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Nursing Pre-licensure and Graduate Education for LGBTQ Health: A Systematic Review

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Nursing Pre-licensure and Graduate Education for LGBTQ+ Health: A Systematic Review

Introduction

Nurses may struggle to provide competent nursing care to lesbian, gay, bisexual, transgender, and queer plus (LGBTQ+) individuals without foundational training guided by best practices. Seminal work underscores the urgency for nursing programs to codify the integration of LGTBQ+ content throughout undergraduate and graduate curricula to ensure students are: (1) competently prepared to provide care for these populations in alignment with best practices, and (2) able to challenge negative perspectives, stigma, and discrimination of LGBTQ+ individuals seeking health care (De Guzman et al., 2018; Lim & Hsu, 2016). Given that approximately 4.5 % of the United States population identifies as LGBTQ+ (Newport, 2018) and that LGBTQ+ health inequities are well documented, it is imperative that nursing students are prepared to provide competent healthcare to LGBTQ+ individuals, families, and communities.

Despite consensus reached by the American Academy of Nursing (ANA; 2012), the National Institutes of Health (NIH; 2021), and the National Academy of Medicine (2011) urging academic institutions to establish national standards for training health professional students to provide competent care to LGBTQ+ individuals, these recommendations remain largely unrealized (Bonvicini, 2017; McCann & Brown, 2019). Although troubling, this presents an opportunity for the nursing profession to develop and launch a national strategy to educate nursing students to provide comprehensive, culturally responsive, evidence-based health care to LGTBQ+ individuals, families and communities. Data supporting the need for such a strategy is compelling. For example, a series of studies has found that nurses lack the confidence and knowledge to effectively care for LGBTQ+ individuals (Knochel et al., 2011; Poteat et al., 2013; Sabin et al., 2015). Furthermore, experts assert that hostile treatment and discriminatory

behaviors towards LGBTQ+ individuals by nurses and other health care providers further perpetuate LGBTQ+ health disparities, and that such behavior could be lessened through systematic educational training at the undergraduate and graduate levels (Cicero et al., 2019; Clark et al., 2001; James et al., 2016; Knochel et al., 2011; McNair & Hegarty, 2010; Poteat et al., 2013). Given that nursing is the largest health care profession and that nurses are generally recognized as health care providers who spend significant time with individuals seeking health care (American Association of Colleges of Nursing, 2017; Robert Wood Johnson Foundation Initiative on the Future of Nursing et al., n.d.), the need for nursing education to incorporate best practices for the care of LGBTQ+ individuals is paramount.

Misperceptions of nursing students is another crucial concern identified in the literature. Lim and Hsu (2016) found that the majority of older studies identified that students enrolled in nursing programs had misperceptions about gender and sexual activity, harbored negative attitudes towards LGBTQ+ people, and reported that they felt unprepared to provide inclusive and affirming care to LGBTQ+ people. However, their study also identified that more recent literature may point to positive changes in nursing student attitudes towards LGBTQ+ people, yet gaps remain (Lim & Hsu, 2016). Despite the fact that LGBTQ+ populations report significantly poorer mental health, including higher rates of depression and suicidality than cisgender or heterosexual populations (Bouris et al., 2016; Peters et al., 2020; Sutter, Megan E & Perrin, 2016; Testa et al., 2017; Zeluf et al., 2018), almost 25% of nursing students surveyed did not perceive suicide assessment to be important when evaluating the health of LGBTQ+ individuals (Strong & Folse, 2015). Such findings underscore the critical need for schools of nursing to strategically prepare nurses who understand the deleterious impact of discrimination and stigma on the health and well-being of LGBTQ+ individuals.

To increase attention to the importance of culturally responsive and clinically knowledgeable nurses in lessening LGBTQ+ health disparities, examination of the existing evidence about LGBTQ+ content in nursing undergraduate and graduate curricula is needed. Thus, we conducted a qualitative systematic review to examine and critically appraise the peer-reviewed literature that covers nursing student knowledge, skills, and attitudes regarding LGBTQ+ health and the existence, development, and evaluation of LGBTQ+ health content in nursing curricula.

Methods

Qualitative systematic review methodology is the ideal approach to answer the above aims because it includes a systematic search for relevant literature, allowing for inclusion of studies with diverse designs, including experimental, non-experimental and qualitative (Pan, 2016). Additionally, the purpose of a qualitative systematic review is to qualitatively identify themes from the existing literature and consider implications for numerous sectors, such as research and education (Pan, 2016).

Search Strategy and Selection of Articles

Electronic searches of the following databases were completed on June 4, 2020: PubMed, LGBT Health, CINAHL, ERIC, and Health Source-Nursing Nursing/Academic Edition. Appropriate MeSH terms and key terms included three categories of nursing, education, and sexual and gender minority terms (for detailed search terms see full protocol) (Sherman et al., 2020). Inclusion criteria were: (1) published in English; (2) published peer-reviewed original research articles; (3) published between January 2000 and June 2020; (4) U.S. based; (5) included aggregate or individual findings from nursing students with any level of educational preparation; and (6) reported findings related to characteristics of learners (i.e., knowledge, skills, attitudes,

beliefs), [OR] characteristics of the curriculum (e.g., evaluation/description of gaps, Knowledge/content, skills, attitudes/beliefs), [OR] facilitators and barriers to LGBTQ+ curriculum integration, [OR] educational interventions, [OR] LGBTQ+ content delivery (andragogy/pedagogy). Exclusion criteria consisted of the following: (1) reviews, dissertation, theses, or DNP projects, (2) grey literature (e.g., white papers, government documents), and (3) abstracts.

