

Exploring How Educational Preparedness Affects the Attitudes of Nurses Regarding Sexual and Gender Minorities: A Systematic Review

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Abstract: Numerous sources report that patients belonging to sexual or gender minority (SGM) groups often do not receive proper healthcare services due to negative attitudes from healthcare providers, including nurses. This literature review aims to explore the gaps in the existing curriculum and educational preparedness, including ehealth and mhealth trainings and how such educational preparedness affects the attitudes of nurses toward SGM groups. The search strategy included the electronic databases CINAHL, PubMed, Medline, EBSCO, and ProQuest. After reviewing and removing duplicates and irrelevant studies, 21 articles were selected to be included in this literature review. The findings of this research indicate that the provision of educational resources, including ehealth and mhealth trainings, falls short of meeting the requirements of caring for a patient who identifies with a sexual and gender minority (SGM) group. Consequently, nurses feel less confident and prepared to provide care in such situations, resulting in low comfort levels and readiness. It also reveals the nurses' attitudes towards SGM patients affected by the lack of preparation. Key educational interventions, including targeted seminars and online modules, are recommended to enhance nurse preparedness. Implementing these interventions can foster improved attitudes and cultural competence in healthcare settings.

Keywords: LGBTQ+; patients; nurses; gender minorities; education; preparation



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1. Introduction

1.1. Rationale

Sexual minority individuals exist within all societies and exhibit the same range of racial, ethnic, social, and geographical diversity as individuals who are not part of the sexual minority group [1]. Year by year, the number of individuals identifying as members of the LGBTQ+ community and those demanding their rights is increasing. According to Ipsos (2021) [2], an average of 4% of Gen Z individuals across 27 surveyed countries identify as transgender, non-binary, non-conforming, genderfluid, or in another way that is not strictly male or female. This compares to 2% of Millennials, 1% of Gen X, and less than 1% of Boomers. Globally, 80% of people identify as heterosexual, 3% as gay, lesbian, or homosexual, 4% as bisexual, 1% as pansexual or omnisexual, 1% as asexual, 1% as “other”, and 11% are unsure or prefer not to disclose their sexual orientation [2]. Other statistics indicate that approximately 3.5% of adults in the U.S. identify as part of the LGBTQ+ community, and 0.3% identify as transgender. This corresponds to nearly 9 million people in the LGBTQ+ community, of whom 1.5 million are considered elderly individuals above the age of 65 [3]. The LGBTQ+ community includes members of lesbian, gay, bisexual, transgender, queer, pansexual, asexual, and other communities, all of whom are included in the sexual and gender minority (SGM) group. Until 2020, the LGBTQ+ community made

up approximately 4.5% of the United States population [4], compared to 3.5% in 2017 [5]. These numbers indicate an increase in reported LGBTQ+ individuals globally.

There is research evidence to show that SGM individuals are at higher risk of morbidity and mortality rates compared to the heterosexual population [6–8]. Additionally, LGBTQ+ individuals tend to present poorer outcomes in both mental and physical health compared to the cis-heterosexual population [9]. According to Gil-Borrelli et al. (2017) [10], higher rates of depression, anxiety, substance abuse, self-harm, and suicide attempts have been observed in the SGM group. Additionally, there is a higher prevalence of osteoporosis and certain types of cancer, such as colon, breast, ovarian, anal, testicular, and cervical cancer [10]. A higher proportion of LGBTQ+ individuals are overweight, obese, or suffer from body image and eating disorders compared to heterosexuals. Furthermore, higher rates of transmission of human immunodeficiency virus (HIV), viral hepatitis, and other sexually transmitted infections (STIs) have been recorded [10].

These health inequities can be explained by the minority stress model, first developed by social worker Virginia Brooks [11]. This model refers to the stress that individuals belonging to minority groups experience due to stigmatization from other groups. These stressors are unique, chronic, and socially based, leading to maladaptive coping strategies that manifest as health risk behaviors such as binge eating, overthinking, substance abuse, and risky sexual behaviors [12]. Consequently, individuals who belong to SGM groups often require frequent hospitalization and healthcare interventions, underscoring the importance of being prepared to provide care to all individuals according to their personal needs and respecting them equally regardless of their sexual orientation [13].

Furthermore, people in minority groups often experience discrimination, stigmatization, inequalities, and marginalization even in healthcare facilities, leading to prejudice and difficulties in accessing and using healthcare services [1]. This is a primary reason why some LGBTQ+ individuals postpone or avoid seeking treatment, making it essential to create a safe clinical health environment for all communities. For example, in a study conducted in 2021 by Karakaya and Kutlu [14], LGBTQ+ participants stated that they often did not reveal their sexuality and gender identity to healthcare professionals due to experiences of stigmatization, verbal harassment, and problems in receiving care due to the heteronormative attitudes of healthcare providers (HCPs). Moreover, it has been mentioned that HCPs rarely discuss sexual orientation or gender identity with their patients, as they do not believe it is relevant to care [15].

Poor quality of care is often reported due to stigma, lack of knowledge and awareness from healthcare providers, and insensitivity to the unique needs of the community [5]. Nurses, who provide care to numerous patients with diverse backgrounds and personal variations, play a decisive role in the care provided. By considering these variations, nurses can achieve positive clinical encounters and productive health partnerships with their patients [16].

LGBTQI+ patients do not universally report receiving this standard of care, and nurses do not universally report comfort and competence in providing for LGBTQI+ patients and populations. The professional code of ethics obligates nurses to provide optimal care, advocate for, and respect the dignity of all patients and populations [17,18]. Nurses are often the first healthcare professionals that patients encounter in clinical settings, and if hospitalized, they spend the most time with patients, establishing closer and healthier relationships [15]. Culturally competent nurses can enrich patients' healthcare, minimize health disparities, and improve health outcomes. By understanding the cultural background and unique needs of each patient, nurses can tailor healthcare plans and interventions to be more relevant and effective, thereby enhancing patient engagement and satisfaction. Nurses are expected to integrate cultural competence into their practice and are professionally and ethically responsible for incorporating this into their therapeutic relationships with patients [15].

Nevertheless, incidents of discrimination and inequalities in healthcare towards LGBTQ+ patients are reported. These incidents include unintentional and intentional

misgendering, prejudice, discriminatory attitudes, stigmatizing behaviors, and discriminatory treatment [19]. Sileo et al. (2022) [19] discussed these concerns and attributed such practices to the lack of education and formal preparedness due to insufficient curricula in nursing programs. Hence, it is fundamental to properly educate nursing staff and other healthcare professionals on how to work effectively with LGBTQ+ individuals. It is also crucial to pass on essential knowledge and skills to nurses and other HCPs on how to provide respectful and appropriate care to all individuals, regardless of their sexuality.

1.2. Objectives

Research on the importance of including LGBTQ+ health-related issues in nursing educational curricula is lacking [20,21]. This may be due to the relatively new nature of this topic, which requires further consideration. LGBTQ+ people should be respected by healthcare workers and receive appropriate healthcare. Therefore, this study aims to explore how educational preparedness affects the attitudes of nurses toward SGM and identify the gaps in this preparation. We have formulated two search questions: (a) How does educational preparedness influence the attitudes of nurses toward sexual and gender minorities? (b) What are the educational gaps in nursing curricula related to LGBTQ+ healthcare?

