

ORIGINAL RESEARCH

Implementation of LGBT+ health education for master's entry nursing students

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ABSTRACT

Background: There is evidence linking Lesbian, Gay, Bisexual, and Transgender (LGBT+) health education with improvement in nursing students' knowledge, attitudes, and comfort of LGBT+ health considerations.

Methods: In a pre- and post-test study design, a total of 77 master's entry to nursing practice (MENP) students completed the LGBT+ health educational module during the Community Health Nursing course.

Results: Statistically significant results were found between pre-test to post-test data for knowledge ($p < .001$, Cohen's d 2.52), attitudes ($p < .001$, Cohen's d 0.35), and comfort ($p = .001$, Cohen's d 0.31) of LGBT+ health considerations.

Conclusions: The LGBT+ health education module improved MENP students' attitudes and comfort with LGBT+ clients and markedly increased their knowledge of LGBT+ health considerations. Findings suggest LGBT+ health education can be implemented by nursing faculty in master's entry to nursing practice programs with a positive impact on student knowledge, attitudes, and comfort.

Key Words: Nursing, Education, LGBT, Curriculum, Master's

1. INTRODUCTION

Eight years ago, Gates (2011)^[1] reported almost nine million individuals in the United States identified as lesbian, gay, bisexual, or transgender which made up roughly 3.4% of the population of the US. Research in the nursing field showed a lack of formal training, a lack of knowledge, and a need for implementation of LGBT+ health education into nursing curricula.^[2-13] Health professionals who are not specifically trained to handle LGBT+ health considerations may convey negative attitudes and create barriers to appropriate and sensitive care given to LGBT+ clients.^[14,15] These barriers can lead to poor outcomes and possible avoidance of healthcare professionals by LGBT+ clients in fear of sub-par care and discrimination.

Nurses are often the front-line healthcare professionals for anyone accessing the healthcare system and need to be educated to work with the specific health considerations of this population. Educational intervention is the first step in the field of nursing practice to assist in giving appropriate and sensitive care for this population. Evidence in the literature links educational interventions with a positive impact on nursing student knowledge of LGBT+ health, attitudes towards LGBT+ clients, and comfort with LGBT+ clients.^[3,4,11] Furthermore, Carabez et al. (2015)^[3] found most participants in their educational research desired further LGBT+ health education. Given the gap in research and the uniqueness of the population of master's entry to nursing practice students, there is a need to find the efficacy of LGBT+ health education

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in this student population.

1.1 Theoretical framework

The theoretical framework underpinning the design and efficacy of LGBT+ health education for master’s entry to nursing practice students includes both Campinha-Bacote’s Process of Cultural Competence,^[16] the Minority Stress Theory with application to the LGBT+ community,^[17] and Bloom’s Domains of Learning.^[18] Campinha-Bacote’s process model was refined to focus on cultural knowledge, cultural aware-

ness, and cultural skill leading to cultural competence of LGBT+ health considerations. This adapted process is shown as Figure 1.^[19] The LGBT+ health educational intervention was adapted and designed to encompass LGBT+ knowledge, awareness of health considerations, and a case study to improve cultural skill with LGBT+ clients. Using the educational intervention to focus on the components of cultural awareness, cultural knowledge, and cultural skill; foundational development of LGBT+ health cultural competence can be achieved in master’s entry to nursing practice students.

