approval. Participation was voluntary and had no impact on their final grade. However, students who opted out of the project were given an alternative assignment to fulfill the education requirement which was approved by the course faculty.

Students were provided with the course syllabus at the beginning of the Fall 2020 semester which outlined project logistics and expectations. An information forum was held one week before implementation to provide informed consent and discuss expectations, questions, and concerns.

**Consent Procedure**

The consent form was distributed through the course syllabus, e-mail at various time points, and provided before completing each online survey. During the pre-assignment phase, one hour was allotted for consent discussion with participants provided by the co-investigators in the presence of the primary investigator. At the end of the discussion, the students were e-mailed an online consent form with the first online survey. By clicking agree, starting the survey, and participating in the research, the students acknowledged understanding and agreement to take part in the project with the ability to withdraw participation at any time.

**Risks/Harms/Ethics**

Participation in the project posed minimal risk. Mild discomfort could have been evoked by personal feelings surrounding the project topic. No personal information was collected. Surveys were anonymous leaving the risk of association to responses highly unlikely.

**Subject Costs and Compensation**
The project had no associated costs or compensation. Participants were not financially impacted. Participation had no impact on the cost of enrollment in the course.

**Study Intervention**

The two-part education program utilized a contact education seminar and a simulation video series addressing transgender health. The two interventions were completed in succession. During the seminar members of the transgender community engaged with students and introduced relevant education topics. Afterward, students applied the knowledge learned from the seminar in a simulated learning environment. The project aimed to improve the knowledge, attitudes, and comfort levels of pre-licensure nursing students.

To adhere to COVID-19 safety guidelines, the entire project was implemented through Cisco WebEx®. The surveys were distributed through email and completed anonymously by each participant through the Qualtrics program, which is provided to students by [University] for data collection. Participants were allotted 10 minutes to complete the TABS survey during the three assigned Cisco WebEx® conferences: Pre-intervention, Mid-intervention, and Post-intervention.

**Pre-Assignment & Survey One**

During the first week of the Fall 2020 semester, students received project information and a copy of the consent in the course syllabus. One week before the intervention, students participated in the pre-assignment and informed consent discussion. During this conference, the co-investigators outlined the project expectations, addressed questions and concerns, explained the consent process and the alternative assignment. To support the discussion, a copy of the consent was e-mailed to students one week before the discussion as well as after the discussion. Participating in the DNP project acknowledges consent without the need for a signature.
The Transgender Attitudes and Beliefs (TABS) scale, (see Appendix E), was integrated into the online survey. The TABS scale is divided into three categories: interpersonal comfort, sex/gender beliefs, and human value, which has been proven reliable and valid to measure attitudes, beliefs, and comfort levels surrounding the transgender community (Kanamori et al., 2017). Surveys also incorporated three open-ended questions to gauge baseline knowledge, attitudes, and comfort regarding the transgender community.

**Intervention One: Contact Education Seminar & Survey Two**

The contact education seminar was held virtually through Cisco WebEx®. One education seminar was held for all participants during the overall intervention. The seminar was an hour long and hosted by one co-investigator along with two members of the transgender community. This was done to promote equal status between the presenters and students. Equal status within contact situations promotes an effective reduction in bias, improvement in attitudes, and has been shown to promote a more receptive response to the information provided (Pettigrew, 1998). The seminar was presented using a panel-style design, which promoted a conversation-type experience between equal status groups. Education key points were delivered simultaneously with transgender presenters’ experiences surrounding the specific education topic. This design was structured to provide knowledge along with humanistic experiences to elicit a more receptive and impactful response (Walch et al., 2012).

A PowerPoint presentation was utilized as a guide for the seminar topics being covered. The PowerPoint was created using the Center of Disease Control (CDC) (n.d), guidelines on *Client-Centered Care for Transgender People: Recommended Practices for Health Care Settings*. Information provided by the National LGBT Health Education Center, A Program of the Fenway Institute (2020), *Affirmative Services for Transgender and Gender-Diverse People,*
Best Practices for Frontline Healthcare Staff was also incorporated into the presentation. Key points, pictures, and simple overviews of each topic were covered in the PowerPoint and expanded on by the co-investigator and presenters. By utilizing these two resources, the project combined the most recent and pertinent information to promote affirmative, positive interactions by healthcare professionals when caring for transgender people. The PowerPoint presentation was divided into three topics derived from the research: Understanding Transgender People and Their Health Needs, Client-Centered Healthcare and Communication Strategies, and Tips for Promoting Positive Communication with Transgender People.

Understanding Transgender People and Their Health Needs was provided to expand students’ knowledge of the transgender community. The content addressed the definition of transgender, gender identity, vs. sexual orientation, gender-affirming processes, and disparities and barriers in healthcare faced by the community. After this section students were able to explain gender identity and have a realistic picture of the transgender community's experiences when utilizing the healthcare system (Center for Disease Control, ND, Affirmative Services for Transgender and Gender-Diverse People, Best Practices for Frontline Healthcare Staff, 2020).

Client-Centered Healthcare and Communication Strategies provided a basic overview of how to create a welcoming environment for transgender people. This education covered effective communication tools, explanation of pronouns and how to address clients, tips to provide respectful communication, and how to create a gender-affirming environment (Center for Disease Control, ND, Affirmative Services for Transgender and Gender-Diverse People, Best Practices for Frontline Healthcare Staff, 2020).

Tips for Promoting Positive Communication with Transgender People included real-life examples of communication tips to use in everyday professional practice. These tips included
ways to address clients, how to ask a client’s name and pronouns, how to ask for information when providing care, and how to correct communication mistakes (Center for Disease Control, ND, Affirmative Services for Transgender and Gender-Diverse People, Best Practices for Frontline Healthcare Staff, 2020).

After these topics were presented it was expected for students to have a clear understanding of the definition of transgender, understand the healthcare barriers faced by the community, and have effective communication skills to utilize when interacting with transgender people. This education provided a foundation for students as they enter the next phase of the intervention, the simulation video series. Following the contact education seminar, the participants completed the second TABS survey.

**Intervention Two: Simulation Video Series**

Simulation is an evidence-based intervention common in health care training. Furthermore, it was found to be an effective bridge to the LGBTQ education gap (Hickerson et al., 2018; Morris et al., 2019). The simulated setting allowed students to practice patient-centered care and therapeutic communication such as asking clients about their personal names and pronouns while treating them with respect and dignity (Diaz et al., 2017; Maruca et al., 2018). The simulation was guided by the National League for Nursing (NLN) Jeffries Simulation Framework (Jeffries et al., 2015).

The video series utilized a simulation design and video from Montgomery College. Sixty participants were divided into six cohorts of ten students and given one hour for the simulation. Students followed a transgender client’s experience in a primary care setting and interactions with staff (Montgomery College, 2016). The video was separated into four parts depicting an array of trans-affirmative practices and areas of improvement. Co-investigators facilitated the
experience by examining key teaching points such as ethical implications, therapeutic and professional communication, and creating an inclusive environment. Students then also reflected and shared their perspectives.

Additionally, each section included “Practice Time”, a segment where students practice dialogue as if they were interacting with the client or co-worker from the simulation video. “Practice Time” allows students to put into practice communication skills, patient advocacy, peer education, cultural competency, and build comfort.