2. Methods

To address these research questions, we conducted a systematic review based on the PRISMA statement. This systematic review was conducted in accordance with the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) guidelines to ensure a comprehensive and transparent reporting of the review process.

2.1. Eligibility Criteria

The inclusion and exclusion criteria that were taken into consideration and helped to choose the articles are summarized in the Table 1 below.

Table 1. Inclusion/exclusion criteria.

Inclusion Criteria	Exclusion Criteria
Specific to LGBTQ+ community	Nurses not included in the sample
Primary sources	Secondary sources
Nurses included in the study sample	Not written in the English language
Written in English	Published earlier than 2015
Published between 2015 and 2023	

2.2. Information Sources and Search Strategy

The databases that were used to find the articles are the following: PUBMED, CINAHL, Medline, and ProQuest. These databases were selected because they are the leading databases in the biomedical literature and provide comprehensive coverage of medical and health-related topics, including nursing care and LGBTQ+ health issues. Several other databases were considered but ultimately not included due to their focus on specific disciplines or their significant overlap with the selected databases.

The search approach employed the Boolean operator OR between the keywords “LGTBQ+”, “Nurses”, “Preparedness”, and comparable MeSH terms. To refine the search, phrases with diverse meanings were joined using the Boolean operator AND. The search approach used on the EBSCO platform for the databases is described in Table 2. We limited the search to journal articles in English with the full text available. However, numerous studies were rejected as they referred to other health professionals than nurses in addition to other healthcare settings than a nursing work environment.

Table 2. Search keyword and strategy.

Population	Interest	Context
(TI ("Registered Nurs*" OR "RN" OR "Nurs*" OR "Nursing staff" OR "Clinical nurse" OR "Nurse specialist" OR "Nurse clinician" OR "Nursing care provider" OR "Nursing team member") OR AB ("Registered Nurs*" OR "RN" OR "Nurs*" OR "Nursing staff" OR "Clinical nurse" OR "Nurse specialist" OR "Nurse clinician" OR "Nursing care provider" OR "Nursing team member") OR DE "Nursing" OR MH "Nursing" OR "Nurses")	(TI ("Training" OR "Education" OR "Competence" OR "Readiness") OR AB ("Training" OR "Education" OR "Competence" OR "Readiness") OR DE "Training" OR MH "Education, Nursing" "eHealth", "mHealth" OR "Training" OR "Professional Competence")	(TI ("LGBTQ" OR "Lesbian, gay, bisexual, transgender" OR "Sexual and gender minority" OR "LGBTQ healthcare" OR "LGBTQ care") OR AB ("LGBTQ" OR "Lesbian, gay, bisexual, transgender" OR "Sexual and gender minority" OR "LGBTQ healthcare" OR "LGBTQ care") OR DE "Sexual and Gender Minorities" OR MH "Sexual and Gender Minorities" OR "Transgender Persons" OR "Homosexuality")

2.3. Study Selection Process

Two researchers (the first two authors) independently searched, retrieved, and selected studies based on three initial criteria: (a) presence of primary research, (b) focus on the LGBTQ community, and (c) relevance to nursing care. They then applied additional criteria for refinement, such as peer-reviewed status and publication date. After the initial selection, the researchers discussed and compiled a list of potential articles, which they shared with four other researchers. This group collectively decided on the final articles to include in the review, making necessary additions or removals according to the relevance to the research question.

2.4. Data Collection Process

Two researchers independently collected data from the selected studies, extracting components, items, statements, or competencies that had reached expert consensus in the final round of each study. They specifically extracted the following information: study title, authors' names, publication year, aim, methodology, study design, and a summary of the main findings and results. After extracting the data, the researchers thoroughly reviewed them multiple times, then coded and identified the overarching themes.

2.5. Data Items

Information on the study title, authors, publication year, country of origin, and study design was collected to provide context and background for each included study. Data on sample size, demographic characteristics of participants (e.g., age, gender, professional role), and specific focus on sexual and gender minority groups were extracted. Comparisons made within the studies, such as between different educational approaches or control groups, were also noted.

2.6. Study Risk of Bias Assessment

The risk of bias in the included studies was assessed using the Joanna Briggs Institute (JBI) Critical Appraisal Checklists. These checklists are designed to evaluate the methodological quality of studies and identify potential biases in their conduct, design, and analysis.

2.7. Effect Measures

The primary outcomes of interest in this systematic review were the attitudes of nurses towards sexual and gender minorities (SGMs) and their readiness to provide care. These outcomes were measured using various scales and questionnaires reported in the included studies. Secondary outcomes included the identification of educational gaps in nursing curricula related to SGM healthcare and the impact of educational interventions on nurses'

knowledge and skills. These were assessed through qualitative analyses and thematic synthesis.

2.8. Synthesis Methods

The data were synthesized through content analysis, categorizing the findings into themes. An initial set of codes was developed by carefully examining the results and findings section of a selected article, and these codes were refined as more articles were analyzed. Each line of text was coded, and a code tree was used to identify emerging themes. Sub-themes were derived and combined from the interpreted meanings, undergoing further analysis until condensed into a single overarching theme. Content analysis helps identify and summarize key elements within extensive data during the review process. The themes related to nurses' educational preparedness concerning sexual and gender minorities were organized following the content analysis method suggested by Zhang and Wildemuth (2009) [22]. To ensure the validity of the results, a two-level quality assurance process was implemented. The authors independently conducted the review procedure, including coding, categorizing, revisiting studies, and refining codes and categories. They then convened, discussed, refined the analysis, and finalized the results.

2.9. Reporting Bias Assessment

To assess the risk of reporting bias, the review considered several factors. The potential for publication bias was evaluated by examining the sources of the included studies. Efforts were made to include both published and unpublished studies, such as conference abstracts and theses, to mitigate this bias.

3. Results

This review adhered to the PRISMA guidelines (Figure 1) [23], providing a systematic framework for conducting reviews and meta-analyses.

3.1. Study Selection

The initial search process resulted in 240 articles related to the LGBTQ+ community and nurses' preparation for providing care. Duplications and articles that were irrelevant to the topic were removed after double-checking (Figure 1). Therefore, 125 articles have been included for advance screening. Forty-two articles did not relate to nurses' work and LGBTQ+ and were omitted. Two researchers thoroughly reviewed the remaining 81 articles independently. From this process, 61 articles were excluded as they did not satisfy the criteria for inclusion. The final number of articles that met the criteria for inclusion was 21. Further information about the articles included are described in Appendix A table.

3.2. Studies Characteristics

The 21 articles included in this review were conducted in various countries and assessed nurses' preparation for caring for LGBTQ patients. Most of the studies used a descriptive, correlational, and cross-sectional design [20,21,24–37], while four employed a qualitative approach [15,38–40] and one was a case study [41]. Further details about the articles, including the author, year, tools, methodology, sample, and main results, are provided in the table in Appendix A.