Articles were screened using Covidence – a web-based collaboration software used to conduct systematic and other literature reviews (Veritas Health Innovation, 2021). Title, abstract, and full text review were independently conducted by two reviewers and conflicts were resolved by a third reviewer. See the PRISMA flow diagram (Figure 1) for a full account of screening procedure outcomes based on 2020 PRISMA guidelines (Page et al., 2021).

Data Extraction, Analysis, and Synthesis

A group of five investigators extracted data from the included articles. Data extracted included: (i) study aims/research questions/hypotheses; (ii) population(s) studied, inclusion/exclusion criteria, and demographic data of study participants; (iii) independent and dependent variables, interventions/educational methodologies, measures specific to LGBTQ+ populations [beyond demographic data]; (iv) major findings, additional findings, and limitations. Five different team members performed an audit of 25% (n = 5) of the extracted data. We set a minimum agreement threshold for the average extraction accuracy assessment to 75%. Extraction accuracy was rated using three-levels of agreement: Fully Agree (100%); Mostly Agree (75%); and Disagree (0%). The average agreement across the assessment was 77.1%. The extracted data for any studies not rated “Fully Agree” were revised to correct the concerns of the auditor, and the revised data were included in the data extractions. Only one study was rated “Disagree”; that

study's extraction was reviewed by a subgroup of the data extraction team and audits of other studies by the same primary extractor revealed no patterns of disagreement. Following extraction and audits, the extracted data were then separated into three groups of articles: those about nursing faculty, those about practicing nurses, and those about nursing students. Findings from the nursing faculty and practicing nurse analyses are reported elsewhere.

Quality Appraisal & Thematic Analysis

Two reviewers independently conducted quality appraisal of the articles using the Mixed Methods Appraisal Tool (MMAT), Version 2018 (Hong et al., 2019; Ma et al., 2020) and additional tools to evaluate qualitative, quantitative nonrandomized, and quantitative descriptive studies (Katrak et al., 2004; Lockwood et al., 2015). See Supplemental Materials for full details. Quality appraisal was initially conducted by four members of the study team, with each article being independently appraised by two reviewers. Discrepancies were resolved in video conference meetings among the two reviewers. Any discrepancies that remained following the video conference were adjudicated by a third reviewer.

Study findings were qualitatively analyzed to examine and synthesize patterns and themes found across the included studies. Thematic analysis was conducted by two members of the review team. Codes and themes were developed independently, and discrepancies were discussed and resolved by the two authors. Narratives describing the themes are presented below.

Findings

The search resulted in retrieval of 1,275 articles. Duplicates were removed leaving 1,240 studies that were reviewed for inclusion. The initial screening of abstracts yielded 234 studies for full-text review based on inclusion and exclusion criteria. The full text review yielded 20 studies that met eligibility criteria (see Figure 1). Table 1 summarizes study purposes, designs, and

samples.

Description of Included Studies

The 20 studies addressed several levels of nursing education including undergraduate pre-licensure (n=8), advanced practice (n=2), mixed pre-licensure (n=7), associate pre-licensure (n=1), and advanced practice and pre-licensure (n=2) and varied in design and location (Table 1). Study designs included qualitative (n=3), quantitative (n=15), and mixed methods (n=2) (Table 1). Although some studies used data from multiple states, others used data from multiple institutions within a single state or discrete universities (Table 1). The samples represented rural, non-urban, and urban settings, but many did not provide specifics about the location of the study. Among the studies that included a conceptual framework or theory (n=9), a wide variety of models were reported (Table 1). It was unclear whether the remainder of the studies were atheoretical or if theorical frameworks were used but not reported.

The majority of the studies (n=12) evaluated a wide array of educational interventions; however, no interventions focused on integrating content across an entire nursing program (Table 1). Nine interventions focused on care of transgender people and 11 studies focused on LGBTQ+ generally, with varying levels of inclusion of content about transgender people (Table 1). Pedagogical approach and delivery varied (Table 1). Interventions at the pre-licensure and advanced practice levels included lectures, patient simulation, didactic presentations, reflective writing, guided assignments, panel discussions, question and answer sessions, readings, and structured debriefing sessions (Table 1). When reported, the duration of these interventions ranged from 40 minutes to 4.5 hours. Interprofessional interventions consisted of workshops, online modules, video simulations, team huddles, panel discussions, lectures, interactive talks, and observational experiences (Table 1). Interprofessional interventions varied in duration, and

when reported ranged from 35 minutes to 6.75 hours.