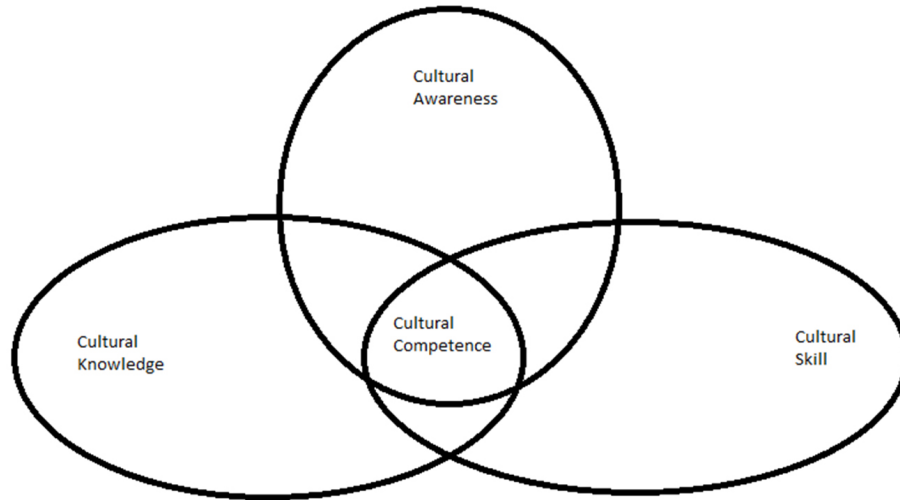


Figure 1. Campinha-Bacote’s Process of Cultural Competence. Adapted from Munoz, DoBroka, and Mohammad, 2009.

Billings and Halstead (2016)^[18] outlined the three major domains of learning according to Bloom: the psychomotor domain focusing on manual or physical skills, the cognitive domain with an emphasis on knowledge acquisition, and the affective domain which encompasses attitudes, feelings, and behaviors. The LGBT+ health considerations educational intervention emphasized the cognitive and affective domains by increasing LGBT+ health knowledge (cognitive) and improving attitudes and comfort (affective).

1.2 Literature review

Numerous studies in the literature have called for implementation of LGBT+ health into nursing curricula.^[4, 9, 11, 12, 20–23] A current review of the literature outlines the efficacy of LGBT+ health education in general undergraduate nursing education in relation to improvement of knowledge as well as more positive attitudes and comfort.

1.2.1 Knowledge deficit

A study from Carabez et al. (2015)^[3] outlined 85% of the nurses surveyed reported having insufficient training in nursing school on LGBT+ client health, leaving them feeling unprepared for clinical practice. Dastan (2013)^[5] reported most

of the same population of nursing students gathered information on ‘homosexuality’ through the media and anecdotal opinions through friends with 75.3% of the study sample having insufficient knowledge. Lim et al. (2015)^[9] reported up to 63% of baccalaureate level nursing faculty did not teach any major healthcare considerations of LGBT+ health to their students. In addition, Lim et al. (2015)^[9] found the mean classroom time devoted to LGBT+ health was 2.12 hours for an entire nursing curriculum, with 70% of participants reporting 0-2 hours of total content time in their curriculum. Carabez et al. (2015)^[3] found most nursing students surveyed lacked basic knowledge of LGBT+ health issues.

1.2.2 Attitudes and comfort

More negative attitudes have been identified in the literature from male students and students who identify as having and practicing a high degree of religiosity.^[5, 12] Furthermore, studies from Campo-Arias, Herazo & Cogollo (2010)^[24] and Dastan (2013)^[5] found high levels of homophobia in their sample populations. Conversely, Sirota (2013)^[22] found increasing age to be correlated with more positive attitudes toward LGBT+ patients. Lim & Hsu (2016)^[8] conducted

an integrative review finding half of the studies reporting negative attitudes towards LGBT+ patients. It is important to note a large proportion of the negative attitudes in the studies reviewed from Lim & Hsu (2016)^[8] were conducted during 1990-early 21st century, which could contribute to a larger proportion of negative attitudes. Carabez et al. (2015)^[3] reported students lacking in comfort with understanding and using preferred pronouns.

1.2.3 Evidence of successful implementation

Several studies have found evidence that simple education interventions can improve knowledge and cause positive change regarding attitudes and comfort. Efficacy has been established from a study in a graduate-level family nurse practitioner program.^[13] Carabez et al. (2015)^[3] reported nursing student's comfort levels of giving care to LGBT+ clients following educational intervention on LGBT+ health. Furthermore, Carabez et al. (2015)^[3] reported faculty teaching LGBT+ client health felt their students wanted more LGBT+ health education. Strong & Folse (2015)^[11] found that a 40-45-minute LGBT+ health educational intervention led to improved attitudes and stronger foundational knowledge of LGBT+ client health.