**Debriefing & Survey Three**

After the simulation, the participants debriefed with the co-investigators regarding their simulation experience as well as the overall multi-method education program. Allowing students to reflect on their experiences and beliefs is vital for introducing cultural sensitivity and changing attitudes (Brown et al., 2017; Hickerson et al., 2018; Maruca et al., 2018; Morris et al., 2019). The debriefing was allotted 15 minutes. During the debriefing, participants discussed their experiences, concerns, and overall opinions.

After the debriefing, the final TABS survey was completed which open-ended reflection questions as an opportunity for those who felt uncomfortable to share during the debriefing. This qualitative data offered valuable feedback regarding the impact of a multi-method education program and how it can be integrated into the curriculum for future iterations of the project.

**Outcomes to be Measured**

The intervention measured the three overall aims of the project: knowledge, attitudes, and comfort levels of nursing students when addressing the transgender community. The project utilized the Transgender Attitudes and Beliefs (TABS) scale to assess the knowledge (sex/gender beliefs), attitudes (human values), and comfort (interpersonal comfort) levels of nursing students.
at three critical points. TABS scale has been proven through a meta-analysis to be psychometrically sound with demonstrated reliability and validity. TABS has been shown to capture a nuanced conceptualization of attitudes and comfortability towards transgender people (Kanamori et al., 2017).

The evaluation survey was provided at three critical points: before the implementation of the intervention, after implementation of the contact education seminar, and after completion of the overall intervention. The design was structured to be able to assess knowledge, attitudes, and comfort level before and after each intervention and after completion of both interventions together. This design looked to determine if multiple methods of learning experiences provided together would elicit a more impactful change to the overall student perspective towards the transgender community.

The students also participated in a debriefing group following the overall intervention to provide qualitative data on their experiences and feelings towards the simulation, contact education seminar, and overall multi-method intervention experience. This data was collected to gather the positive and negative feedback from students to incorporate in further revisions and replications of the project. All data were anonymously collected, with no student identifiers. The only identifiable information was the survey number indicating from which collection period the data was obtained.

**Economic Considerations**

The content for the education seminar has been obtained at no cost by the associated organizations: The CDC and Fenway Institute. Co-investigators obtained permission to use the TABS survey at no cost. Transgender speakers volunteered their time to provide the contact education seminar, so no cost was incurred for their participation. There was no cost to utilize the
clinical simulation video series; permission was obtained. The overall intervention was provided virtually through Cisco WebEx®, and no compensation was needed to utilize the virtual platform. Any material associated with this project was the sole responsibility of the co-investigators. No cost was incurred during the construction of any educational materials.

**Data Collection, Maintenance, and Analysis**

The anonymous survey was developed and collected through Qualtrics survey software offered by Rutgers University. Participants received the survey link via e-mail. The data was collected and stored on an encrypted laptop. Surveys were organized into three collection periods for analysis: pre-intervention, mid-intervention, and post-intervention. Data was analyzed using IBM SPSS 27. After the completion of the project and closure of the IRB, all data will be destroyed following Rutgers University guidelines.

**Quantitative Data**

**Quantitative Analysis**

The TABS is comprised of Likert questions ranging from one (strongly disagree) to seven (strongly agree) assessing knowledge, attitudes, and comfort. First, when a question assessed a negative perception toward the transgender community, the scores were reverse coded. Afterward, the average mean of each measurable outcome: knowledge, comfort, and attitude levels were calculated using the participants’ responses at the three critical time points: pre-intervention, mid-intervention, and post-intervention (See Appendix F). In the overall mean scores, one depicted a deficit in the measurable area, whereas seven depicted competency. Lastly, a Friedman test was run to determine if there were statistically significant differences in knowledge, comfort, and attitude levels during the Multi-Method Transgender Education
Program. Pairwise comparisons were performed (SPSS Statistics, 2012) with a Bonferroni correction for multiple comparisons.

**Quantitative Results**

Knowledge levels were statistically significantly different at only one critical time point during the overall intervention, $\chi^2(2) = 10.729$, $p = 0.005$. Post hoc analysis revealed statistically significant difference in Knowledge levels from Pre-Intervention (Mdn = 5.550) to Post-Intervention (Mdn = 6.500) ($p = .004$). No statistically significant differences in scores were observed Pre- to Mid- or Mid- to Post-Intervention.

Comfort levels were statistically significantly different at only one critical time point during the overall education intervention, $\chi^2(2) = 8.470$, $p = 0.014$. Post hoc analysis revealed statistically significant difference in Comfort levels from Pre-Intervention (Mdn = 6.536) to Post-Intervention (Mdn = 7.000) ($p =0.020$). No statistically significant differences in scores were observed Pre-to Mid Intervention or Mid to Post-Intervention.

Average Attitude and Human Value levels fluctuated from Pre- (Mean = 6.730), to Mid- (Mean = 6.873), to Post-intervention (Mean = 6.780). Attitude levels maintained from Pre- (Mdn = 7.000) to Mid- (Mdn = 7.000), to post-intervention (Mdn = 7.000), and the differences were not statistically significant, $\chi^2(2) = 1.161$, $p = 0.560$. No statistical significant differences were observed in attitude levels at any critical points throughout the overall intervention.

**Qualitative Data**

**Qualitative Analysis**

Qualitative data was collected at two critical points during the project: pre-intervention and post-intervention. Before implementation students were asked “What are your concerns surrounding caring for transgender individuals?” and “Do you have any questions/concerns you
would like to see addressed in the education seminar?” After implementation students were asked, “After participating, how do you currently feel about caring for a transgender individual?”, “What have you learned after participating in this education program? Please provide examples.” and “What have you liked or disliked about this project? Please provide examples.” Using a deductive approach, key themes were identified surrounding nursing students' perceptions of caring for transgender individuals pre-and post-intervention.

**Qualitative Results: Pre-Intervention**

*Avoiding Indirectly “Offending” Transgender Individuals*

The major theme identified prior to implementation was students’ concerns surrounding inadvertently offending transgender individuals during care. One in three students listed their biggest concern surrounded not saying or doing anything that could offend transgender individuals. Some examples of students’ responses were: “I would be worried about offending a transgender person using the wrong terms or asking questions.”, “My greatest concern would be to indirectly offend them while giving them care.”, “My biggest concern would be the possibility of offending my patient.”, “My concern is worrying that I would do or say something to inadvertently offend them.”

*How to Make Transgender Individuals Feel “Comfortable”*

The second major theme identified was the concern of how to make transgender individuals feel comfortable and avoiding care that could make a person feel uncomfortable. One in three students' responses included providing comfortable experiences for the transgender community. Students revealed learning how to create an environment that makes people feel comfortable is considerably important to them. Before the implementation, their concerns focused on the inability to create a comfortable environment, and fears of making transgender
individuals feel uncomfortable. Some student responses were: “I want to know everything I can to make them feel comfortable and give them the best care possible.”, “How to make them comfortable during nursing interviews.” “Knowing how to care for them without making them feel uncomfortable.” “Creating a good nurse-client relationship to make them comfortable and treat them as a human being.”.

“Understand” What it Means to be Transgender

One in four students revealed their biggest concern when caring for the transgender community was not having the knowledge or understanding of what it means to be transgender and the issues faced by the community. Most concerns surrounded not having enough knowledge or understanding of what it means to be transgender to provide care. Some examples of student responses were, “My concern is not knowing enough information or not having enough knowledge required to provide the best care for the patient.”, “Understanding the need of transgender people.”, “I just want to learn about the problems transgender individuals face every day in the U.S. healthcare system so that I can better my care for my future patients.” and “What are some current issues that exist in current healthcare practices and what can we do as nurses to address them?”