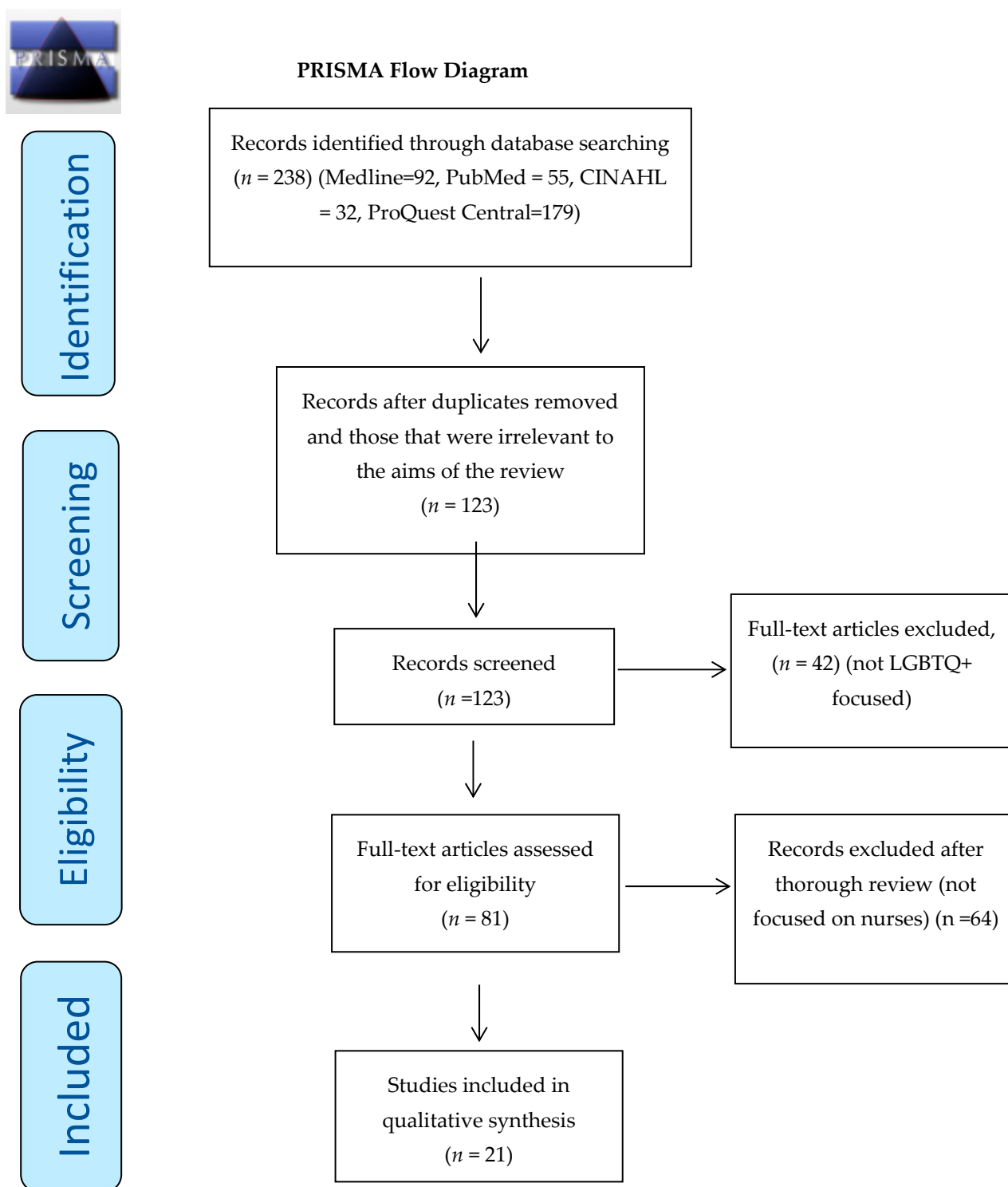


Figure 1. PRISMA flowchart with the search strategy of the systematic review.

3.3. Risk of Bias in Studies

The quality of the articles included in this review was assessed using the Joanna Briggs Institute Qualitative Assessment and Review Instrument Critical Appraisal Checklist. This checklist evaluates the methodological quality of a study and identifies potential biases in its conduct, design, and analysis. As shown in Table 3, the studies included in the review utilized descriptive correlational and cross-sectional designs [20,21,24–37] with four studies employing a qualitative approach [15,38–40] and one case study report [41]. All the

included studies largely adhered to the Joanna Briggs criteria, providing comprehensive and detailed descriptions of their methodologies and procedures, as detailed in Tables 3–5.

Table 3. JBI Critical Appraisal Checklist for Case Reports.

Authors and Year	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8
Westwood, S., James, J., and Hafford-Letchfield, T. (2023) [41]	✓	✓	✓	✓	✓	✓	✓	✓

Table 4. JBI Critical Appraisal Checklist for Analytical Cross-Sectional Studies.

Authors and Year	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8
Athena D.F. Sherman, Alex McDowell b, Kristen D. Clark c, Monique Balthazar d, Meredith Klepper e, Kelly Bower, 2021 [20]	✓	✓	✓	✓	✓	✓	✓	✓
Eickhoff, Clar, 2021 [21]	✓	✓	✓	✓	✓	✓	✓	✓
Özdemir and Erenoglu, 2022 [24]	✓	✓	✓	✓	✓	✓	✓	✓
Soner & Birsen, 2020 [25]	✓	✓	✓	✓	✓	✓	✓	✓
Traister, T. 2020 [26]	✓	✓	✓	✓	✓	✓		✓
Hand & Gedzyk-Nieman, 2022 [27]	✓	✓	✓	✓	✓	✓	✓	✓
Lim, Johnson, & Eliason, 2015 [28]	✓	✓	✓	✓	✓	✓	✓	✓
Pratt-Chapman & Phillips, 2020 [29]	✓	✓	✓	✓	✓	✓	✓	✓
Cornelius, Enweana, Kaysha Alston, Dee M. Baldwin, 2017 [30]	✓	✓	✓	✓	✓	✓	✓	✓
Funda Aslan, Nilay Ercan, ŞahinOya, Nuran Emiroğlu 2019 [31]	✓	✓	✓	✓	✓	✓	✓	✓
Tracey Hodges, Sherry Seibenhener, DianeYoung, 2021 [32]	✓	✓	✓	✓	✓	✓	✓	✓
Keily M. Mitchell, Lakenya Lee, Ayana Green, Jasmine Skyes, 2016 [33]	✓	✓	✓	✓	✓	✓	✓	✓
Uysal Toraman Aynur, Agartioglu Kundakci Gamze, Ulusoy Sahin Cennet, 2020 [34]	✓	✓	✓	✓	✓	✓	✓	✓
Dullius W., Sheila O’Keefe-McCarthy, Lynn McCleary, Silvana Alba Scortegagna, 2023 [35]	✓	✓	✓	✓	✓	✓	✓	✓
Ziegler, E., Luctkar-Flude, M., Carroll, B., Tyerman, J., Chumbley, L., and Shortall, C., 2021. [36]	✓	✓	✓	✓	✓	✓	✓	✓
Qureshi Rubab, Zha Pejia, Porter Sallie, 2020 [37]	✓	✓	✓	✓	✓	✓	✓	✓

Table 5. Risk of bias assessed by the Joanna Briggs Institute Critical Appraisal Checklist for Qualitative Research.

[illegible]

3.4. Results of Individual Studies

A total of 21 studies were included in this systematic review, each contributing unique insights into the educational preparedness of nurses and their attitudes towards sexual and gender minorities (SGMs). Details on the studies can be found in the table in Appendix A.