1.2.4 Gaps in the Literature

No studies currently show integration of LGBT+ health considerations into a community health nursing course in a Master's Entry to Nursing Practice (MENP) curriculum. This leaves a gap in research showing the effectiveness of LGBT+ health education for master's entry to nursing practice programs and the efficacy of using the education within a community health nursing course. Master's entry students have at least a bachelor's degree in another field, with many having had careers prior to starting the program. It is possible these individuals have had more interactions with LGBT+ clients in past, leading to increased baseline knowledge, improved attitudes, and enhanced comfort.

2. METHODS

2.1 Definitions, Overall Research Question, and Operational Plan

Can an LGBT+ health educational intervention improve nursing students' knowledge, attitudes, and comfort of LGBT+ health considerations in a master's entry to nursing practice program? Conceptual definitions were adapted from previously defined definitions in the literature. Comfort is defined as a general feeling of ease, free from grief, distress, pain, or constraint.^[25,26] Attitude is defined as a combination of mental thinking and nonverbal cues usually reflected in an individual's behavior.^[7,26] Knowledge is defined as an acquisition of facts, information, or skills acquired by an

individual through education or experience.^[26] Master's entry to nursing practice program (MENP) is a pre-licensure registered nursing program for individuals with a bachelor's degree in another field.

2.2 Recruitment and protection of sample

The sample used for the study was a convenience sample from a large, Catholic, university in a major US city and all enrolled in a master's entry to nursing practice program. The Institutional Review Board at the university approved the study as an expedited review. The pre- and post-intervention surveys were completed on university computers, stored on a protected server, and where without any identifying characteristics of the sample participants. The intervention was conducted immediately after the pre-test survey with the post-test survey completed immediately after the intervention. The sample participant's course grades were not affected by their participation or refusal of participation.

2.3 Educational intervention

The lecture-style educational intervention was obtained and adapted with permission from the primary author of the original intervention.^[13] This educational intervention was integrated into a master's entry to nursing practice program within a community health nursing course. The community health nursing course is offered in quarter seven of an eight-quarter master's entry to nursing practice program. This educational intervention was implemented on both September 12, 2018 and January 16, 2019 to two different cohorts of students for a total N = 78. This educational intervention was approximately two hours in duration after subtracting the thirty minutes for data collection. The curricular outline of the educational intervention is listed in Table 1.

2.4 Instrumentation

Approval to use and adapt the Nursing Students' Knowledge and Attitudes of LGBT Health Concerns (NKALH) survey was obtained from the primary authors.^[27] The NKALH was adapted for the purpose of this research study which included updates to terminology, separation of the attitudes and comfort sections, and the addition of items. The pre- and post-test surveys were examined by content experts with expertise in both LGBT+ issues and nursing education. This process provided content and face validity for the instrumentation. After adapting the instrument, there were 35 knowledge questions to measure the students' understanding of infectious disease epidemiology, chronic disease epidemiology, social epidemiology, terminology, disease screening, health insurance considerations, access to healthcare, nutrition, substance use, and domestic violence within the LGBT+ community. The choices for the knowledge questions had three possible an-

swers: true, false, and ‘don’t know’. The attitudes section had 17 items examining students’ attitudes towards LGBT+ clients and utilized 5-point Likert-type items ranging from strongly agree to strongly disagree. The comfort section had a total of 13 items examining students’ comfort with LGBT+ clients and LGBT+ health considerations. Comfort items also utilized 5-point Likert-type items ranging from strongly agree to strongly disagree. The pre and post-test items were identical. Nine optional demographic and qualitative questions were added in the post-test encompassing age, gender, sexual orientation, race/ethnicity, religious identity, personal

knowledge of LGBT+ clients in their life, if they felt the education had benefitted them, and how this education might benefit them as a future nurse. The change in knowledge, attitudes, and comfort will be assessed by comparing scores from pre-test and post-test Likert-type items and true/false questionnaires. Much of the instrumentation in the literature assesses one or two of the dependent variables (comfort, attitudes, and knowledge). The adaption of the previously used instrument will make it possible to assess knowledge change, attitude change, and comfort change within a single instrument.