How to Use the Correct “Pronouns” During Care

The last theme identified before implementation surrounded students concerns with utilizing personal pronouns and how to address transgender individuals. One in four students identified specific concerns about using the wrong pronouns when providing care and learning how to address pronouns with transgender individuals. Some concerns shared by students were, “Using the wrong pronouns while caring for a transgender patient.”, “I want to try to be as helpful as possible without accidentally using the wrong pronouns/names if they haven’t fully
transitioned.” “How to use appropriate pronouns to communicate with transgender people.”, and “How to properly and appropriately ask how transgender individuals identify.”

Qualitative Results: Post-Intervention

“Confident” And “Comfortable” When Providing Care

The major theme identified when students were asked how they feel about caring for transgender individuals' post-intervention were students felt more confident and comfortable to provide care. 1 out of every 2 responses, over 55%, from students report feeling confident and more comfortable to create relationships, provide care, and interact with members of the transgender community. Some responses post-intervention were, “I feel confident in caring for a transgender individual, I definitely feel like this simulation lab helped me.”, “I feel more confident in my ability to provide the best possible care to transgender patients.”, “I feel more confident in my communication skills in how to interact with transgender individuals.”, “I feel more knowledgeable and comfortable caring for a transgender individual.” “I feel very confident after attending the seminar and the simulation about taking care of a transgender client.”, and “I would feel comfortable caring for a transgender patient”.

More “Prepared” and “Knowledgeable” to Care for Transgender Individuals

The second major theme identified when students were asked how they feel about caring for the transgender community post-intervention was students felt more prepared and knowledgeable to provide care. One in three students identified feeling more prepared to communicate, establish relationships, and overall provide care to the transgender community. Some responses were: “I feel much more prepared to care for transgender individuals with overall better competency.”, “I feel more knowledgeable on how to treat and care for a transgender patient.”, “I feel more prepared to care for their needs and not offend them while
providing care.”, “I feel much more prepared after this sim if I have a transgender patient and being able to ensure their comfort and provide the best possible care for my patient when I become a nurse.”, “Much more prepared and empowered!”.

**Learned About “Barriers” Faced by the Transgender Community**

One major theme identified when students were asked what they learned from the project included barriers experienced by the transgender community. Two out of five students report learning about the lack of competent providers, prolonged wait times to access trans-affirmative care, complex processes to transition physically and legally, negative experiences in healthcare, and delays in healthcare. Students shared learning about the barriers faced in healthcare was the most surprising and impactful lesson from the education program. Some examples of responses were, “I learned that transgender individuals can go through a lot when they are getting cared for due to the possible lack of education of the staff.”, “I’ve learned about how long the process takes to make it official, and legally transition.”, “I have learned about all the struggles transgender people face when trying to find the right medical provider.” “I have learned that transgender people have to go through a lot of trouble to receive competent care from healthcare workers.”, “The medical field still lacks the education to provide for transgenders and this needs to be addressed.”, “I’ve learned that there are many disparities in healthcare”, and “Barriers [transgender people] have.”, “I was also oblivious to the fact that it is very difficult for transgender people to find doctor's offices that are fully welcoming and warm.”.

**Learned How to “Ask / Use Personal Pronouns”**

Another major theme identified when students were asked what they learned from the program was how to address, ask, and use personal pronouns in everyday settings. Two out of five students mentioned feeling competent and prepared to assess personal pronouns along with
gaining an understanding of the importance and how to assess pronouns in practice. Some examples of responses from students were, “How to address and talk to a transgender person without being hurtful and in the most appropriate way.”, “I learned how to avoid misgendering or creating an uncomfortable environment even if it is unintentional. The proper use of pronouns is extremely important to valuing someone's identity”, “Use the preferred name. Ask about pronouns they would like the nurse to use. Make them feel comfortable from the start when they first enter a clinic or care facility.”, “I have learned that it is ok to ask questions such as what they prefer to be called? as well as what are their pronouns?”, “I have learned how to speak appropriately to a transgender individual upon asking what their preferred name is or how to address it properly.”

**Liked the “Simulation” Experience**

When students were asked what they liked about the project one major theme was identified. Most students listed having the opportunity to practice their skills in a clinical simulation environment as what they liked most. Many students explained they liked the education portion provided with real-life experiences, but most importantly they liked being able to implement the education learned during the clinical simulation. One student explained, “I liked how the PowerPoint slides were first because the PowerPoint slides explained what to do in a situation with a transgender patient. After the PowerPoint slides the simulation lab put things into perspective in what it looks like in a real-life situation. Also, the simulation and PowerPoint slides explained what to do and what not to do which was helpful on how to care for a transgender patient.”

**Discussion**
Research has repeatedly identified a healthcare education gap surrounding the transgender community. This gap leaves nurses feeling unprepared to provide gender-affirming care (Carabez et al., 2017). As a result, transgender individuals encounter alarmingly high rates of uneducated providers, discrimination, and negative experiences (James et al., 2016). This study addressed the nursing education gap by providing a multi-method education program involving a contact education seminar with exposure to the transgender community followed by a clinical simulation to enhance comfort when applying the knowledge learned. Research suggests multiple education methods provided concurrently are needed to influence a change in attitudes and inform practice when focusing on minority groups (Morris et al., 2019). The quantitative results support the need for multi-method education by revealing a statistically significant increase in knowledge and comfort levels only after both education methods were completed by participants. Additionally, the qualitative results support students' expressed learning needs and knowledge deficits before the intervention, which were resolved after the multi-method education program.

**Knowledge**

The study reflects knowledge scores were only significantly increased after the implementation of the overall intervention. Knowledge scores after each intervention alone were not significantly increased. Only after evaluation of both interventions provided together was knowledge shown to significantly increase for the participants. Quantitative and qualitative data reflects mid-intervention were not significantly increased, but after the conclusion of the overall project when both interventions were combined, knowledge levels showed a statistically significant increase. The results support current evidence that multi-method education is critically important to increase knowledge of minority groups. The project illustrates, without
multi-method education concepts, the likelihood to increase students' knowledge surrounding the transgender community is minimal.

**Comfort**

The study revealed comfort scores were not significantly increased after implementation of the education seminar but were significantly increased after implementation of the overall project. This evidence suggests students did not feel comfortable engaging the transgender community after the education seminar. It was only after the simulation that comfort scores show a statistically significant increase. Research shows the biggest barrier students face when caring for members of the transgender community is feeling uncomfortable and unconfident. This project provides strong evidence that experiential learning is needed to effectively improve the comfort levels of nursing students caring for transgender individuals. The project supports the concept that along with receiving education on the transgender community students also need a safe space and time during education to practice what they have learned. Combining education and simulation scenarios ensures students have the knowledge and feel comfortable and confident to implement effective changes in practice.