3.5. Results of Synthesis

Three major themes and subthemes emerged, effectively addressing the research questions and highlighting the complex nature of the topic under investigation. The identified themes were as follows:

Theme 1: Nurses' Attitudes Toward LGBTQ+ Patients

- Negative and Moderate Attitudes
- Impact of Education and Training

Theme 2: Readiness to Care for LGBTQ+ Patients

- Lack of Preparedness and Knowledge
- Impact of Education and Training
- Personal and Demographic Influences

Theme 3: Educational Gaps in Nursing Programs for LGBTQ+ Care

- Limited Coverage of LGBTQ+ Health Topics
- Integration into Existing Courses
- E-health and M-health preparation approaches
- Perceived Insufficiency and Need for Improvement

3.5.1. Nurses' Attitudes Toward LGBTQ+ Patients

Numerous studies [24,25,34,41] have explored nurses' attitudes and experiences related to patients belonging to sexual and gender minority groups, revealing a range of perceptions and attitudes. Overall, the findings indicate that while some nurses exhibit positive attitudes, many display moderate to negative perceptions towards LGBTQ+ patients.

Negative and Moderate Attitudes

Several studies highlight the prevalence of negative or moderate attitudes among nurses and nursing students towards LGBTQ+ patients. These attitudes often manifest themselves as casual homophobia, misconceptions, and discomfort in providing care. For instance, Özdemir and Erenoğlu (2022) found that a significant number of nursing students considered being part of a sexual minority group a disease and had difficulties interacting with LGBTQ+ individuals [24]. Similarly, Soner and Birsen (2020) reported that a portion of nurses viewed LGBTQ identities as a sin, crime, or heresy. Personal and demographic factors, such as religious beliefs, marital status, and personal interactions with LGBTQ+ individuals, significantly influence nurses' attitudes [25]. Aynur et al. (2020) found that married nurses and those with strong religious beliefs exhibited higher levels of homophobia. Conversely, nurses who had personal interactions with LGBTQ+ individuals or received education on LGBTQ health showed more positive attitudes [34].

Impact of Education and Training

A recurring theme across the studies is the critical role of education and training in shaping nurses' attitudes towards LGBTQ+ patients. Lack of education and clinical practice regarding LGBTQ+ health issues are a significant factor contributing to negative attitudes. Özdemir and Erenoğlu (2022) highlighted that most nursing students lacked information about LGBTQ+ individuals and had not provided care to LGBTQ+ patients during their clinical practice [24]. This lack of exposure and education was a major factor influencing their negative perceptions. Soner and Birsen (2020) also emphasized that nurses who received education related to LGBTQ health scored lower on the homophobic scale, underscoring the importance of incorporating LGBTQ+ health topics into nursing curricula [25].

While most studies reported moderate to negative attitudes, there were instances of positive perceptions. For example, Westwood, James, and 40d (2023) noted that some nurses were willing to care for LGBTQ patients and communicate with them, despite the presence of casual homophobia among colleagues [41]. Soner and Birsen (2020) found that a significant portion of nurses (63.7%) were willing to provide care to LGBTQ patients, and 89.1% wanted to communicate with them, indicating a willingness to engage positively despite underlying negative attitudes [25].

The studies also revealed variations in attitudes based on the level of education and training received. Nurses and nursing students who had received education on LGBTQ health issues generally exhibited more positive attitudes compared to those who had not. This contrast was particularly evident in the study by Soner and Birsen (2020), where nurses who had received LGBTQ-related education scored lower on the homophobic scale compared to those who had not [25]. Additionally, the differences between the studies might be attributed to the fact that the two studies were conducted in the same country with a different cultural and religious background in comparison to the other research or due to methodological differences.

In summary, the reviewed studies indicate that nurses' attitudes towards LGBTQ+ patients are influenced by a combination of personal, demographic, and educational factors. While negative and moderate attitudes are prevalent, education and training play a crucial role in fostering more positive perceptions. The findings underscore the need for comprehensive education and training programs in nursing curricula to better prepare nurses for providing inclusive and competent care to LGBTQ+ patients.

3.5.2. Readiness to Care for LGBTQ+ Patients

Several studies have explored the level of nurses' preparedness to care for LGBTQ+ patients, revealing a range of readiness levels influenced by various factors, including education, personal experiences, and demographic characteristics [15,27,28,32,38–40]

Lack of Preparedness and Knowledge

Many studies highlight a significant gap in nurses' education related to LGBTQ+ health. This lack of knowledge often results in feelings of unpreparedness and uncertainty when caring for LGBTQ+ patients. Paradiso and Lally (2018) found that nurse practitioners experienced uncertainty and fear in caring for transgender patients, with many reporting a lack of comprehensive knowledge and resources [39]. Similarly, Manzer et al. (2018) reported that 91% of nursing practitioners recalled no LGBT-specific content in their education, leading them to seek information independently [15]. Rubab et al. (2020) revealed that graduate nursing students had limited knowledge about LGBTQ+ health, with many unable to fully understand common LGBT-relevant terminology [37]. This lack of knowledge contributed to their feeling of unpreparedness to provide care.

Impact of Education and Training

The studies consistently emphasize the critical role of education and training in improving nurses' readiness to care for LGBTQ+ patients. A lack of formal education on LGBTQ+ health issues is a major barrier to preparedness. Manzer et al. (2018) noted that nurses often tried to compensate for their lack of formal education by learning from patients, colleagues, and the literature [15]. However, this ad hoc approach was not sufficient to fully prepare them. Hand and Gedzyk-Nieman (2022) found that while nursing students felt somewhat prepared to care for LGBTQ+ patients in areas like HIV and safe sex practices, they felt less prepared for nonsurgical transitioning and gender-affirming surgery [27]. Importantly, students did not attribute their comfort level to their nursing education, indicating a gap in formal training.

Personal and Demographic Influences

Personal experiences and demographic factors also play a significant role in nurses' readiness to care for LGBTQ+ patients. Nurses who had personal interactions with LGBTQ+ individuals or who identified as LGBTQ+ themselves generally felt more prepared. Hand and Gedzyk-Nieman (2022) found that LGBTQ+ nursing students felt significantly more

prepared than their heterosexual counterparts [27]. Additionally, non-Hispanic White participants reported higher levels of preparedness compared to other racial groups, and cis-gender men felt more ready to care for LGBTQ+ patients than cis-gender women.

Despite the general lack of preparedness, many nurses expressed positive attitudes and a willingness to learn and improve their knowledge about LGBTQ+ health. Paradiso and Lally (2018) reported that although nurse practitioners felt unprepared, they were willing to gain knowledge and experience to better care for transgender patients [39]. Similarly, Rubab et al. (2020) found that 52% of graduate nursing students were interested in advocating for reforms within healthcare institutions to enhance their knowledge and care for LGBTQ+ clients [37].

Studies examining faculty readiness to teach LGBTQ+ health topics revealed mixed results. While some faculty members felt prepared, others reported significant gaps in their knowledge and readiness. Lim et al. (2015) found that 70% of faculty members felt moderately or fully ready to include LGBTQ+ health topics in their teaching, despite many reporting limited awareness and knowledge [28]. In contrast, Hodges et al. (2021) found that 30–40% of faculty members lacked understanding and preparation to teach LGBTQ+ care, with only 7% having received formal training on the topic [32].