<<<Place Table 1 Here>>>>

Quality assessment. Among the 20 studies there were two quantitative non-randomized studies (Englund, 2018; Klotzbaugh et al., 2020), 13 descriptive quantitative studies (Acker, 2017; Brown et al., 2017; Carabez et al., 2015; Chen et al., 2018; Maruca et al., 2018; McCave et al., 2019; McNiel & Elertson, 2018; Ozkara San et al., 2019; Rowniak, 2015; Schlub & Martsolf, 1999; Strong & Folse, 2015; Vance et al., 2017, 2018), three qualitative studies (Kuzma et al., 2019; Maley & Gross, 2019; Stockmann & Diaz, 2017), and two mixed-methods studies (Holloway et al., 2019; Schweiger-Whalen et al., 2019). None of the studies used a randomized control trial design. Overall, methodologic rigor varied across the 20 studies (Supplementary Material), resulting in barriers to evaluating the quality of findings. Barriers encountered by the investigators included sampling and retention issues, limited used of validated instruments to assess gaps in curriculum or student LGBTQ+ KSA's, response-shift bias (do not know what you do not know on the pre-test), and social desirability response bias (Table 2). Articles frequently reported small non-representative samples, affected by self-selection bias and depressed recruitment and retention, which limited the interpretability of their findings (Table 2). Additionally, designs of several studies did not allow researchers to assess the impact of the interventions being examined (Table 2). Lastly, the lack of validated instruments had a negative effect on researchers' abilities to compare findings across studies and examine the reliability of findings within their own studies (Table 2).

<<<Place Table 2 Here>>>

<<<Place Table 3 Here>>>>

Across the reviewed studies, there was little consistency in measures used to assess

student LGBTQ+ knowledge, skills, and attitudes (Table 3). Twenty different measures and scales were used. Fifteen of these measured LGBTQ+ attitudes, 11 measured LGBTQ+ knowledge, and three measured LGBTQ+ skills (Table 3). Measures used were largely unvalidated (20 of 23; Acker, 2017; Brown et al., 2017; Carabez et al., 2015b; Klotzbaugh et al., 2020; Kuzma et al., 2019; McCave et al., 2019; McNiel & Elertson, 2018; Rowniak, 2015; Schlub & Martsolf, 1999; Schweiger-Whalen et al., 2019; Strong & Folse, 2015; Vance et al., 2017, 2018) and reliability statistics were reported for only 10 of the measures (Table 3).

Themes Identified from Included Articles

Four main themes were identified: Students are aware of their need for improved LGBTQ+ learning; LGBTQ+ curricular interventions result in substantive learning; Direct interaction with LGBTQ+ people results in significant learning; and Facilitators and barriers to LGBTQ+ health education in nursing curricula exist.

Students are aware of their need for improved LGBTQ+ learning. Through the collection of student evaluation, post-activity reflection, or simulation debrief data, several papers reported on students' awareness of their need for improved LGBTQ+ learning (Brown et al., 2017; Carabez et al., 2015; Chen et al., 2018; McNiel & Elertson, 2018; Schweiger-Whalen et al., 2019; Strong & Folse, 2015). Through such mechanisms, students enrolled in health professions programs spoke to the importance of this content for their professional learning needs and expressed interest in learning more about LGBTQ+ healthcare needs, disparities, and skills for practice. Both Carabez et al. (2015b) and Greene et al. (2018) reported a degree of student dissatisfaction with their LGBTQ+ learning opportunities, with students noting LGBTQ+ learning experiences had been absent or not always effective. Such results highlight the need for improved content inclusion as well as further evaluating the quality of LGBTQ+ content

segments in nursing programs.

LGBTQ+ curricular interventions result in substantive learning. Twelve of the 20 studies tested curricular interventions to improve LGBTQ+ knowledge, attitudes, and/or skills (Table 1). All studies employed either a pre-test/post-test or a post-test only design to measure knowledge, beliefs, attitudes, experiences, and skills. The incorporation of LGBTQ+ educational content into curricula demonstrated significant improvements in knowledge, attitudes, and skills across studies. Findings included substantive improvements in awareness and understanding of LGBTQ+ health disparities (Maley & Gross, 2019; McNiel & Elertson, 2018; Strong & Folse, 2015), increased positive attitudes and knowledge (Carabez et al., 2015b; Kuzma et al., 2019; Schweiger-Whalen et al., 2019; Strong & Folse, 2015; Vance et al., 2017, 2018), reduced transphobia (Klotzbaugh et al., 2020), perceived improvement in skills for providing LGBTQ+ health care (Carabez et al., 2015b; Kuzma et al., 2019), and improved perceived self-efficacy (Vance et al., 2018). Students seemed especially to benefit from debriefing or question/answer sessions following a given educational experience (Kuzma , E. K. , Graziano, C. , Shea, E. , Schaller Jr. , F. V., Pardee, M. , Darling-Fisher et al., 2019; McNiel & Elertson, 2018; Schweiger-Whalen et al., 2019; Vance et al., 2018).

Direct interaction with LGBTQ+ people results in significant learning. This theme was exemplified in seven studies that used direct interaction with LGBTQ+ individuals as an intervention component (Carabez et al., 2015; McCave et al., 2019; McNiel & Elertson, 2018; Schweiger-Whalen et al., 2019; Strong & Folse, 2015; Vance et al., 2018). A variety of significant learning outcomes were reported, including: students' improved knowledge about and attitudes toward LGBTQ+ people (Kuzma et al., 2019; Strong & Folse, 2015), increased self-efficacy relative to providing LGBTQ+ care (Vance et al., 2018), empowerment to address

LGBTQ+ healthcare needs (Carabez et al., 2015; McNiel & Elertson, 2018), improved communication skills (Carabez et al., 2015; McCave et al., 2019; Schweiger-Whalen et al., 2019), cultural awareness and empathy development (Kuzma et al., 2019; McCave et al., 2019; Schweiger-Whalen et al., 2019), self-awareness around insensitive behaviors and bias (Kuzma et al., 2019; Schweiger-Whalen et al., 2019), and the development of commitment to LGBTQ+ health advocacy (McCave et al., 2019; Schweiger-Whalen et al., 2019).