**Attitudes**

Students displayed positive attitudes surrounding the transgender community pre-, mid-, and post-intervention. Attitude scores changed slightly but remained highly positive throughout the entire intervention. The results support that students feel positively towards the transgender community but highlight the lack of knowledge and comfort when caring for transgender individuals. This positive attitude helped students remain receptive to education and open to learning during the clinical simulation, which contributed to the overall improvement of knowledge and comfort.
Overall Findings

The project revealed the overall need for transgender education in nursing school curricula. Students verbalized a lack of education in their baccalaureate program, discomfort, and fears related to caring for transgender individuals. To address this education gap, undergraduate nursing program curricula should provide multi-method education to gain and apply knowledge in safe learning environments. The project supports the use of contact education with transgender individuals and lived experiences followed by simulation to improve knowledge and comfort levels in nursing students. Additionally, findings support previous research stating single method education will have statistically insignificant effects on knowledge and comfort levels. Attitudes remained positive over the entire project and were not significantly changed by either intervention. The data reveals students possessed an open mind and willingness to learn before the intervention and throughout the project. Education programs need to provide multi-method learning opportunities to change practice and effectively care for the transgender community (Morris et al., 2019). The baccalaureate nursing program can incorporate both education methods concurrently to increase knowledge and comfort levels in future cohorts.

Key Facilitators and Barriers

A key facilitator identified for this project was the support of the nursing faculty. Faculty expressed the significant learning deficits surrounding transgender health as well as the temporal significance of pre-licensure learning. Students are unexposed to the clinical setting and are still developing their skills. Faculty support was vital in obtaining site approval and integrating the project into the curriculum.

The biggest barrier during this project was the COVID-19 pandemic. This led to the entire project being transitioned into web-based learning. This changed key elements of the
project and required modifications to ensure that students were given a meaningful learning experience. The seminar was moved to Cisco WebEx® and transgender speakers joined remotely from home. During the simulation, students were given opportunities to role-play virtually.

An additional barrier was the participants' anonymity and voluntary participation. Despite education and encouragement, some students did not fully participate in the overall project. Out of 61 students, 54 completed the baseline survey. After the contact education seminar, 46 students started the survey, but only 44 fully completed the document. At the end of the overall intervention, 51 students completed the survey. Lastly, one student opted for the alternative assignment instead of participating in the clinical simulation. Participants remained anonymous, and no identifiers were collected. Therefore, investigators were unable to track the progress of each participant throughout the study. As a result, potential data and valuable insights were not collected.

**Unintended Consequences**

COVID-19 barriers led to unforeseen and unintended positive and negative consequences during implementation. Negative consequences were observed during the education seminar. Students were less engaged and there was much less dialogue between transgender speakers and students than anticipated. Students were quiet and required prompting to participate in the education seminar. Conversely, positive consequences were observed during the clinical simulation. The initial concern about virtual learning was the lack of an empathetic connection with a client typically seen during an in-person simulation. However, the students felt connected to the client’s experiences in the video series. Video simulation provided an opportunity for students to practice trans-affirmative care and effective communication skills. Also, the virtual
setting offered a safe environment to share, ask questions, and be open about attitudes which would have been difficult and uncomfortable during an in-person environment.

**Implications**

**Clinical Practice**

This project provided a foundation for nursing students entering the workforce to feel confident and prepared when caring for members of the transgender community. By providing education that builds knowledge and comfort students will have the tools necessary and feel capable to implement them into clinical practice. The investigators' goal was to change the care provided to transgender individuals in clinical practice by increasing the knowledge and comfort levels of nursing students.

The education seminar provided students with the foundational skills to understand the transgender community along with basic skills to build therapeutic relationships and provide gender-affirming care. The project then provided students with clinical simulation to allow time to practice the skills learned in the education seminar. By combining these two interventions students felt confident, prepared, and empowered to make changes to their clinical practice.

The goal of this project was to affect change in practice before nurses enter the field. The focus of this project was to give students the skills needed while instilling confidence to create change. It is one thing to provide knowledge; to truly enact change it is critical that education institutions empower students to feel comfortable to implement changes in standards of practice. When we target nursing students on the undergraduate level and ensure they feel comfortable and confident to provide care to transgender individuals, we can create active change agents to promote gender-affirming care in established practices. After the project students not only had
the tools to provide gender-affirming care but felt capable to apply what they had learned into clinical practice.

**Healthcare Policy**

The project brings to light the overwhelming negative experiences and barriers affecting the care of the transgender community. Research reveals the one major factor surrounding the adverse care experienced by transgender individuals is a lack of competent providers to promote gender-affirming care (Cierco et al., 2019). This project equips nursing students with the skills and confidence needed to provide competent care to transgender individuals. Results of this project show the need for transgender education on an undergraduate level for all nursing students. The project emphasizes the need for nursing educational institutions to formally incorporate transgender education as a permanent part of curricula. Also, the project identifies the lack of formal education across specialties. This highlights the need for transgender education to be incorporated throughout education programs, healthcare institutions, and any organization that engages with the transgender community. Results emphasize the overall need for education reform, by formally including transgender healthcare education for any persons that engage or provide care to transgender individuals.

Implementing formal education on the transgender community should be considered for any organization that engages with transgender people. School of Nursing should consider integrating transgender healthcare as a permanent part of the undergraduate curricula. Nursing schools and all healthcare educational institutions or organizations should consider evaluating current programs to ensure transgender healthcare is specifically being addressed, education is being provided, and students are offered simulation to build gender-affirming healthcare practices.
Quality and Safety

Healthy People 2030 identifies discrimination as a key issue contributing to negative LGBT health outcomes (ODPHP, n.d.). According to James et al. (2016), transgender individuals are at higher risk of discrimination, violence, and distress compared to non-transgender persons. The suicide attempt rate for transgender people is nine times higher than the country’s overall population. Alienating actions which can increase the risk of suicide for transgender people are often committed by healthcare workers in the forms of verbal harassment, discrimination, or treatment refusal. Additionally, transgender individuals report having to educate their providers, which is both inappropriate and unsafe. As a result, the transgender community is more likely to delay care until crises due to fear of being mistreated.

The project aligns with Healthy People 2030 goals to improve social and community support, create healthy and safe environments and increase access to high-quality health care services (ODPHP, n.d.). The education program introduced trans-affirmative practices as students developed their clinical foundation. Affirmative care emphasizes the value of therapeutic communication and fostering the nurse-client relationship to meet each client’s specific needs. Students learned about gender identity, the affirmation process, and the harmful mental effects experienced by the transgender community. The education program also emphasized how to create a safe, welcoming, and professional work environment. These topics are integral to become competent healthcare providers. During the simulation, students applied these topics in clinical scenarios to improve comfort in client interactions. Participants expressed an increased understanding of the trans-affirmative practice and healthcare barriers experienced by the transgender community. Although the students would be considered beginners in affirmative practice, they have the potential to flourish with their future clients. For example,
with their understanding of alarming suicide rates, aspiring nurses may learn to screen for mental health issues or suicidality. Additionally, students may feel empowered to advocate for their clients in an interprofessional context especially in times of injustice. The simulation practiced several workplace scenarios where the students intervene and educate their peers. This type of advocacy acknowledges the neglect of transgender clients often by healthcare professionals. Introducing students to beginner-level patient advocacy can develop into workplace involvement by improving policies, procedures, and safety for transgender individuals. Ultimately, the project promotes high-quality, safe, and effective care to transgender individuals by refining nurse-client interactions before nurses enter the workforce.