In summary, the reviewed studies indicate that nurses' readiness to care for LGBTQ+ patients is influenced by a combination of educational, personal, and demographic factors. While many nurses and nursing students feel unprepared due to a lack of formal education and training, there is a general willingness to learn and improve. The findings underscore the need for comprehensive education and training programs in nursing curricula to better prepare nurses for providing inclusive and competent care to LGBTQ+ patients. Additionally, faculty members require further preparation and training to effectively teach LGBTQ+ health topics, ensuring that future nurses are well-equipped to care for this population.

3.5.3. Educational Gaps in Nursing Programs for LGBTQ+ Care

The analysis of various studies highlights significant educational gaps in nursing programs regarding LGBTQ+ care. These gaps contribute to mixed perceptions of nursing students about their readiness to provide care for LGBTQ+ patients and their overall low level of preparedness. The studies reviewed [21,27,30,31,33] reveal inconsistencies in the inclusion of LGBTQ+ healthcare content in nursing curricula worldwide.

Limited Coverage of LGBTQ+ Health Topics

Eickhoff (2021) found that in 136 examined nursing programs, five or fewer hours were devoted to teaching LGBTQ+ healthcare content [21]. Additionally, 13.3% of the schools did not teach any LGBTQ+ health topics, leading to a cultural deficit that could negatively affect LGBTQ+ patients' healthcare. Hand and Gedzyk-Nieman (2022) reported that while some LGBTQ+ health topics are addressed in prelicensure nursing programs, many areas still need more focus [27]. The most covered topics were HIV, sexually transmitted infections, mental health, and safe sex practices, while geriatric care and gender-affirming surgery were the least covered.

Integration into Existing Courses

Cornelius et al. (2017) found that most nursing schools in North Carolina included LGBT health care content within other courses rather than as a standalone course [30]. This integration often resulted in less than five hours of dedicated instruction on LGBTQ+ health. Ercan-Şahin and Aslan (2020) reported similar findings from nursing students in Turkey, who stated that their curricula did not adequately cover LGBTQ+ health issues [31]. The content was often superficial, and there was a lack of clinical practice opportunities related to LGBTQ+ care.

E-health and M-health preparation approaches

Only two studies that employ e-health and m-health approaches to prepare nurses for providing care to the LGBT+ community were identified; both focused on developing tools for healthcare professionals, including nurses. Dullius et al. (2023) created a course entitled

“Ally: A Holistic Approach to the LGBT+ Individual”, which draws on existing literature and policies to educate healthcare professionals about LGBT+ healthcare. The course content was validated theoretically through semantic checks and expert reviews, involving 28 health professionals across 11 categories, including 8 nurses, to ensure clarity and relevance. Additionally, an m-health application called “Over the Rainbow” was developed using Flutter for cross-platform access. Knowledge tests administered before and after the course assessed its impact on participants’ understanding of LGBT+ issues [35].

Ziegler et al. (2021) developed an online educational toolkit aimed at enhancing cultural humility among healthcare providers when interacting with LGBTQI2S individuals. This initiative included the creation of virtual simulation games (VSGs) and other educational resources to address gaps in nursing education regarding LGBTQI2S health issues. The toolkit was developed through a collaborative process involving LGBTQI2S community members, healthcare providers, and content experts, ensuring authenticity and cultural safety. It includes bilingual resources and is designed to improve healthcare providers’ knowledge, attitudes, and skills. Future plans include expanding the toolkit’s reach and content to incorporate more diverse perspectives and languages [36].

Perceived Insufficiency and Need for Improvement

Mitchell et al. (2016) highlighted that a significant portion of nursing students and faculty in Southeast Georgia did not receive adequate knowledge to provide culturally competent care to LGBTQ+ patients [33]. The curriculum seldom included information related to LGBTQ+ mental health, social issues, sexual education, and sexually transmitted diseases. Ercan-Şahin and Aslan (2020) emphasized the need to expand clinical practice hours and incorporate simulations, videos, and seminars to enhance students’ knowledge about LGBTQ+ health-related issues [31].

Studies investigating the impact of educational interventions on nurses’ knowledge and attitudes towards LGBTQ+ healthcare have shown significant positive changes. Sherman et al. (2021) implemented the Transgender Content Integration Project (TCIP) in a Bachelor of Science in Nursing (BSN) program at Johns Hopkins School of Nursing. After the intervention, students reported increased awareness about patients’ gender identity, improved gender sensitivity, and greater confidence in providing respectful and effective care to transgender and gender-diverse patients [20]. Traister et al. (2020) conducted a study with 112 registered nurses in Pennsylvania, finding that a one-hour educational intervention significantly increased nurses’ knowledge about LGBTQ+ health issues, despite their already positive attitudes and strong baseline knowledge [26]. Pratt-Chapman and Phillips (2020) conducted an 8 h symposium at George Washington University which included several lectures on LGBTQ+ health concerns. Participants reported enhanced knowledge, increased clinical preparedness, and greater confidence in caring for sexual and gender minorities [29]. The symposium was characterized as highly useful, with participants expressing high satisfaction with the educational activities.

The reviewed studies indicate that nursing programs worldwide have significant gaps in their curricula regarding LGBTQ+ healthcare. These gaps contribute to mixed perceptions and low levels of preparedness among nursing students. However, educational interventions have shown to be effective in improving knowledge, attitudes, and clinical preparedness. The findings underscore the need for comprehensive re-evaluation and enhancement of nursing curricula to include more extensive and integrated LGBTQ+ health content. This includes increasing dedicated instructional hours, incorporating practical experiences, and providing ongoing education to ensure that future nurses are well-equipped to provide inclusive and competent care to LGBTQ+ patients.

3.6. Reporting Biases

This review was limited to studies published in English, which may have excluded relevant research published in other languages. This could lead to an over-representation of findings from English-speaking countries and potentially skew the results.

4. Discussion

In this systematic review, 21 articles were analyzed. Four of these articles examined nurses' attitudes and perceptions towards LGBTQ+ patients, seven evaluated the readiness of nurses and faculty in nursing programs to care for LGBTQ+ individuals, and seven explored nursing curricula worldwide, focusing on the inclusion of LGBTQ+ health-related content and the effectiveness of educational interventions. The findings from these articles indicate a significant insufficiency in the education provided by nursing programs, leading to a lack of preparedness among both nursing students and faculty to deliver appropriate care to LGBTQ+ patients. Interestingly, with this review, we have shown that nurses' exposure to ehealth and mhealth trainings in working with sexual and gender minorities is rather limited.

The studies exploring nurses' attitudes and perceptions towards LGBTQ+ patients [24,25,34] revealed mixed results, indicating a moderate level of both positive and negative attitudes. Some participants expressed positive perceptions, recognizing their role in providing care regardless of a patient's sexual orientation. They accepted LGBTQ+ identities and were willing to provide equal care. This is consistent with recent articles that found health professionals to have positive attitudes towards LGBTQ+ patients [42,43]. However, in some studies, a significant number of participants displayed negative attitudes, refusing to provide care to LGBTQ+ patients and viewing LGBTQ+ identities as a disease or sin. Aynur et al. (2020) highlighted that while demographic factors like marital status influenced homophobic attitudes, knowledge, clinical skills, and previous interactions with LGBTQ+ patients were more significant factors [34]. The importance of educational interventions was evident, as levels of homophobia and negative perceptions decreased following such interventions.