Facilitators and barriers to LGBTQ+ health education in nursing curricula exist. Several facilitators and barriers to integrating LGBTQ+ health content into nursing curricula were identified. Facilitators focused on recommendations to improve content integration including content-specific recommendations, pedagogical approaches to content delivery, where (e.g., in which courses or in which part of a course) to integrate content, and how to access and build alliances with LGBTQ+ experts and community members (Brown et al., 2017; Carabez et al., 2015; Chen et al., 2018; Holloway et al., 2019; Ozkara San et al., 2019; Rowniak, 2015; Stockmann & Diaz, 2017; Vance et al., 2017). Some barriers included (a) the impact of religiosity, (b) limited resources, and (c) student self-selection into optional content, among others. In studies that assessed homophobia and/or transphobia, higher levels of homo-/transphobia were associated with a number of factors such as higher levels of reported religiosity, more conservative political perspectives, and fewer personal and educational experiences with LGBTQ+ people (Acker, 2017; Brown et al., 2017; Rowniak, 2015; Schlub & Martsolf, 1999). Limited resources was the most common barrier (McCave et al., 2019; McNiel & Elertson, 2018; Schweiger-Whalen et al., 2019; Vance et al., 2017, 2018). Examples of limited resources included minimal opportunities for clinical exposure and engagement with LGBTQ+ people, as well as resources needed for LGBTQ+ specific content development and integrative

implementation. Importantly, exposure to LGBTQ+ people and content through relatively brief educational interventions was shown to improve attitudes toward LGBTQ+ individuals while significantly decreasing expressions of bias (Klotzbaugh et al., 2020; Strong & Folse, 2015). Lastly, several studies noted intervention engagement and uptake were hindered by student self-selection into the optional intervention or curricular content (Chen et al., 2018; Schweiger-Whalen et al., 2019).

Discussion & Recommendations

This integrative review of LGBTQ+ content in pre-licensure and graduate nursing education revealed an overall low but increasing level of scholarly activity around teaching/learning interventions and research focused on improving nursing students' attitudes, knowledge, and skills in caring for LGBTQ+ people. A majority of the papers report beginning initiatives describing additive, single-site educational interventions with convenience sampling and without use of validated evaluation tools. A smaller subsection of the papers reported descriptive survey research, also using convenience sampling with variable geographic and/or institutional representation.

While our final sample of 20 articles highlights the limited amount of research on LGBTQ+ education in pre-licensure and graduate nursing, we can surmise that with19 of the 20 studies published after 2015, there is a trend toward greater attention to LGBTQ+ content in nursing educational programs. Several important developments occurred from 2010 to 2016, perhaps contributing to the increased activity in more recent nursing LGBTQ+ scholarship. Healthy People 2020 (Department of Health and Human Services, n.d.) included goals for LGBTQ+ health and wellbeing; the National Academy of Medicine (formerly the Institute of Medicine) report on LGBTQ+ health was published in 2011 (Institute of Medicine (IOM), 2011);

the National Institutes of Health office of Sexual and Gender Minority Research (National Institutes of Health, 2021) was established in 2015; and the US Supreme Court decision on marriage equality was delivered in June 2015 (Gates & Brown, 2015). Although it did not address LGBTQ+ people directly, the 2015 revision of the ANA Code of Ethics for nursing (Fowler, 2015) incorporated strong language on social justice, anti-discrimination, and reducing health disparities; and in 2016 the US Department of Health and Human Services Office for Civil Rights codified new rules (US Department of Health and Human Services, 2015) regarding nondiscrimination for LGBTQ+ people in health facilities receiving federal funding, affirming Affordable Care Act prohibitions against LGBTQ+ discrimination in health insurance coverage and health care. These and other historic changes have resulted in dramatically increased visibility of LGBTQ+ people and their health needs across multiple institutional sectors, arguably including within nursing education and scholarship.

Despite these important advances and some evidence that attention to LGBTQ+ content in nursing educational programs is growing, the overall low number of studies in our review underscores the need for research in this area. The dearth of research is likely due, in part, to the difficulty that nurse educators (compared to nurse researchers) have in securing protected time for scholarship, including writing for publication. In a survey of Midwest nurse practitioner (NP) and certified nurse-midwifery (CNM) program coordinators and lead faculty (Smith et al., 2021), the resource constraint of faculty time was one of the most frequently reported barriers to incorporating LGBTQ+ content into NP and CNM curricula. It is also likely that more educators than represented in this review are engaged in efforts to improve nursing education related to LGBTQ+ health.

Several of the cross-sectional survey studies described in the review (Acker, 2017; Brown

et al., 2017; Carabez et al., 2015; Chen et al., 2018; Rowniak, 2015; Schlub & Martsolf, 1999) demonstrate that homophobia, transphobia, and limited exposure to LGBTQ+ individuals is commonly reported by undergraduate and graduate nursing students. Study findings that educational interventions improve attitudes, knowledge and skills provide hope that as more nursing programs incorporate LGBTQ+ content, nursing care for these population groups will improve and sexual and gender minority health disparities will diminish.