Table 1. LGBT+ health intervention curriculum outline with approximate time spent

| |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| General Assumptions and Considerations (5 minutes) <i>Myths of LGBT+ clients relating to healthcare</i> |
| Minority Stress Theory (MST) (10 minutes) <i>Short video about MST, linking MST to epidemiology</i> |
| Terminology (10 minutes) <i>Common LGBT+ terminology and terms to avoid</i> |
| Healthcare Access and Legal Considerations (5 minutes) <i>Underpinning of social factors on epidemiology and overall care of LGBT+ clients</i> |
| LGBT+ Epidemiology (20 minutes) <i>Infectious disease, chronic disease, and social epidemiological concerns of the LGBT+ client population</i> |
| Depression (10 minutes) <i>Proper screening, youth LGBT+ depression, geriatric LGBT+ depression</i> |
| Domestic Violence (10 minutes) <i>Rates of domestic violence in LGBT+ population and specific groups of LGBT+</i> |
| Gender Reassignment Therapies (GRT) (5 minutes) <i>Surgical, pharmacological, and financial approaches to GRT, understanding screening for disease based on variations of surgical and pharmacological approaches</i> |
| Surveillance Recommendations (10 minutes) <i>General disease surveillance of LGBT+ clients</i> |
| Pregnancy Considerations (5 minutes) <i>LGBT+ pregnancy considerations specifically mentioning transgender pregnancy considerations</i> |
| Conducting a Sexual Health History (10 minutes) <i>Basic approach to conducting a sexual health history for the LGBT+ client</i> |
| Interactive Case Study (20 minutes) <i>Small groups work through a case study presented in lecture on proper etiquette of pronouns, disease screening based on the case study, and overall plan of care for the patient</i> |
| Major Take Away Points (5 minutes) <i>Showing students LGBT+ clients need to be treated with the same respect as non-LGBT+ clients, if the students are unsure what pronouns to use they can ask, don’t assume orientation and gender identity, big epidemiology points to take away, disease prevention techniques</i> |

2.5 Pilot of instrumentation

Prior to the intervention and data collection phase, a pilot test of the adapted instrument was performed to evaluate reliability. The adapted instrument was given to seven volunteers in a web-based format over the span of thirty minutes or less. The reliability of the knowledge instrument was analyzed with the Kuder-Richardson-20 (KR-20) test, after the answers were ultimately coded as either 1 = correct

or 0 = incorrect, with the ‘don’t know’ answers coded as 0. The KR-20 yielded a 0.765 value, which indicates acceptable reliability.^[28] The reliability of the attitudes and comfort instruments were examined using the Cronbach’s alpha coefficient. The Cronbach’s alpha values were 0.742 and 0.943 for attitudes and comfort, respectively. Overall, the attitudes and comfort sections were tested in combination with a Cronbach’s Alpha statistic of 0.903 for the pilot.

2.6 Data analysis

Data were gathered at two different points in time for a total $N = 78$. One survey was excluded due to missing data leaving the total $n = 77$ used for analysis. The demographic data from the study was gathered at the end of the post-test and was not mandatory. This data is summarized in Table 2. A new variable of multiple races and ethnicities was created for participants who identified as multiple races and/or ethnicities to streamline data analysis. In the religious identity section,

individuals who answered 'other', but wrote Catholic were recoded into 'Roman Catholic', as well as participants who answered 'other', but wrote 'Christian' were recoded under the 'Protestant' category to clarify analysis. A total of four participants were recoded from 'other' into 'Protestant' and one participant from 'other' to 'Roman Catholic'. Furthermore, with the exclusion of gender, demographic variables were dichotomized to conduct further analysis.