**Education**

The lack of established transgender education in baccalaureate nursing programs is disconcerting. Nurses expressed propagating stereotypes and negative attitudes as well as feeling unprepared to care for transgender clients. Students reported relying on domains outside of school for LGBTQ exposure or training (Carabez et al., 2015). Pre-licensure education significantly impacts the quality of care of healthcare providers. According to Lim & Hsu (2016), nursing students’ negative attitudes, deficient knowledge, and confidence with transgender clients have a lasting influence on professional practice.

Therefore, the project’s two method approach has significant benefits such as meeting the visual and auditory learning styles. Visual learning needs are provided with reading assignments and PowerPoint slides to supplement the verbal discussion. Students have opportunities to meet and engage with transgender individuals and learn key transgender health topics in a safe learning environment. Afterward, the students are given a more interactive learning experience. The simulation was not able to address the kinesthetic learning style due to COVID-19.
However, the stimulation video series allowed the application and practice of therapeutic
communication in clinical scenarios.

Study findings serve as evidence supporting future iterations. The implementation site
already expressed interest in utilizing the study’s interventions into the curriculum. Faculty at the
site can permanently integrate the multi-method transgender education program. As a result,
students will have prior interactions with transgender individuals and demonstrate beginner-level
affirmative practices before entering the clinical setting.

**Economic**

Academic facilities would be responsible for the seminar and simulation expenses.
However, the current project design utilized resources available to the public domain and free of
charge. Educational materials that were developed for the study will also be free to use such as
the PowerPoint presentation, pre-assignment reading, and the simulation video series. Therefore,
once implemented into the nursing curriculum, the transgender education program would not
incur any additional costs. If necessary, the seminar may involve compensation for the panelists’
participation. The simulation can be revised into an in-person setting which may require fees to
operate the simulation lab. However, there is no additional expense that is beneficial for the
associated academic facility.

Local communities surrounding the academic facility benefit from affirmative education
on a systemic level. Trans-affirmative education prepares healthcare providers by reducing
stigma and improved understanding of the specific needs of the transgender community. Trans-
affirmative education looks to improve healthcare provision, promote engagement, and minimize
delays in healthcare. For example, competent healthcare workers would reduce the likelihood of
transgender individuals feeling uncomfortable, unsafe, or the need to educate their providers. In
turn, transgender individuals can safely engage in their health care at the appropriate level reducing the risk of delays of care. This primary prevention approach aligns with the Affordable Care Act’s goal for innovative health care delivery methods to lower costs (U.S. Department of Health & Human Services [HHS], n.d.). The study promotes positive patient outcomes and proper utilization of resources. As a result, the health care systems could reduce inappropriate costs associated with delays in healthcare, emergency care, and hospitalizations. Overall, trans-affirmative education in pre-licensure programs has financial benefits for the client, their provider, and respective healthcare systems and communities.

**Sustainability**

The investigators’ overall goal is to provide a framework for transgender education to be permanently incorporated into the curricula at School of Nursing. By utilizing contact education and clinical simulation the project strongly supports the permanent integration of a multi-method transgender education program in the School of Nursing curricula. Project findings anticipate that more competent and well-prepared nurses will enter the workforce ultimately reducing barriers for the transgender community.

As a whole, this project can be easily replicated and modified to use in multiple areas of learning on an undergraduate nursing level. The project can effectively be integrated into foundations of nursing, cultural competency, or psychiatric nursing as each program sees fit. By providing a basic understanding of trans-affirmative care this project provides a foundation for effective transgender education at any level. Multiple specialties could adapt this work and utilize these two interventions together to provide effective trans-affirmative education and communication skills.
Project resources can be easily replicated by other facilitators. PowerPoints can be presented by any facilitator that feels comfortable educating about the transgender community. At the discretion of the presenter, the transgender speakers could be added to the education seminar. This creates easy integration of the education seminar into any program looking to provide education on the transgender community. Clinical simulation was structured using video prompts and role-play activities which provide an effective, easy-to-follow guide for any presenter to move through the clinical simulation with participants. By utilizing video prompts the clinical simulation can be replicated on a wide scale and repeated as many times as needed. The only piece required to facilitate the simulation would be a competent simulation facilitator to guide participants through the learning exercise. Combined, these two interventions can easily be replicated by any academic institution, hospital, or organization providing direct care to transgender individuals. Results of this project along with the ease and feasibility of replication make it noteworthy for consideration as a permanent component of the School of Nursing curricula.

**Professional Reporting and Future Scholarship**

The project findings will be disseminated to the project site and faculty to facilitate the translation and integration of transgender health education for future cohorts. The project will also be disseminated through paper, presentation, and poster at Rutgers University School of Nursing. Research findings will be stored in the approved research repository with the IRB Protocol Number.

Health care advocacy for underserved populations is a passion of both investigators. This project serves as a preliminary experience to improve the health care outcomes of LGBTQ clients. Co-investigators hope to present the study findings and resources at clinical conferences.
to spread awareness of the trans-affirmative practice and promote integration into other academic institutions. While contact education and simulation were effective interventions, further research should be done to identify other effective education methods to improve attitudes, comfort, and knowledge of students caring for transgender individuals. Research is limited to participants of prelicensure education. Research and anecdotal clinical experiences elucidate limited training and resources for providers regarding transgender health. Additional research is recommended surrounding post-licensure education provided through various healthcare facilities to all levels of participants engaging with transgender individuals. Policy changes targeting resources and training are recommended to promote trans-affirmative practices and equity for all clients.

**Summary**

Current research illustrates a transgender health education gap in baccalaureate nursing curricula. The transgender community historically suffers an alarming rate of discrimination and mistreatment by healthcare providers due to inadequate training and prelicensure exposure. Therefore, the nursing workforce should be part of the solution rather than perpetuate health disparities experienced by the transgender community. This project aligns with current research supporting multiple education methods to affect change in knowledge and comfort of baccalaureate nursing students. Findings reveal attitudes toward transgender individuals were consistently positive throughout the project which helped students remain receptive to learning. Based on the project findings, each intervention on its own is statistically insignificant. However, when interventions were combined, impactful changes occurred. Knowledge and comfort levels were only statistically significantly increased after both interventions were completed. These findings align with current research that to enact change, multi-method education structures must
be utilized. The multi-method transgender education program can be easily integrated into nursing education programs with no financial constraints. Also, the primary prevention nature contributes to an innovative approach at systemically reducing poor health outcomes and associated healthcare costs. Transgender education opportunities should be offered at all levels of nursing to promote competent care for transgender clients. Regardless of specialty or clinical expertise, the education program can transition a novice to an advanced beginner in trans-affirmative practice. The nursing profession’s duty is to advocate for and respect the humanity of their clients. Therefore, it is imperative that the future of nursing is exposed to quality education that cultivates equity and inclusion for transgender people.
References


Lim, F., & Hsu, R. (2016). Nursing students’ attitudes toward lesbian, gay, bisexual, and transgender persons: An integrative review. *Nursing Education Perspectives (National League for Nursing), 37*(3), 144-152. doi:10.1097/01.NEP.0000000000000004


Rutgers School of Nursing. (n.d.) Careers at school of nursing.

https://nursing.rutgers.edu/careers/

Rutgers School of Nursing. (n.d.) Simulation learning.