Intervention studies in this review typically reported one-time or relatively brief curricular enhancements that focused more on LGBTQ+ knowledge and attitudes than skills and competencies. In general, a goal- or target-level set of competencies was not described, nor did it appear that investigators expected more than very basic improvements in awareness, empathy, or correction of misconceptions about LGBTQ+ people and their health. None of the studies reported a systematic or scaffolded approach toward building practice competencies capable of fostering substantive changes in the health and wellbeing of LGBTQ+ individuals, families, or communities. While simulation was commonly used, it often focused on a one-time encounter, often with a transgender person, which potentially can further objectify transgender people.

Limitations

This integrative review provides the first comprehensive examination of the peer-reviewed literature pertaining to the state of LGBTQ+ education for pre-licensure and graduate nursing students in the US. However, the review has limitations that should be considered when evaluating the results. Studies may have been missed during the article selection process due to publication bias, the search strategy (pulling articles from only five prominent databases), inter-rater reliability (each article was independently screened by two of the eight people contributing to the article selection process), and/or the inclusion and exclusion criteria used to identify articles

(focusing on US-based samples may have limited understanding of other promising educational interventions used in other countries). Additionally, data extraction was performed by five team members and a 25% audit of the extracted data was performed to examine extraction quality. Conducting a 25% audit rather than having two independent extractors for each article may have reduced the consistency and accuracy of extracted data. Finally, few robust standardized measures exist to guide article quality appraisal for integrative reviews that include numerous types of study designs. Our team developed a comprehensive measure using existing tools and adding items to assess pertinent data not covered in those tools. The creation and use of the adapted measure for quality appraisal has yet to undergo psychometric testing; thus, no test of the measure exists beyond inter-rater reliability. Despite these limitations, this review provides important information and an overall understanding of the literature, including important gaps in knowledge about LGBTQ+ nursing education. Such information is essential to guide future research, intervention development, and curricular change.

Recommendations

Research. Although research is growing, additional studies with more rigorous methods are needed to demonstrate improved student learning outcomes when increased LGBTQ+ educational content and learning activities are incorporated into nursing curricula, and the congruency of these outcomes with documented areas of LGBTQ+ health needs. The development of validated measures is needed to evaluate student outcomes, lending confidence to findings and permitting comparison across studies to identify the most effective teaching methods. In particular, studies with longitudinal and experimental designs and those that assess skills and competencies are needed. Additionally, future studies should be theoretically grounded in a relevant conceptual framework to guide the intervention and its evaluation.

Education. A broader and more robust approach to the integration of LGBTQ+ content across courses and curricular levels is needed. Single educational offerings or content limited to one course prevents students from developing a holistic understanding of the complex history, identities, needs, and strengths of LGBTQ+ individuals, families and communities across the life course. Schools of nursing should consider more comprehensive approaches to integrating LGBTQ+ content such as the Tool for Assessing LGBTQ+ Health Training (TAHLT) in pre-licensure nursing curricula (Sherman et al., 2022). This tool was developed as an initiative to integrate LGBTQ+ content across programs in one school of nursing and provides a validated framework across five domains of knowledge, skills, and attitudes. The TAHLT has shown promise as a framework for building greater content depth and competency development into LGBTQ+ curriculum development.

Because nursing education's regulatory bodies (accreditors, certifying organizations) significantly affect curricula and program requirements, these organizations can also exert significant influence on the improvement of LGBTQ+ content in nursing education. Through any number of required content areas (diversity/inclusion, population health, cultural competence, or social determinants of health, for example), accrediting bodies in particular have an opportunity to strengthen specific standards that would require nursing programs to more clearly integrate LGBTQ+ subject matter into nursing curricula, ensuring that processes for accountability and evaluation of LGBTQ+ learning outcomes are apparent. In addition to changes in curricula, establishing more robust curricular standards would inspire publishers of nursing textbooks to bolster LGTBQ+ content consistent with national standards.

Additionally, schools of nursing should work in partnership with practice sites and communities to ensure that educational content relevant to the care of LGBTQ+ people

contributes to high quality clinical care. Events such as the National Nursing LGBTQ Health Summit (Hughes et al., 2022) provide key opportunities for nursing leaders to come together to develop a strategic vision and plan of action to remedy the current deficits in the education of nursing students about the health needs of LGTBQ+ individuals.

Conclusions

Although there are encouraging signs of a nascent science of LGBTQ+ education in nursing, substantially more work is needed to build integrated pedagogical approaches, validated tools, protocols, competency measures, and to document the impact of curricular changes on LGBTQ+ health outcomes and satisfaction with care. Key stakeholders (i.e., schools of nursing, regulatory bodies, and nursing publishers) should strive to ensure that students receive both didactic and clinical knowledge about LGBTQ+ health generated from empirically sound evidence to support competent and affirming nursing care for all LGBTQ+ people and communities. As nursing programs build LGBTQ+ content into nursing curricula, care must be taken to integrate this content fully with the depth of curricular content in population health, social determinants of health, social justice, intersectionality, cultural competence, and political advocacy.

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References

(ANA), A. A. of N. (2012). *Position Statement on Health Care for Sexual Minority and Gender-Diverse Populations*.