Table 2. Full demographic data of participants

| Reported Gender | Number of Participants | Cumulative Percent |
|----------------------------|------------------------|--------------------|
| Male | 13 | 16.9 |
| Female | 63 | 98.7 |
| Other | 1 | 100.0 |
| Missing | 0 | 100.0 |
| Total included in analysis | 77 | 100.0 |
| Sexual Orientation | | |
| Bisexual | 1 | 1.3 |
| Lesbian/Gay/Homosexual | 4 | 6.6 |
| Heterosexual | 70 | 98.7 |
| Other | 1 | 100.0 |
| Missing | 1 | N/A |
| Total included in analysis | 76 | 100.0 |
| Race/Ethnicity | | |
| Asian/Pacific Islander | 11 | 15.1 |
| African-American/Black | 8 | 26.0 |
| Latino/Hispanic | 6 | 34.2 |
| Native American | 0 | 34.2 |
| White/Caucasian | 42 | 91.8 |
| Other | 2 | 94.5 |
| Multiple Races/Ethnicities | 4 | 100.0 |
| Missing | 4 | N/A |
| Total included in analysis | 73 | 100.0 |
| Religion | | |
| Atheist | 5 | 6.8 |
| Jewish | 1 | 8.2 |
| Muslim | 3 | 12.3 |
| Non-affiliated | 10 | 26.0 |
| Protestant | 13 | 43.8 |
| Roman Catholic | 37 | 94.5 |
| Other | 4 | 100.0 |
| Missing | 4 | N/A |
| Total included in analysis | 73 | 100.0 |
| Age (Years) | | |
| N = 74 | Mode: 25 | Max: 48 |
| Mean: 27.74 | Min: 24 | Range: 24 |
| Median: 26.00 | Skewness: 2.357 | Kurtosis: 6.334 |

Reverse coding was completed before analysis of the data. Eleven knowledge questions, eleven attitudes questions, and four comfort questions were reverse coded. Knowledge items

requiring reverse coding were the items where the correct answer was false. Comfort and attitudes items requiring reverse coding were inherently negative items on percep-

tions towards LGBT+ clients. Reliability testing was also conducted on 77 responses obtained in the study. The KR-20 value was 0.738 for the knowledge instrument and the Cronbach’s alpha values were 0.726, and 0.878 (Attitudes and comfort respectively). All independent demographic variables had assumptions tested through Shapiro-Wilk test of normality to help determine use of parametric and non-parametric statistical tests. All the demographic variables violated assumptions of normal data therefore requiring use of non-parametric data analysis.

3. RESULTS

3.1 Demographics

Most of the sample reported female gender (n = 63, 81.8%), heterosexual orientation (n = 70, 92.1%), Caucasian race (n = 42, 57.5%), and Roman Catholic religion (n = 37, 50.7%). The average age was 27.74 years and an age range of 24-48 years. All MENP student participants reported connection to a member of the LGBT+ community also reported finding the education useful to them as a future nurse.

3.2 Knowledge, attitudes, and comfort data on LGBT+ health considerations

All inferential statistical analysis was conducted with an alpha level of 0.05. Knowledge was assessed from pre-test to post-test by adding all the correct answers from each pre-test and post-test survey linked by individual participant ID. New variables were created from existing data for each participant; Knowledge Comprehensive Pre-test (sum of correct answers), Knowledge Comprehensive Post-test (sum of correct answers), and Knowledge Comprehensive Change (change from pre- to post-test sums). Higher values within each of the new variables of knowledge indicate higher levels of knowledge with possible scores ranging from 0 to 35. Knowledge data was analyzed utilizing a paired-t test with a significant result ($p < .001$, $t -17.93$, mean pre-test 18.20, mean post-test 28.68). The effect size of the LGBT+ educa-

tional module on knowledge was large with Cohen’s d value of 2.52.^[28]

Attitude and comfort data were assessed from pre-test to post-test much like knowledge, though scores of the Likert-type items were added together creating a sum of data. Each participant would have an attitude sum score and a comfort sum score for both pre-test and post-test. Three new variables were created from existing data for each of the groups of items for attitudes and comfort: attitudes comprehensive pre-test (sum of Likert-type items), attitudes comprehensive post-test (sum of Likert-type items), attitudes change (change from pre- to post-test sums), comfort comprehensive pre-test (sum of Likert-type items), comfort comprehensive post-test (sum of Likert-type items), and comfort change (change from pre- to post-test sums). Unlike knowledge, scores from attitude and comfort were inversely correlated, meaning the lower the score, the higher the level of attitudes and comfort. Possible scores from attitudes ranged from 16 to 80 and comfort from 12 to 60. Attitudes and comfort pre-test and post-test data were also analyzed by using paired-t test with significant results for attitude change ($p < .001$, $t 4.353$, mean pre-test 31.99, mean post-test 29.92) and comfort change ($p = .001$, $t 3.469$, mean pre-test 22.21, mean post-test 20.30). Like knowledge, attitudes and comfort scores from pre-test to post-test underwent analysis to determine effect size with Cohen’s d. Cohen’s d was found to be 0.35 and 0.31 for attitudes and comfort score changes respectively. Statistically significant data is summarized in Table 3, and statistically non-significant data is summarized in Table 4.