Studies on the readiness of nurses and faculty to care for LGBTQ+ patients [27,28,32,37–39] presented contradictory results. Some students felt ready to provide care but did not attribute their comfort to their nursing education. Others felt comfortable but not necessarily prepared due to a lack of knowledge and clinical skills. Most students reported low levels of readiness and comfort. Faculty members also showed varying levels of preparedness, with many lacking the knowledge and training to teach LGBTQ+ health-related content. Those who included such content in their curricula often covered only a few issues and devoted limited hours to it. The studies emphasized the need for comprehensive education and training programs to improve the readiness of both students and faculty. These findings are supported by numerous other studies indicating that health professionals, despite having positive attitudes towards the care of LGBTQ+ patients, lack adequate preparation during their studies [42,43].

The analysis of studies on nursing curricula [21,30,31,33] revealed significant gaps in the inclusion of LGBTQ+ health-related content. Most nursing programs did not offer dedicated courses on LGBTQ+ health, and the content was often integrated into other courses, resulting in less than five hours of instruction. The material covered was usually superficial, focusing on theoretical aspects without providing clinical practice opportunities. This lack of comprehensive education led to nurses seeking knowledge and experience through other means, as their programs did not adequately prepare them to care for LGBTQ+ patients. Cornelius and Carrick (2015) identified this failure as a primary reason for negative attitudes, prejudice, discrimination, and stigma among nursing students towards LGBTQ+ patients [44]. This is strongly supported by Sherman et al. (2023), who reported that while there are promising developments in the science of LGBTQ education within nursing, significant efforts are still required to develop comprehensive teaching methods, validated tools, protocols, competency assessments, and to document the effects of curriculum changes on LGBTQ health outcomes and care satisfaction [20]. Additionally, Priddle et al. (2023) emphasized that nursing LGBTQ+ educational content, resources, and policies demand reformation to align with theoretical and social progress [45].

Studies on the effectiveness of educational interventions [20,26,29] demonstrated significant positive changes in knowledge, comfort levels, perceptions, readiness, and

clinical skills related to LGBTQ+ healthcare. These interventions increased awareness and confidence among nurses, highlighting the importance of enriching and reorganizing nursing curricula to include comprehensive LGBTQ+ health-related content. By addressing these educational gaps, nursing programs can improve the readiness and attitudes of nurses, leading to better care for LGBTQ+ patients.

The findings from this systematic review underscore the need for comprehensive re-evaluation and enhancement of nursing curricula to include more extensive and integrated LGBTQ+ health content. This includes increasing dedicated instructional hours, incorporating practical experiences, and providing ongoing education to ensure that future nurses are well-equipped to provide inclusive and competent care to LGBTQ+ patients. Additionally, faculty members require further preparation and training to effectively teach LGBTQ+ health topics, ensuring that nursing students receive the education necessary to care for all patients, regardless of their sexual orientation or gender identity.

Incorporating mandatory coursework on LGBTQ+ healthcare into nursing curricula can ensure that all nursing students receive essential training. This approach guarantees foundational knowledge and promotes uniformity in competency across the board, equipping future nurses with the skills needed to provide inclusive care. Additionally, offering optional workshops or seminars allows for deeper exploration of LGBTQ+ healthcare issues. Furthermore, utilizing simulation exercises, such as virtual simulation games, can provide hands-on experience in a controlled environment.

In examining broader global trends, our discussion addresses the growing integration of digital learning platforms in healthcare education, a trajectory highlighted by the World Health Organization [46]. Despite this movement, our study finds that only two online training programs specifically target the preparation of nurses in LGBTQ+ healthcare. This underlines the need for further development and implementation of technology-enhanced learning solutions to effectively bridge the current educational gaps. The identified programs, which leverage e-health and m-health platforms, exemplify the potential of these digital tools to provide flexible, accessible training that is essential for equipping nurses with the necessary cultural competence to deliver inclusive care.

Nursing educators and administrators can utilize these findings to advocate for comprehensive policy reforms. Nursing leadership can play a pivotal role in integrating LGBTQ+ healthcare competencies into accreditation standards for nursing programs, ensuring that such education becomes a requirement for program approval. Administrators should prioritize investments in professional development to equip faculty with the necessary knowledge and tools for effectively teaching LGBTQ+ content. Based on our findings, nursing programs should implement institutional policies that foster inclusivity, such as cultivating a supportive environment for LGBTQ+ students and staff. Additionally, curricula should be regularly evaluated to address gaps in cultural competence education and ensure alignment with evolving best practices.

5. Limitations

The studies reviewed were conducted in various countries with different cultural and healthcare contexts. This diversity can introduce geographical and cultural biases, making it difficult to generalize findings on a global scale. Studies conducted in Western countries often reflect the healthcare systems, cultural norms, and social attitudes prevalent in those regions, which may not be applicable to non-Western contexts. In some countries, societal norms and legal frameworks may restrict open discussions of LGBTQ+ issues, thereby limiting the scope and nature of research in these regions. Furthermore, the perception and recognition of LGBTQ+ individuals vary widely across cultures, influencing both healthcare practices and research outcomes. Additionally, the reviewed studies employed different methodologies, including qualitative, quantitative, and case study approaches. Moreover, many of the studies relied on self-reported data from nurses and nursing students, which can be subject to social desirability bias. Finally, a significant limitation of our review is the reliance on self-reported data in several included studies, which can introduce various

biases, such as recall bias, where participants may struggle to accurately remember past experiences. Additionally, individuals who choose to participate in these studies may have a specific interest or a vested stake in LGBTQ+ topics, potentially skewing the results. To address these biases in future research, we recommend employing observational and mixed-methods approaches, which can provide more robust and comprehensive insights.

Registration and protocol: Not applicable.

6. Conclusions

Based on a systematic review, this research explored nurses' attitudes, their level of readiness to provide care to LGBTQ+ individuals, the existing nursing curriculum, and the ability and preparedness of nursing program faculty to provide such knowledge. The findings revealed that current nursing curricula do not adequately cover the knowledge and skills needed for nurses to care for the SGM (sexual and gender minority) group. Furthermore, this study highlighted the importance of educational interventions, such as seminars, symposiums, lectures, and ehealth and mhealth training in preparing and educating nurses about LGBTQ+ health-related issues and care. We highlight digital platforms as tools to deliver interactive learning experiences, such as virtual simulation games and mobile applications. These tools can provide flexible, asynchronous learning opportunities and real-world scenarios to enhance clinical skills.

This study also opened new directions for research by emphasizing nursing students' opinions about the topic and identifying areas for improvement. In summary, there is an urgent need for the re-evaluation, enhancement, and reorganization of nursing curricula across universities worldwide to ensure that nurses are adequately prepared to care for patients whose sexual orientation and gender identity differ from cis-heterosexual norms. Additionally, there is a need to prepare educators to effectively teach LGBTQ+ material, as the literature review noted their unpreparedness.

Further exploration of this topic is recommended, along with direct interventions to enrich nurses' knowledge related to LGBTQ+ healthcare. By addressing these educational gaps, nursing programs can improve the readiness and attitudes of nurses, leading to better care for LGBTQ+ patients.

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Conflicts of Interest: The authors declare no conflicts of interest.