https://nursing.rutgers.edu/meri/clinical-learning/simulation/


## Appendix A: Contact Education Seminar Table of Evidence

<table>
<thead>
<tr>
<th>Article</th>
<th>Author, Date</th>
<th>Evidence Type</th>
<th>Sample Size, Setting</th>
<th>Study Findings that help Answer EBP Questions</th>
<th>Limitations</th>
<th>Evidence Level / Quality</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>James, S. E., Herman, J. L., Rankin, S., Keisling, M., Mottet, L., &amp; Anafi, M., 2016</td>
<td>Cross Sectional Survey</td>
<td>Online Survey 27,715 respondents, all 50 states and U.S military bases overseas 2015 U.S. Transgender Survey</td>
<td>33% of those who saw a health care provider report at least one negative experience related to being transgender (harassment / refused treatment) 23% report that they did not seek the health care they needed in the year prior to completing the survey due to fear of being mistreated as a transgender person 22% report health as poor / fair. 40% report having attempted suicide once in their lifetime 24% have had to teach their providers about being transgender, and only 6% report providers were</td>
<td>Potential for bias due to data obtained through survey style</td>
<td>Level 4 Good Quality</td>
</tr>
<tr>
<td></td>
<td>Lerner, J., &amp; Robles, G. (2017)</td>
<td>Literature Review</td>
<td>Four databases searched. Initial search found 1,244 abstracts; 1206 were excluded and 38 were assessed; from that 21 (qualitative and quantitative) studies were included in review.</td>
<td>Themes associated with barriers to care: lack of provider knowledge surrounding transgender health issues, previous negative experiences/or anticipation of negative experiences surrounding healthcare, inability to pay for services, and refusal from providers to care for individuals.</td>
<td>Search may not have been robust enough only using articles from literature depositories. Many studies relied on qualitative methods. Many quantitative contained low to medium methodological rigor due to based off convenience sampling.</td>
<td>Level 1 Good Quality</td>
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<td>3</td>
<td>Cicero, C., Reisner, L., Silva, G., Merwin, I., &amp; Humphreys, C. (2019).</td>
<td>An Integrated Mixed Research Literature Review</td>
<td>Articles from 2011– June 2017 reviewed 23 articles reviewed: 13 quantitative, 7 qualitative, 2 case.</td>
<td>Major Barriers found: obstacles experienced accessing health care, discrimination from health care professionals and clinicians, restricted health insurance.</td>
<td>Because of the structure of some studies in the review trustworthiness and credibility could not be assessed.</td>
<td>Level 1 High Quality</td>
</tr>
<tr>
<td>4</td>
<td>Morris, M., Cooper, R., Ramesh, A., Tabatabai, M., Arcury, T., Shinn, M., … Matthews-Juarez, P. (2019).</td>
<td>Systemic Review</td>
<td>Articles reviewed from March 2005 – Feb 2017</td>
<td>Bias-focused education shows increase in knowledge of nursing students</td>
<td>Only 13 articles were deemed acceptable for review</td>
<td>Level 1 High Quality</td>
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<td>639 abstracts reviewed, 60 identified as</td>
<td>Experimental learning interventions, interactive trainings, are</td>
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<tr>
<td>#</td>
<td>Author (Year)</td>
<td>Methodology</td>
<td>Description</td>
<td>Findings</td>
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<td>5</td>
<td>Orgel, H. (2017)</td>
<td>Systematic Literature Review</td>
<td>From 12 databases: 14 resources identified as highest level and quality. To determine most effective way to improve LGBT cultural competence in nursing students</td>
<td>Three main categories of interventions noted: formal education such as lectures, contact with members of a cultural group, and interactive experiences. All methods were found effective. No single method was proven superior over another. The use of a multi-method intervention including education, contact, and interaction experiences is recommended to improve cultural competence.</td>
<td>The study only found 3 articles of level 1 evidence all other articles were ranked between level 3-5. Some articles used were beyond 10 years old.</td>
<td>Level 1 High Quality</td>
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<td></td>
<td>A. Lim, Fidelindo; Hsu, Richard, 2017</td>
<td>Systematic Review</td>
<td>211 articles were initially found for review: Final sample included 12 articles that met criteria. Synthesize findings of studies on the attitudes of nursing students toward LGBT persons.</td>
<td>Studies conducted prior to 2000 revealed negative to very negative attitudes towards the LGBT community. A major lack of consistent nursing education was revealed as a cause to a slow adoption of positive attitudes in nursing students – less than 50% of studies suggest positive leaning attitudes of nursing students to the LGBT. Suggests health content to be explicitly and fully integrated into nursing curricula. Increase time and activities devoted to LGBT health disparities is needed; interactions with LGBT populations and experiential experiences may help move students from</td>
<td>Lack of probability sampling in LGBT health studies; all studies used convenience sampling. Studies found a predominance of Christian religion which could narrow the findings.</td>
<td>Level 1 High Quality</td>
</tr>
</tbody>
</table>
| 7 | Jesús Manuel García-Acosta, Maria Elisa Castro-Peraza, Ángeles Arias Rodríguez, María Luisa Pérez-Cánovas, María Inmaculada Sosa-Alvarez, Rosa Llabrés-Solé, … Nieves Doria Lorenzo-Rocha. (2019) | Randomized Control Trial | 59 nursing students randomly assigned to two different style learning intervention groups with specific training on transgender health issues
57 assigned to control group with no specific classes or workshops | Both methodologies were seen to increase knowledge, but no significance difference seen between intervention groups
Intervention types: problem based learning and film forum
Workshops showed highly effective in increasing knowledge | Small sample size / specific profile of fourth year nursing students
Contact between students could have caused problems with validity of results
Students from population of interest could have also had prior knowledge | Level 3 Low Quality |
| 8 | Brown, C., Keller, C., Brownfield, J., & Lee, R. (2017). | Online Survey | 265 Nursing students completed online survey assessing transprejudice and attitudes towards transgender individuals | Confidence in providing care was associated with receiving formal education
Nursing education that addresses gender identity and provides contact with the community may improve gender affirming healthcare and reduce transprejudice | Small sample
Method was online survey which could lead to bias | Level 4 Low Quality |
<table>
<thead>
<tr>
<th>No.</th>
<th>Authors</th>
<th>Study Design</th>
<th>Sample Size</th>
<th>Methods</th>
<th>Results</th>
<th>Limitations</th>
<th>Quality Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>9</td>
<td>Madelyne Z Greene, Katherine France, Edward F Kreider, Emily Wolfe-Roubatis, Kevin D Chen, Andy Wu, &amp; Baligh R Yehia. (2018)</td>
<td>Online Survey</td>
<td>1,010 students from Schools of Nursing, Medicine, and Dental</td>
<td>12 item survey given to 1,010 students</td>
<td>While 70% felt comfortable to care for members of the LGBT community, less than 50% report their formal training has prepared them to do so. Over 70% report interest in receiving formal education. Most report feeling inadequately prepared to care for this population.</td>
<td>Online survey could result in bias.</td>
<td>Level 4 Good Quality</td>
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<tr>
<td>10</td>
<td>Gila M. Acker, 2017</td>
<td>Cross-Sectional Online Survey</td>
<td>600 students from nursing, social work, and occupational therapy programs participated in anonymous online survey to assess level of transphobia.</td>
<td>600 students from nursing, social work, and occupational therapy programs participated in anonymous online survey to assess level of transphobia.</td>
<td>45% of sample reported moderate to high levels of transphobia. Only 7% report contact with transgender individuals. 75% report low levels of exposure to transgender content in education. Contact with transgender people promotes less prejudicial.</td>
<td>Interference with causality due to design of study. Convenience sample can limit generalizability. Traditional background of most students could affect their level of transphobia.</td>
<td>Level 4 Low Quality</td>
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<tr>
<td></td>
<td>Authors</td>
<td>Methodology</td>
<td>Description</td>
<td>Findings</td>
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<td>12</td>
<td>Walch, S., Sinkkanen, K., Swain, E., Francisco, J., Breaux, C., &amp; Sjoberg, M. (2012)</td>
<td>Randomized Cross-sectional Study</td>
<td>45 students were randomly assigned to two different conditions: a speaker panel of transgender individuals and a lecture presentation both to provide education on transphobia.</td>
<td>Significant reductions in transphobia were found after the speaker presentation compared to the lecture presentation. When the speaker presentation was given to the students in the lecture transphobia reduction was found; but were Small sample size. Members of the group had prior contact with transgender people.</td>
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<td></td>
<td>Kcomt, 2019</td>
<td>Rapid Systematic Review</td>
<td>Articles were reviewed from January 1, 2010 – June 15, 2018.</td>
<td>2470 relevant articles were reviewed</td>
<td>Barriers to care: Negative experiences in healthcare and profound rates of discrimination, limited access to care</td>
<td>Studies were descriptive and used cross sectional study design. All studies used convenience or snowball samples</td>
<td>Level 1 Good Quality</td>
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<td>13</td>
<td>Pettigrew, T., &amp; Tropp, L. (2006)</td>
<td>Meta-analysis</td>
<td>713 independent samples from 515 studies to determine effectiveness of intergroup contact theory in reducing prejudice</td>
<td>Intergroup contact theory is shown to effectively reduce prejudice of minority groups. When Allport’s optimal contact conditions are followed there is a further reduction in prejudice observed</td>
<td>No quantitative assessment was used. Research based on empirical studies.</td>
<td>Level 1 High Quality</td>
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</tbody>
</table>
## Appendix B: Nursing Simulation Table of Evidence