Acker, G. M. (2017). Transphobia Among Students Majoring in the Helping Professions. *Journal of Homosexuality*, *64*(14), 2011–2029. https://doi.org/10.1080/00918369.2017.1293404

American Association of Colleges of Nursing. (2017). *The Voice of Academic Nursing*.

Bonvicini, K. A. (2017). LGBT healthcare disparities: What progress have we made? *Patient Education and Counseling*, *100*(12), 2357–2361. https://doi.org/10.1016/j.pec.2017.06.003

Bouris, A., Everett, B. G., Heath, R. D., Elsaesser, C. E., & Neilands, T. B. (2016). Effects of victimization and violence on suicidal ideation and behaviors among sexual minority and heterosexual adolescents. *LGBT Health*, *3*(2), 153–161. https://doi.org/10.1089/lgbt.2015.0037

Brown, C., Keller, C. J., Brownfield, J. M., & Lee, R. (2017). Predicting trans-inclusive attitudes of undergraduate nursing students. *Journal of Nursing Education*, *56*(11), 660–669. https://doi.org/10.3928/01484834-20171020-05

Carabez, R., Pellegrini, M., Mankovitz, A., Eliason, M. J., & Dariotis, W. M. (2015). Nursing students' perceptions of their knowledge of lesbian, gay, bisexual, andtransgender issues: Effectiveness of a multi purpose assignment in a public health nursing class. *Journal of Nursing Education*, *54*(1), 50–53. https://doi.org/10.3928/01484834-20141228-03

Chen, K. D., Wu, A., Yehia, B. R., Greene, M. Z., France, K., Kreider, E. F., & Wolfe-Roubatis, E. (2018). Comparing medical, dental, and nursing students' preparedness to address lesbian, gay, bisexual, transgender, and queer health. *PLoS ONE*, *13*(9), 71–81. https://doi.org/10.1371/journal.pone.0204104

Cicero, E. C., Reisner, S. L., Silva, S. G., Merwin, E. I., & Humphreys, J. C. (2019). Health Care Experiences of Transgender Adults: An Integrated Mixed Research Literature Review.

Advances in Nursing Science, *42*(2), 123–138. https://doi.org/10.1097/ANS.0000000000000256

Clark, M. E., Landers, S., Linde, R., & Sperber, J. (2001). The GLBT health access project: A state-funded effort to improve access to care. *American Journal of Public Health*, *91*(6), 895–896. https://doi.org/10.2105/AJPH.91.6.895

De Guzman, F. L. M., Moukoulou, L. N. N., Scott, L. D., & Zerwic, J. J. (2018). LGBT inclusivity in health assessment textbooks. *Journal of Professional Nursing*, *34*(6), 483–487. https://doi.org/10.1016/j.profnurs.2018.03.001

Department of Health and Human Services, O. of D. P. and H. P. (n.d.). *Healthy People 2020*. Washington, DC: U.S.

Englund, H. (2018). Relationship between marginality and minority status in undergraduate nursing students. *Journal of Nursing Education*, *57*(6), 339–346. https://doi.org/10.3928/01484834-20180522-04

Fowler, M. (2015). *Code of Ethics for Nurses* (2nd ed.). American Nurses Association.

Gates, G. J., & Brown, T. N. T. (2015). *Same-sex couples after Obergefell*. Williams Institute, UCLA School of Law.

Holloway, I. W., Ochoa, A. M., Wu, E. S. C., Himmelstein, R., & Wong, O. (2019). Perspectives on academic mentorship from sexual and gender minority students pursuing careers in the health sciences. *Am J Orthopsychiatry*, *89*(3), 343–353. https://doi.org/10.1037/ort0000410.Perspectives

Hong, Q. N., Pluye, P., Fàbregues, S., Bartlett, G., Boardman, F., Cargo, M., Dagenais, P., Gagnon, M. P., Griffiths, F., Nicolau, B., O'Cathain, A., Rousseau, M. C., & Vedel, I. (2019). Improving the content validity of the mixed methods appraisal tool: a modified e-

Delphi study. *Journal of Clinical Epidemiology*, *111*, 49-59.e1. https://doi.org/10.1016/j.jclinepi.2019.03.008

Hughes, T. L., Jackman, K., Dorsen, C., Arslanian-Engoren, C., Ghazal, L., Christenberry-deceased, T., Lance Coleman, C., Mackin, M., Moore, S. E., Mukerjee, R., Sherman, A., Smith, S., & Walker, R. (2022). How can the nursing profession help reduce sexual and gender minority related health disparities: Recommendations from the national nursing LGBTQ health summit. *Nursing Outlook*. https://doi.org/10.1016/j.outlook.2022.02.005

Institute of Medicine. (2011). The health of lesbian, gay, bisexual, and transgender people: Building a foundation for better understanding. In *The Health of Lesbian, Gay, Bisexual, and Transgender People: Building a Foundation for Better Understanding*. National Academies Press. https://doi.org/10.17226/13128

Institute of Medicine (IOM). (2011). *The Health of Lesbian, Gay, Bisexual, and Transgender People: Building a Foundation for a Better Understanding*.

James, S. E., Herman, J. L., Rankin, S., Keisling, M., Mottet, L., & Anafi, M. (2016). The Report of the 2015 U.S. Transgender Survey. In *National Center for Transgender Equality*.