Appendix A

Authors/Title	Aim of Study	Methodology	Sample	Results
1. Attitudes of nursing students towards LGBT individuals and the affecting factors (Rana Can Özdemir and Rabiye Erenoğlu, 2022) [24]	To determine the attitudes of nursing students towards LGBT (lesbian, gay, bisexual, and transgender) individuals and the affecting factors.	Descriptive, cross-sectional study	287 nursing students	<ul style="list-style-type: none"> Students' attitudes towards LGBT individuals are at a medium level. Male participants have more negative attitudes towards LGBT individuals.
2. Determining attitudes of a group of nurses working in the northern region of Turkey towards LGBT individuals (Güven Soner, Altay Birsen, 2020) [25]	To determine the attitudes of a group of nurses towards lesbian, gay, bisexual, and transgender individuals.	Cross-sectional study	358 nurses	<ul style="list-style-type: none"> The level of education, level of acquaintance with LGBT individuals, and knowledge of LGBT individuals influence homophobic attitudes. Nurses' perceptions and attitudes are mixed and are affected by their personal variations and beliefs.
3. Improving LGBTQ Cultural Competence of RNs Through Education (Traister, Tyler, 2020) [26]	Understanding of the knowledge and attitudes of RNs about LGBTQ people and the impact of an educational intervention.	Descriptive correlational study with a cross-sectional design	RNs (N = 111) who worked in four different hospitals in the Pittsburgh metropolitan region	<ul style="list-style-type: none"> There is a need for educational interventions. Nurses have somewhat positive attitudes about LGBTQ people.
4. Graduating nursing students' preparedness and comfort level in caring for LGBTQ+ patients (Mark C.Hand, StephanieGedzyk-Nieman, 2022) [27]	Assessment of graduating prelicensure nursing students' perceived preparedness for and comfort level with providing care for LGBTQ+ patients.	Multisite descriptive correlational design survey	359 graduating prelicensure nursing students	<ul style="list-style-type: none"> LGBTQ+ health topics had been covered in their programs, but some required further attention. The majority reported feeling prepared and sufficiently comfortable to provide care for LGBTQ+ patients but did not attribute this to their academic nursing education. Select demographic variables were significantly correlated to student levels of preparedness and comfort.
5. A National Survey of Faculty Knowledge, Experience, and Readiness for Teaching Lesbian, Gay, Bisexual, and Transgender Health in Baccalaureate Nursing Programs (Fidelindo Lim, Michael Johnson, and Michele Eliason, 2015) [28]	Assessment of faculty's knowledge in baccalaureate nursing programs and their readiness to teach about lesbian, gay, bisexual, and transgender (LGBT) health.	Survey of a nonprobability purposive sample	Nursing school administrative leaders (N = 739)	<ul style="list-style-type: none"> The knowledge, experience, and readiness for teaching LGBT health among baccalaureate faculty are limited. LGBT faculty reported greater awareness, knowledge, and readiness compared with heterosexual faculty. The estimated median time devoted to teaching LGBT health was 2.12 h.

Authors/Title	Aim of Study	Methodology	Sample	Results
6. Health professional student preparedness to care for sexual and gender minorities: efficacy of an elective interprofessional educational intervention (Mandi L. Pratt-Chapman, Serena Phillips, 2020) [29]	To compare surveyed learner knowledge, attitudes, and clinical preparedness, as well as perceived value of interprofessional learning, before and after educational interventions.	<ul style="list-style-type: none"> Pre-/post-test with comparison group design Anonymous pen-and-paper surveys 	134 health professional students	<ul style="list-style-type: none"> Statistically significant improvements for confidence in all learning objectives and for two of three factors (knowledge and clinical preparedness) of the Lesbian, Gay, Bisexual, and Transgender Development of Clinical Skills Scale (LGBT-DOCSS). Participants at post-test rated higher on learning objectives, the attitudes and knowledge LGBT-DOCSS factors, and perceived value of interprofessional learning as measured by four items from the Interprofessional Learning Scale.
7. Examination of Lesbian, Gay, Bisexual, and Transgender Health Care Content in North Carolina Schools of Nursing (Judith B. Cornelius, Ijeoma Enweana, Celeste Kaysha Alston, Dee M. Baldwin, 2017) [30]	To examine how LGBT health care content is integrated into North Carolina schools of nursing curricula and the existence of specific LGBT policies.	Exploratory descriptive study	70 deans and directors of RN programs in North Carolina	<ul style="list-style-type: none"> Over 90% of the schools indicated that LGBT health care issues were taught in the curricula. The majority of the content was taught as an “other” course (37%). More than two-thirds of the schools devoted less than 5 h to teaching LGBT content.
8. Identifying Gaps in LGBTQ Health Education in Baccalaureate Undergraduate Nursing Programs (Eickhoff, Clar, 2021) [21]	To examine the LGBTQ health content taught in nursing schools on a national level and nursing schools’ interest in and readiness for expanded content.	Cross-sectional descriptive	136 programs in undergraduate nursing degrees	<ul style="list-style-type: none"> Two-thirds of responding schools indicated their graduates were not adequately prepared to care for this population. A total of 38% of schools agreed their faculty had the knowledge needed to adequately teach this content. Barriers included time constraints and lack of faculty knowledge.
9. Turkish nurse educators knowledge regarding LGBT health and their level of homophobia: A descriptive-cross sectional study (Funda Aslan, Nilay Ercan, ŞahinOya, Nuran Emiroğlu 2019) [31]	<ul style="list-style-type: none"> To identify the levels of homophobia present in nursing students. To assess their knowledge requirements regarding the health of LGBT individuals. To evaluate the status of the integration of LGBT health-related topics into the content of nursing education. 	<ul style="list-style-type: none"> Descriptive study–cross-sectional study 	61 nursing students	<ul style="list-style-type: none"> Content related to the healthcare issues of LGBT (lesbian, gay, bisexual, transgender) individuals was not found in the education they received.

Authors/Title	Aim of Study	Methodology	Sample	Results
10. “Never in All My Years. . .”: Nurses’ Education About LGBT Health (Rebecca Carabez, MarionPellegrini, AndreaMankovitz, MickeyEliason, MarkCiano, MeganScott 2015) [38]	To evaluate the state of training/education and the comfort level of nurses regarding LGBT health care needs.	Assessment method with key informant interviews	268 practicing nurses	<ul style="list-style-type: none"> Most of the nurses revealed that they had no education or training on LGBT health issues. Nurses reported gaps in knowledge and discomfort in practice that may adversely affect patient care. LGBT health care education needs to start in nursing schools and programs. Nursing curricula, continuing education, and institutional policies are addressed.
11. Incorporating health care concepts addressing the needs of the lesbian, gay, bisexual, and transgender population in an associate of science in nursing curriculum: Are faculty prepared? (Tracey Hodges, Sherry Seibenhener, DianeYoung, 2021) [32]	To determine nursing faculty’s preparation for addressing the needs of the LGBTQ population.	Descriptive design	Nursing faculty employed in 58 ASN programs located in five south-eastern states (Alabama, Georgia, Florida, Mississippi, and Tennessee)	<ul style="list-style-type: none"> Lack of understanding, knowledge, and preparation necessary to incorporate culturally competent and fact-based LGBTQ education into their ASN program curricula.
12. Nurse Practitioner Knowledge, Attitudes, and Beliefs When Caring for Transgender People (Catherine Paradiso, Robin M. Lally, 2018) [39]	To explore nurse practitioner (NP) knowledge, attitudes, and beliefs when working with transgender people and inform about practitioner education needs.	Qualitative descriptive design	11 (N = 11) NPs in the northeastern United States who represent various years of experience and encounters with transgender patients	<ul style="list-style-type: none"> Four main themes and six subthemes were identified: the main themes include personal and professional knowledge gaps, fear and uncertainty, caring with intention and pride, and creating an accepting environment. NPs identified gaps in their knowledge that threaten their ability to deliver quality, patient-centered care to transgender patients, despite their best intentions.
13. The Gaps in Health Care of the LGBT Community: Perspectives of Nursing Students and Faculty (Keily M. Mitchell, Lakenya Lee, Ayana Green, Jasmine Skyes, 2016) [33]	To explore the gaps, challenges, and successes in a BSN nursing educational curriculum.	Cross-sectional descriptive design	183 participants	<ul style="list-style-type: none"> Education about LGBT health is sparse in nursing schools.
14. Myths, misunderstandings, and missing information: Experiences of nurse practitioners providing primary care to lesbian, gay, bisexual, and transgender patients (Dana Manzer, Lucia F. O’Sullivan, Shelley Doucet, 2018) [15]	To examine in detail the practice experiences of NPs in providing primary health care to LGBT patients.	Exploratory qualitative descriptive study	22 nurse practitioners	<ul style="list-style-type: none"> NPs reported notable gaps in the training and education on LGBT health that they had received. When LGBT-focused content was included in the curricula, it was described as lasting only minutes to a few hours. Only two participants (9%), reported participating in or receiving continuing education or training related specifically to LGBT health since the completion of their NP program.