<table>
<thead>
<tr>
<th>Article #</th>
<th>Author &amp; Date</th>
<th>Evidence Type</th>
<th>Sample, Sample Size, Setting</th>
<th>Study findings that help answer the EBP Question</th>
<th>Limitations</th>
<th>Evidence Level &amp; Quality</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Brown et al., 2017</td>
<td>Cohort Study</td>
<td>N=265, Undergraduate nursing students who completed an online survey enrolled in universities and colleges throughout the USA</td>
<td>Nursing curriculum should support and increase visibility of transgender individuals. Improved confidence in providing culturally competent care associated with education on transgender issues as well as knowing a transgender individual. Engaging in self-assessment would positively influence effectiveness of education and training. Focusing on transgender contact and discussing attribution of cause is related to more affirming attitudes toward transgender people.</td>
<td>Majority of the sample lived in midwestern and southern regions of the US. Demographics were primarily Caucasian. Diversity and personal factors and experiences can affect the perspectives of transgender individuals. Lack of longitudinal nature is unable to establish correlation of affirming attitudes with positive contact to transgender individuals.</td>
<td>Level 3 Fair</td>
</tr>
<tr>
<td>2</td>
<td>Carabez et al., 2015</td>
<td>Non-experimental Study</td>
<td>n=112 nursing students enrolled in an urban public university known as one of the most diverse in the USA. Students completed an assignment using multiple methods such as readings, presentation, and instructed interview with key nurse informants based on Health Care Equality Index</td>
<td>Nearly forty percent felt unprepared to provide nursing care to LGBTQ individuals. Eighty-five percent said their nursing education had not prepared them suggesting other sources of knowledge and preparation. Pre-interview allow students to explore knowledge limits. Interviews made the students realize the effects of knowledge levels in providing competent care. Post-surveys promote self-reflection is a key component to be open to other’s cultural differences. Multi method teaching enhanced student, knowledge, attitudes, and skills related to LGBT health care needs.</td>
<td>A single study occurring at only one site. Lack of longitudinal nature is unable to establish correlation of affirming attitudes with positive contact to transgender individuals.</td>
<td>Level 3 Fair</td>
</tr>
<tr>
<td></td>
<td>Authors</td>
<td>Study Type</td>
<td>Participants</td>
<td>Key Findings</td>
<td>Level</td>
<td>Quality</td>
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<td>3</td>
<td>Diaz et al., 2017</td>
<td>Non-experimental Study</td>
<td>N= 170 pre-licensure baccalaureate nursing students but only 90 completed the questionnaires  Two state University systems conducted the simulation on campus  Simulation was incorporated into the second year enrolled in the mental health nursing course</td>
<td>Utilized the NLN Jeffries Simulation Theory and INACSL Standards of Best Practice in Simulation for development  Feedback included greater sense of comfort working with transgender clients  Acknowledge the need for a culturally sensitive approach  Therapeutic communication practice can generate nurses with empathy and compassion</td>
<td>Level 3</td>
<td>Fair</td>
</tr>
<tr>
<td>4</td>
<td>Hickerson et al., 2018</td>
<td>Non-experimental Study</td>
<td>n=230 baccalaureate and accelerated nursing students enrolled in a Public Health Nursing Course in one University who participated in simulation</td>
<td>Increased confidence and knowledge when assessing and providing care to LGBT individuals using self-assessments  LGBTQ education gaps can be attributed to expert teacher shortages or inherent curriculum deficits  Simulation is an optimal intervention to bridge the deficient LGBTQ education gap</td>
<td>Level 3</td>
<td>Fair</td>
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<tr>
<td>5</td>
<td>Lim et al., 2015</td>
<td>Non-experimental cross-sectional study</td>
<td>N=739 purposive sample of nursing school administration leaders completed a survey assessing awareness, readiness, and knowledge for LGBTQ health and education</td>
<td>Limited awareness, knowledge and readiness for LGBTQ education by nursing school administration. Fifty percent reported limited knowledge and lack of awareness with probable connection to limited discussions between faculty and regarding curriculum  Seventy-nine felt that education about sexual minorities is important but seventy-five</td>
<td>Level 3</td>
<td>Fair</td>
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<tr>
<td>#</td>
<td>Study</td>
<td>Methodology</td>
<td>Samples</td>
<td>Findings</td>
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<td>6</td>
<td>Lim &amp; Hsu, 2016</td>
<td>Integrative Review</td>
<td>n= 12 studies included in synthesis about nursing students' attitudes toward LGBT clients, representing nine qualitative, descriptive, and correlational studies and three interventional studies</td>
<td>The nursing profession has been slow at advocating changes with the social progress for the transgender population. A false sense of cultural competency when students believe they are capable of treating everyone alike as a socially desirable response. Experiential learning is a solid cultural competency education intervention. LGBTQ health education must be incorporated into nursing curricula affecting the cognitive, affective, and psychomotor domains of the student. Interactions with LGBT populations may move prejudice into empathy which is an important step for client-centered care. Several studies were more than a decade old which does not account for the societal changes regarding the transgender population. Majority of seven out of twelve studies are located in the Midwest which is known to be unsupportive of LGBT equality. Lack of representation with primarily Caucasian, Christian, females from middle to upper class students.</td>
<td>Level 3</td>
<td>Fair</td>
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<td>7</td>
<td>Maruca et al., 2018</td>
<td>Non-experimental Study</td>
<td>N= 48 nursing students completed both the pre- and post-surveys after completing a transgender simulation</td>
<td>Utilized the NLN Jeffries Simulation Theory. High fidelity simulation used a manikin equipped to present as a male to female client in the early stages of physical transition. Post simulation surveys report increase in affirmative practice toward transgender clients but</td>
<td>A large dropout rate due to late post-test administration which was susceptible to loss of interest. The multi-site and distance affected completion of surveys. A transgender specific tool could have been used instead of the Gay Affirmative Practice</td>
<td>Level 3</td>
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<tr>
<td>No.</td>
<td>Author(s)</td>
<td>Type</td>
<td>Studies Included</td>
<td>Findings</td>
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<td>8</td>
<td>Morris et al., 2019</td>
<td>Systematic Review</td>
<td>N=13 studies (9 assessing training to reduce LGBTQ related bias in health care profession students and 4 focused on health care providers)</td>
<td>No significant difference in attitudes and beliefs. Basic skills such as treating client with dignity and respect, using preferred name and pronouns, and communication skills are exercised in the simulation setting. Self-reflection is the essential step in developing cultural sensitivity and understanding through debriefing and self-assessments. LGBTQ and relevant health knowledge increased with education programs such as lectures, videos, or presentations by LGBTQ identifying individuals. Experiential learning was effective in increasing comfort levels by practicing skills. Bias-focused education was effective at increasing knowledge. Intergroup contact was effective at improving attitudes.</td>
<td>No significant difference in attitudes and beliefs. Basic skills such as treating client with dignity and respect, using preferred name and pronouns, and communication skills are exercised in the simulation setting. Self-reflection is the essential step in developing cultural sensitivity and understanding through debriefing and self-assessments. LGBTQ and relevant health knowledge increased with education programs such as lectures, videos, or presentations by LGBTQ identifying individuals. Experiential learning was effective in increasing comfort levels by practicing skills. Bias-focused education was effective at increasing knowledge. Intergroup contact was effective at improving attitudes.</td>
<td>Small sample size in relation to the multiple settings as well as the use of convenience sample, and lack of randomization.</td>
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<tr>
<td>9</td>
<td>Stewart &amp; O’Reilly, 2017</td>
<td>Integrative Review</td>
<td>N=24 studies included in synthesis</td>
<td>Themes addressing heteronormative beliefs and actions, homophobia and the wide range of attitudes, skills and knowledge displayed by nurses and midwives. Cisnormativity is a systemic bias that manifested into assumptions about transgender needs. Physical non-conformations and lack of corresponding documentation to their chosen gender was associated with less health</td>
<td>Themes addressing heteronormative beliefs and actions, homophobia and the wide range of attitudes, skills and knowledge displayed by nurses and midwives. Cisnormativity is a systemic bias that manifested into assumptions about transgender needs. Physical non-conformations and lack of corresponding documentation to their chosen gender was associated with less health</td>
<td>Limited to studies that incorporated nurses and midwives. However, studies may also include other professions such as physicians or care assistants. Does not report the specific training, roles, and interactions of each practice.</td>
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</table>
Transgender clients experience frequent difficulties such as harassment, misgendering, and ridicule. Some healthcare providers treated gender identity and sexual orientation as pathology that can be cured. Transgender clients report having to teach providers about transgender care further supporting apparent knowledge and training gap.