Katrak, P., Bialocerkowski, A. E., Massy-Westropp, N., Kumar, V. S. S., & Grimmer, K. A. (2004). A systematic review of the content of critical appraisal tools. *BMC Medical Research Methodology*, *4*, 1–11. https://doi.org/10.1186/1471-2288-4-22

Klotzbaugh, R. J., Ballout, S., & Spencer, G. (2020). Results and implications from a gender minority health education module for advance practice nursing students. *Journal of the American Association of Nurse Practitioners*, *32*(4), 332–338.

Knochel, K. A., Quam, J. K., & Croghan, C. F. (2011). Are old lesbian and gay people well served?: Understanding the perceptions, preparation, and experiences of aging services

providers. *Journal of Applied Gerontology*, *30*(3), 370–389. https://doi.org/10.1177/0733464810369809

Kuzma , E. K. , Graziano, C. , Shea, E. , Schaller Jr. , F. V., Pardee, M. , Darling-Fisher, C. S., CS, D.-F., Graziano, C., EK, K., Pardee, M., Jr, S. F. V, & Shea, E. (2019). Improving lesbian, gay, bisexual, transgender, and queer/questioning health: Using a standardized patient experience to educate advanced practice nursing students. *Journal of the American Association of Nurse Practitioners*, *31*(12), 714–722. https://doi.org/doi: 10.1097/JXX.0000000000000224

Lim, F. A., & Hsu, R. (2016). Nursing Students' Attitudes Toward Lesbian, Gay, Bisexual, and Transgender Persons: An Integrative Review. *Nursing Education Perspectives*, *37*(3), 144–152. https://doi.org/10.1097/01.NEP.0000000000000004

Lockwood, C., Munn, Z., & Porritt, K. (2015). Qualitative research synthesis: Methodological guidance for systematic reviewers utilizing meta-aggregation. *International Journal of Evidence-Based Healthcare*, *13*(3), 179–187. https://doi.org/10.1097/XEB.0000000000000062

Ma, L. L., Wang, Y. Y., Yang, Z. H., Huang, D., Weng, H., & Zeng, X. T. (2020). Methodological quality (risk of bias) assessment tools for primary and secondary medical studies: What are they and which is better? *Military Medical Research*, *7*(1), 1–11. https://doi.org/10.1186/s40779-020-00238-8

Maley, B., & Gross, R. (2019). A writing assignment to address gaps in the nursing curriculum regarding health issues of LGBT+ populations. *Nursing Forum*, *54*(2), 198–204. https://doi.org/10.1111/nuf.12315

Maruca, A. T., Diaz, D. A., Stockmann, C., & Gonzalez, L. (2018). Using simulation with

nursing students to promote affirmative practice toward the lesbian, Gay, bisexual, and transgender population: A multisite study. *Nursing Education Perspectives*, *39*(4), 225–229. https://doi.org/10.1097/01.NEP.0000000000000302

McCann, E., & Brown, M. (2019). Homelessness among youth who identify as LGBTQ+: A systematic review. *Journal of Clinical Nursing (John Wiley & Sons, Inc.)*, *28*(11/12), 2061–2072. https://doi.org/10.1111/jocn.14818

McCave, E. L., Aptaker, D., Hartmann, K. D., & Zucconi, R. (2019). Promoting affirmative transgender health care practice within hospitals: An IPE standardized patient simulation for graduate health care learners. *MedEdPORTAL : The Journal of Teaching and Learning Resources*, *15*, 10861. https://doi.org/10.15766/mep_2374-8265.10861

McNair, R. P., & Hegarty, K. (2010). Guidelines for the primary care of lesbian, gay, and bisexual people: A systematic review. *Annals of Family Medicine*, *8*(6), 533–541. https://doi.org/10.1370/afm.1173

McNiel, P. L., & Elertson, K. M. (2018). Advocacy and awareness: Integrating LGBTQ health education into the prelicensure curriculum. *Journal of Nursing Education*, *57*(5), 312–314. https://doi.org/10.3928/01484834-20180420-12

National Institutes of Health. (2021). *Sexual & Gender Minority Research Office*.

Newport, F. (2018). *In U.S., estimate of LGBT population rises to 4.5%*. Gallup.

Office, N. I. of H. S. & G. M. R. (2021). *The National Institutes of Health Strategic Plan to Advance Research on the Health and Well-being of Sexual & Gender Minorities FY21-25*.

Ozkara San, E., Maneval, R., Gross, R. E., & Myers, P. (2019). Transgender standardized patient simulation: Management of an oncological emergency. *Journal of Transcultural Nursing*, *30*(6), 627–635. https://doi.org/10.1177/1043659619849479

Page, M. J., McKenzie, J. E., Bossuyt, P. M., Boutron, I., Hoffmann, T. C., Mulrow, C. D., Shamseer, L., Tetzlaff, J. M., Akl, E. A., Brennan, S. E., Chou, R., Glanville, J., Grimshaw, J. M., Hróbjartsson, A., Lalu, M. M., Li, T., Loder, E. W., Mayo-Wilson, E., McDonald, S., … Moher, D. (2021). The PRISMA 2020 statement: An updated guideline for reporting systematic reviews. *The BMJ*, *372*. https://doi.org/10.1136/bmj.n71

Pan, M. L. (2016). *Preparing Literature Reviews: Qualitative and Quantitative Approaches, 5th ed.*