Table 3. Summary of statistically significant results

| Variable | Test | p Value | Effect Size (Cohen’s d) |
|----------------------------------|----------|---------|-------------------------|
| Knowledge, Pre-test to Post-Test | Paired-T | < .001 | 2.515174 |
| Attitudes, Pre-test to Post-Test | Paired-T | < .001 | 0.351333 |
| Comfort, Pre-test to Post-Test | Paired-T | = .001 | 0.309729 |

Table 4. Summary of non-statistically significant results

| Variable (Number of Categories) | Dependent Variable (p Value) |
|-------------------------------------------------------|----------------------------------------------------|
| Gender (Three) | Knowledge (.316), Attitudes (.613), Comfort (.474) |
| Sexual Orientation (Four) | Knowledge (.055), Attitudes (.694), Comfort (.550) |
| Non-Hetero/Hetero (Two) | Knowledge (.122), Attitudes (.877), Comfort (.215) |
| Race/Ethnicity (Six) | Knowledge (.534), Attitudes (.685), Comfort (.250) |
| Non-White/White (Two) | Knowledge (.699), Attitudes (.617), Comfort (.080) |
| Religion (Seven) | Knowledge (.441), Attitudes (.684), Comfort (.672) |
| Catholic/Non-Catholic (two) | Knowledge (.947), Attitudes (.241), Comfort (.613) |
| Protestant and Muslim/Non-Protestant and Muslim (Two) | Knowledge (.832), Attitudes (.749), Comfort (.845) |
| Age | Knowledge (.739), Attitudes (.210), Comfort (.172) |

3.3 Association of demographic variables with the outcome variables

All demographic variables were analyzed through non-parametric statistical analysis except for age. Independent variables were analyzed in multiple groups as they were collected (i.e. race and ethnicity) and dichotomized (i.e. Non-White vs. White) to augment specific group effects on the dependent variables. When determining change in knowledge, attitudes, and comfort, Kruskal-Wallis H-tests were conducted when analyzing three or more independent groups from demographic variables and Mann-Whitney U-tests when only two independent groups from demographic variables. Age was plotted against knowledge change, attitude change, and comfort change using Pearson correlation coefficients. All demographic variables were found to have non-significant associations with knowledge change, attitude change, and comfort change.

3.4 Open-ended questions

All participants (n = 77) reported knowing someone personally whom identifies as LGBT+ and reported finding the educational module of benefit to them. The post-test instrument gave the participants an opportunity to discuss what benefits they see from this educational experience. Common discussion points of these responses centered around LGBT+ client education improving comfort, increasing knowledge, increasing awareness of health considerations, and improving ease of communication with LGBT+ clients.

One participant wrote, "I am a little hesitant with working with the LGBT community, not because of any prejudice, but more for fear of making someone feel uncomfortable or making a mistake in how a person would like to be identified. I think this course would really help make us students more comfortable, especially if we do not have a lot of experience working with this population." Another participant wrote about the improved awareness of LGBT+ client health concerns, as they were not aware of many concerns identified within the educational curriculum. Furthermore, a participant wrote "I think that a quarter long class specific to the LGBTQ population should be part of the nursing curriculum." Common themes from these responses are listed in Table 5. Each of the themes listed in Table 5 were found in 4 of more of survey results.