33% of those who saw a health care provider report at least one negative experience related to being transgender, such as being verbally harassed or refused treatment because of their gender identity.

23% of respondents reported that they did not seek the health care due to fear of being mistreated as a transgender person.

24% reported having to teach providers about their healthcare

Only 6% of respondents reported that their routine care provider knew “almost everything” or “most things” about caring for transgender people.

James et al., 2015

Non-experimental National Survey

N= 27,715 respondents from all 50 states and U.S military bases overseas

Participated in an anonymous online survey for transgender people 18 years or older

Did not include individuals less than age 18 years old

Sample only included individuals residing in any of the 50 states and U.S military bases overseas. Different cultures of geographic locations can affect the experiences of transgender individuals.
Appendix C: Integrated Model of Allport’s Interpersonal Contact Theory

**Conditions**
- Equal status
- Task coordination
- Superordinate goals
- Support of authorities
- Acquaintance potential

**Moderators**
- Group identification
- Group salience

**Cognitive**
- Increasing knowledge
- Perspective taking

**Affective**
- Reducing anxiety
- Increasing empathy

**Behavioral**
- Cooperative behavior
- Self-disclosure
- Interpersonal relations

**Intergroup bias reduction**
- Reduced stereotypes
- Reduced prejudice
- Reduced discrimination

**Contact Effects**

*Figure 1* An integrated model of Allport’s (1954) conditions, and moderators and mediators of intergroup contact effects. “Adapted from Online Intergroup Contact (p 229).” By B. Hasler & Y. Amichai-Hamburger, 2012, *Oxford University Press*, 2, p. 229.
Appendix D: NLN Jeffries Simulation Theory Framework

Appendix E: Transgender Attitudes and Beliefs Scale (TABS)
(7-point scale: strongly disagree to strongly agree)

FACTOR 1 (Interpersonal Comfort)
Q1.1 I would feel comfortable having a transgender person into my home for a meal.
Q1.2 I would be comfortable being in a group of transgender individuals.
Q1.3 I would be uncomfortable if my boss was transgender.
Q1.4 I would feel uncomfortable working closely with a transgender person in my workplace.
Q1.5 If I knew someone was transgender, I would still be open to forming a friendship with that person.
Q1.6 I would feel comfortable if my next-door neighbor was transgender.
Q1.7 If my child brought home a transgender friend, I would be comfortable having that person into my home.
Q1.8 I would be upset if someone I’d known for a long time revealed that they used to be another gender.
Q1.9 If I knew someone was transgender, I would tend to avoid that person.
Q1.10 If a transgender person asked to be my housemate, I would want to decline.
Q1.11 I would feel uncomfortable finding out that I was alone with a transgender person.
Q1.12 I would be comfortable working for a company that welcomes transgender individuals.
Q1.13 If someone I knew revealed to me that they were transgender, I would probably no longer be as close to that person.
Q1.14 If I found out my doctor was transgender, I would want to seek another doctor.

FACTOR 2 (Sex/Gender Beliefs)
Q2.1 A person who is not sure about being male or female is mentally ill.
Q2.2 Whether a person is male or female depends upon whether they feel male or female.
Q2.3 If you are born male, nothing you do will change that.
Q2.4 Whether a person is male or female depends strictly on their external sex-parts.
Q2.5 Humanity is only male or female; there is nothing in between.
Q2.6 If a transgender person identifies as female, she should have the right to marry a man.
Q2.7 Although most of humanity is male or female, there are also identities in between.
Q2.8 All adults should identify as either male or female.
Q2.9 A child born with ambiguous sex-parts should be assigned to be either male or female.
Q2.10 A person does not have to be clearly male or female to be normal and healthy.

FACTOR 3 (Human Value)
Q3.1 Transgender individuals are valuable human beings regardless of how I feel about transgenderism.
Q3.2 Transgender individuals should be treated with the same respect and dignity as any other person.
Q3.3 I would find it highly objectionable to see a transgender person being teased or mistreated.
Q3.4 Transgender individuals are human beings with their own struggles, just like the rest of us.
Q3.5 Transgender individuals should have the same access to housing as any other person.
Appendix F: Average TABS Scores