Authors/Title	Aim of Study	Methodology	Sample	Results
15. Transgender and gender diverse health education for future nurses: Students' knowledge and attitudes (Athena D.F. Sherman, Alex McDowell b, Kristen D. Clark c, Monique Balthazar d, Meredith Klepper e, Kelly Bower, 2021) [20]	To assess the preliminary efficacy and feasibility (i.e., attrition, engagement, acceptability) of TCIP in improving TGD-related health knowledge and attitudes.	Collecting quantitative research	160 nursing students	<ul style="list-style-type: none"> TGD-specific content improved student's gender sensitivity over time. Gender sensitivity remains low among students, and students requested more TGD content, suggesting room for further improvement.
16. An Assessment of Lesbian, Gay, Bisexual, and Transgender Health Competencies Among Bachelors-Prepared Registered Nurses in Graduate-Level Study (Qureshi Rubab, Zha Peijia, Porter Sallie, 2020) [37]	To assess graduate nursing students' lesbian, gay, bisexual, and transgender (LGBT)-specific health competencies .	Cross-sectional design	116 nursing students	<ul style="list-style-type: none"> Participants' knowledge about LGBT health was limited and they did not feel ready to educate other colleagues. A total of 52% would advocate reforms within existing health care institutions to improve the care of LGBT patients.
17. Attitudes of Nurses to Lesbian, Gay, Bisexual and Trans (Lgbt) Individuals in Turkey (Uysal Toraman Aynur, Agartioğlu Kundakci Gamze, Ulusoy Sahin Cennet, 2020) [34]	To identify the attitudes of nurses in Turkey to LGBT individuals and the demographic factors that influence these attitudes.	Descriptive and relational study	192 volunteer nurses	<ul style="list-style-type: none"> The homophobic attitudes of nurses who did not have homosexual acquaintances were found to be higher than those of nurses who had homosexual acquaintances. The marital status of nurses affected their homophobic attitudes. Nurses who said they fulfilled all the requirements of their religion had a higher homophobia score. The religious characteristics of the nurses influenced their homophobic attitudes.
18. Knowledge and practice of primary care nurses about gender and care for LGBTQIA+ people Elisama Ferreira Paiva Rodrigo Jacob Moreira de Freitas Marcelino Maia Bessa Janieiry Lima de Araújo Sâmara Fontes Fernandes Palmyra Sayonara Góis1 2023 [40]	To understand the knowledge and practice of primary health care nurses about gender and assistance to LGBTQIA+ people.	Qualitative research	9 nurses	<ul style="list-style-type: none"> The results show a lack of knowledge of conceptions of gender and identities that go beyond the binaries of man–woman, male–female, and heterosexuality–homosexuality, anchored in the historical naturalization of the cisgender experience. The participants expressed subtle violence in their speech and were found to ignore patients' health needs, strengthening inequities in health and increasing barriers to health service access. Another important finding is the predominance of the conception of sexual orientation or gender identity as personal choice, as if the individual chose to experience pain, inequities, and hostility as part of a group that is historically harassed in society and, especially, in health services.

Authors/Title	Aim of Study	Methodology	Sample	Results
19. 'He's a Gay, He's Going to Go to Hell.': Negative Nurse Attitudes Towards LGBTQ People on a UK Hospital Ward: A Single Case Study Analysed in Regulatory Contexts. Westwood, S., James, J., and Hafford-Letchfield, T. (2023). [41]	To explore what is known about the balancing of religious freedoms, sexual orientation, and gender identity rights in older age care spaces.	Case study	1 single interview	<ul style="list-style-type: none"> Claire encountered some problematic attitudes towards LGBTQ people. She gave several examples of casual homophobia among nursing colleagues. This reflects one of the major concerns of older LGBTQ people, both in terms of being mis-recognized because they are seen through a lens of hypersexuality (i.e., being seen only in terms of the sexual) and rendered invisible because of the association with older age and asexuality (Hafford-Letchfield Citation2021). Claire's observations offer insights into how negative attitudes towards LGBTQ people can sometimes inform practice and that these can be, but are not always, informed by strongly held religious beliefs. Research suggests that staff with negative attitudes towards LGBTQ people are more likely to hold strong, traditional, religious beliefs.
20. Dullius W., Sheila O'Keefe-McCarthy, Lynn McCleary, Silvana Alba Scortegagna, Con-tinuing education with a holistic approach to the Brazilian LGBT+ population through use of the m-health App [35]	To discuss the development of a continuing education course for health care professionals to provide competent healthcare assistance to the Brazilian LGBT+ population and the implementation of this course using an m-Health solution.		28 health professionals	<ul style="list-style-type: none"> The program consists of six modules: (i) human sexuality, (ii) equitable care and proper terminology, (iii) public health policy for the LGBT+ population, (iv) cultural competencies for health professionals, (v) aging and healthcare for the LGBT+ community, and (vi) mental health of LGBT+ individuals.
21. Ziegler, E., Luctkar-Flude, M., Carroll, B., Tyerman, J., Chumbley, L., and Shortall, C. (2021). Development of an online educational toolkit for sexual orientation and gender identity minority nursing care. [36]	To develop and implement an online education resource to address a gap in nursing education regarding the concept of cultural humility and its application to healthcare encounters with persons who identify as lesbian, gay, bisexual, transgender, queer, or intersex (LGBTQI)	An online educational toolkit that included virtual simulation games and curated resources was developed. The development process included community involvement, a team-building meeting, development of learning outcomes, decision-point maps, and scriptwriting for filming. A website and learning management system was designed to present learning objectives, curated resources, and virtual games.		<ul style="list-style-type: none"> The Sexual Orientation and Gender Identity Nursing Toolkit was created to advance cultural humility in nursing practice. The learning toolkit focuses on encounters using cultural humility to meet the unique needs of LGBTQI and Two-Spirit communities.

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