4. DISCUSSION AND CONCLUSION

The results from this study showed marked improvement in LGBT+ health knowledge following the educational intervention. Improvement in the MENP student's attitudes and comfort also occurred from pre-test to post-test data. The improvement of knowledge, more positive attitudes, and

enhancement of comfort do mirror findings from previous studies that are found in the literature.^[3,4,11] Interestingly, the demographic variables collected did not have a statistically significant impact on knowledge, attitudes, or comfort. Previous research has linked some demographic variables to variations in change of knowledge, attitudes, and comfort. For example, higher levels of reported homophobia were found in individuals with high levels of religiosity and individuals identifying as male^[24,29] and general nursing student homophobia their participant samples.^[5,24] Participant religion, sexual orientation, and gender were not significantly correlated with variations in knowledge change, attitudes change, and comfort change. This ultimately means variations in religion, sexual orientation, and gender identity did not cause differences in pre-test to post-test change of knowledge, attitudes, and comfort.

Table 5. Major themes from qualitative question

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|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>Major Themes from Question "How will this education help your practice as a nurse?"</p> <ul style="list-style-type: none"> • Increased Comfort and Confidence with LGBTQ+ Clients • Improved Understanding of Terminology • Increased Knowledge of LGBTQ+ Health Considerations • Increased Consciousness/Awareness of LGBTQ+ Client Needs and Heteronormative Bias • Increased Ease of Interactions/Communication/Assessment of LGBTQ+ Clients |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

Lacking in previous literature is the reporting of effect sizes. Not only is the statistical significance evident from knowledge change pre-test to post-test, the Cohen's d value suggests a large effect size of the LGBT+ health education. The change from pre-test to post-test with both attitudes and comfort was statistically significant, though the Cohen's d value for both variables suggests a small effect size. One contributing factor causing the smaller effect size with both attitudes and comfort could be the lower scores (more positive) at baseline for these variables. At baseline, mean score for attitudes was calculated at 31.99 (range 16-80) and mean comfort was calculated at 22.21 (range 12-60). Both variables did have lower scores (more positive) on post-test and did not change noticeably, like knowledge, from pre-test to post-test. Lower baseline values could represent a sample more accepting of the LGBT+ client community. This would prove difficult to see post-test data change in the affective domain of learning. Given the difficulty of altering the affective domain of learning with only a lecture-style intervention, the use of a LGBT+ client simulation experience as an adjunctive educational intervention could improve attitudes and comfort more than a lecture style educational intervention alone by focusing on both psychomotor and affective domains. Fur-

ther research could be geared towards the use of simulation to further improve student attitudes and comfort with LGBT+ clients.

The LGBT+ health consideration education was integrated into a MENP program which emphasizes community-based nursing in the curriculum. Integrating LGBT+ health education within the community health course in this MENP curriculum can enhance student learning outcomes that focus on community health.

Learning outcomes in the community health course focus on health promotion, disease prevention and community health management. The focuses are covered in detail in the LGBT+ health education intervention.

Based on these results, implementation of LGBT+ health considerations into a MENP program is not only feasible in terms of needed classroom time but has positive outcomes for students. This study augments the previous studies in the literature that highlighted limited LGBT+ health knowledge of nursing students and the efficacy of a short, lecture-style educational intervention on improving knowledge, attitudes, and comfort. Furthermore, schools of nursing with graduate entry to practice programs should consider integration of LGBT+ health into their curriculum given the benefit shown by multiple studies in the literature. On top of the statistical evidence with the major test variables, the students felt this education increased their awareness of LGBT+ health considerations, improved their use and understanding of LGBT+ terminology, and improved the ease of providing care to LGBT+ clients. These findings supplement previous studies

in which participants felt the education was of significant benefit to them as aspiring nurses.

Study Limitations

This study has some limitations in external validity given the context of the study sample population. The LGBT+ educational module was given to a convenience sample of MENP students in a large catholic, urban university. The sample was mainly younger students in their mid-20s, gender was heavily female, mostly Caucasian race, and most participants identified as Roman Catholic religion. This study was quasi-experimental in nature and did not blind nor did it have a control group established to compare findings with. Furthermore, it is not unexpected to see improvement of testing variables immediately following an intervention. This study was meant to assess immediate changes in knowledge, attitudes, and comfort, and did not assess these changes over time for lasting effects of the intervention. Future research should be aimed at assessment of change in knowledge, attitudes, and comfort over time.

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CONFLICTS OF INTEREST DISCLOSURE

The authors declare that there is no conflict of interest.

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