Peters, J. R., Mereish, E. H., Krek, M. A., Chuong, A., Ranney, M. L., Solomon, J., Spirito, A., & Yen, S. (2020). Sexual orientation differences in non-suicidal self-injury, suicidality, and psychosocial factors among an inpatient psychiatric sample of adolescents. *Psychiatry Research*, *284*(May 2019), 112664. https://doi.org/10.1016/j.psychres.2019.112664

Poteat, T., German, D., & Kerrigan, D. (2013). Managing uncertainty: A grounded theory of stigma in transgender health care encounters. *Social Science and Medicine*, *84*, 22–29. https://doi.org/10.1016/j.socscimed.2013.02.019

Robert Wood Johnson Foundation Initiative on the Future of Nursing, at the I. of M. C., Staff, I. of M., Foundation, R. W. J., Nursing, I. of M. (U. S.). C. on the R. W. J. F. I. on the F. of, (U.S.), N. A. P., Committee on the Robert Wood Johnson Foundation Initiative on the Future of Nursing, at the I. of M., & Medicine, I. of. (n.d.). *The future of nursing: leading change, advancing health*. National Academies Press. https://doi.org/10.17226/12956

Rowniak, S. R. (2015). Factors related to homophobia among nursing students. *Journal of Homosexuality*, *62*(9), 1228–1240. https://doi.org/10.1080/00918369.2015.1037135

Sabin, J. A., Riskind, R. G., & Nosek, B. A. (2015). Health care providers' implicit and explicit attitudes toward lesbian women and gay men. *American Journal of Public Health*, *105*(9),

1831–1841. https://doi.org/10.2105/AJPH.2015.302631

Schlub, S. M., & Martsolf, D. S. (1999). Orthodox Christian beliefs and homophobia in Baccalaureate nursing students. *Nursing Forum*, *34*(2 PG-15), 15.

Schweiger-Whalen, L., Noe, S., Lynch, S., Summers, L., & Adams, E. (2019). Converging cultures: Partnering in affirmative and inclusive health care for members of the lesbian, gay, bisexual, and transgender community. *Journal of the American Psychiatric Nurses Association*, *25*(6), 453–466. https://doi.org/10.1177/1078390318820127

Sherman, A. D. F., Klepper, M., Claxton, A., Deng, A., Ling, C., Mollenkopf, N. L., & Bower, K. (2022). Development and psychometric properties of the tool for assessing LGBTQI+ health training (TALHT) in pre-licensure nursing curricula. *Nurse Education Today*, *110*, 105255. https://doi.org/10.1016/j.nedt.2021.105255

Sherman, A. D. F., She, C. N. E., Smith, S., Bower, K., Moore, S. E., Dorsen, C., Coleman, C. L., & Pre-licensure, T. H. N. (2020). *International prospective register of systematic reviews Citation Review question Participants / population Intervention (s), exposure (s) Comparator (s)/ control Main outcome (s) Additional outcome (s) Data extraction (selection and coding) R*. 1–4.

Smith, S. K., Ruud, M., & Newman, L. (2021). LGBTQ Education in Midwest NP and CNM Programs: A Pilot Study [Poster presentation]. *Midwest Nursing Research Society*.

Stockmann, C., & Diaz, D. A. (2017). Students' perceptions of the psychological well-being of a transgender client through simulation. *Journal of Nursing Education*, *56*(12), 741–744. https://doi.org/10.3928/01484834-20171120-07

Strong, K. L., & Folse, V. N. (2015). Assessing undergraduate nursing students' knowledge, attitudes, and cultural competence in caring for lesbian, gay, bisexual, and transgender

patients. *Journal of Nursing Education*, *54*(1), 45–49. https://doi.org/10.3928/01484834-20141224-07

Sutter, Megan E & Perrin, P. B. (2016). Discrimination, mental health, and suicidal ideation among LGBTQ people of color. *Journal of Counseling Psychology*, *63*(1), 98–105.

Testa, R. J., Michaels, M. S., Bliss, W., Rogers, M. L., Balsam, K. F., & Joiner, T. (2017). Suicidal ideation in transgender people: Gender minority stress and interpersonal theory factors. *Journal of Abnormal Psychology, 126*(1), 125–136.

US Department of Health and Human Services. (2015). *LGBT health and wellbeing: HHS LGBT issues coordinating committee 2015 report*.

Vance, S. R., Deutsch, M. B., Rosenthal, S. M., & Buckelew, S. M. (2017). Enhancing pediatric trainees' and students' knowledge in providing care to transgender youth. *Journal of Adolescent Health*, *60*(4), 425–430. https://doi.org/10.1016/j.jadohealth.2016.11.020

Vance, S. R., Lasofsky, B., Ozer, E., & Buckelew, S. M. (2018). Teaching paediatric transgender care. *Clinical Teacher*, *15*(3), 214–220. https://doi.org/10.1111/tct.12780

Veritas Health Innovation. (2021). *Covidence systematic review software*. www.covidence.org

Zeluf, G., Dhejne, C., Orre, C., Mannheimer, L. N., Deogan, C., Höijer, J., Winzer, R., & Thorson, A. E. (2018). Targeted victimization and suicidality among Trans people: A web-based survey. *LGBT Health*, *5*(3), 180–190. https://doi.org/10.1089/lgbt.2017.0011