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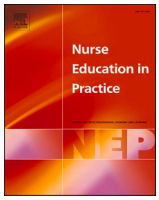

Addressing the effects of transcultural nursing education on nursing students' cultural competence: A systematic review

Betül Tosun [h,1,2,*], BENEFITS Group

[h] Hasan Kalyoncu University, Faculty of Health Sciences, Nursing Department, Gaziantep, Turkey

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ABSTRACT

Aim: This study aimed to synthesize the findings of studies evaluating educational programs providing curricular transcultural nursing education.

Backgrounds: Nursing care education about cultural diversity and experience with taking care of patients from different cultures and special populations are significant factors that could likely influence cultural competence. The effect of transcultural nursing education given to nursing students has been investigated by different researchers and different methods. Addressing the effects of transcultural nursing education on nursing students' cultural awareness, knowledge and attitudes can contribute to future transcultural nursing education activities and the creation of training content.

Design: This study was a methodological systematic review study.

Methods: Methodological quality was assessed following the PRISMA guidelines. PubMed, Science Direct, APA PsycArticles, OVID, EBSCO, and Web of Science databases were searched from 2010 to 2020. The following keywords were used: "Transcultural nursing", "education", "curriculum", "course", "effectiveness", "cultural competence", "knowledge", "skills", "attitudes", and "nursing students". Studies published in peer-reviewed journals in English using both experimental and quasi-experimental designs were included.

Results: Total of 11 research papers, (n = 1375) nursing students' outputs were included in this review. Cultural competence interventions/programs were provided as part of the core theoretical courses or as elective courses. Different durations and types of teaching methods included debates, discussions, case scenarios, practicums, simulation, international learning projects, experiential learning, storytelling, and traditional teaching lectures. In ten studies, an increase in the level of culture-related competences was reported as statistically significant ($p < 0.05$).

Conclusions: Limited studies have generally proven the effectiveness of transcultural nursing education provided to nursing students. Education content, training methods and training periods were not standard in the literature. More comprehensive, valid and reliable measurement tools are needed to evaluate the education provided for nursing students.

1. Introduction

Nursing is grounded on a humanistic and holistic approach that harmonizes compassion, honesty, kindness, altruism in delivery of healthcare and involves taking into account the cultural needs of patients, need for equal access to health care, respect for cultural background, beliefs and safety needs (Papadopoulos et al., 2021; Prosen, 2015). Transcultural nursing education is closely linked to the belief that nursing should provide individualized, high-quality, appropriate care to all individuals (McFarland and Wehbe-Alamah, 2019).

Nurses must have sufficient knowledge about different cultural backgrounds and traditions to be competent to perform holistic patient assessments (Albougami et al., 2016). Therefore, nursing students must develop cultural awareness, knowledge, and skills through a transcultural nursing curriculum before graduation (Byrne, 2020). Campinha-Bacote's model explains cultural competence as a process that nurses must undertake to develop the capacity to provide efficient and high-quality care, encompassing five components (Albougami et al.,

* Corresponding author.
E-mail address: tosunbetul@gmail.com.
[1] Postal Address: Hasan Kalyoncu University 8th Km on the Airport Road, Sahinbey / GAZIANTEP
[2] ORCID: https://orcid.org/0000-0002-4505-5887

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2016; Campinha-Bacote, 2011). Cultural awareness is a process by which healthcare professionals consciously acknowledge their own cultural background and help them avoid prejudices against other cultures. Cultural skills are defined as the ability to obtain necessary information from patients through culturally appropriate behavior and physical assessment. Cultural knowledge is another component by which health professionals open their minds to see diversities in cultural characteristics regarding illness and patient beliefs towards health. Cultural encounter explain the interaction between healthcare professionals and members of different cultures. The final component is cultural desire, which is the force of being educated, talented, competent and culturally conscious (Campinha-Bacote, 2011; O'Brien et al., 2021; Prosen, 2015; Repo et al., 2017). Nursing students should be aware of their own cultural values, beliefs, attitudes, and behaviors and possess the appropriate assessment and communication skills to interact with individuals from different cultural backgrounds (Sarafis and Malliarou, 2013). However, for the most part, the nursing educational system does not consider cultural competence as a main attitude in general (Ke and Hsu, 2015; Raigal-Aran et al., 2017). As a result, nursing students can feel inadequately prepared to provide culturally competent care to populations with different cultural backgrounds (Von Ah and Cassara, 2013). Some studies have found that nursing students named barriers, such as exhibiting a lack of confidence and transcultural self-efficacy and having problems with different languages, while assessing patients from different cultural backgrounds (Sarafis and Malliarou, 2013; Karatay et al., 2016). Given these factors, the most important facilitators of the development of cultural competence were cultural encounters, knowledge, and experiences (Chen et al., 2018; Choi and Kim, 2018). It was found that nursing care education about cultural diversity and experience with taking care of patients from different cultures and special populations were significant factors that could likely influence cultural competence (Cruz et al., 2016, 2017).

In nursing education, cultural awareness is one of the most important components of culturally competent nursing care. Cultural awareness can also be an indispensable component of understanding one's own cultural characteristics and values, which helps in understanding the cultural beliefs, values and behaviors of others (Kaihlanen et al., 2019). Cultural awareness of one's own beliefs, values, attitudes and practices has been defined as an essential first step before cultural knowledge (Brooks et al., 2019). Therefore, nursing education should include cultural values, behaviors, diversities and norms that will support students' cultural awareness (Hultsjö et al., 2019). It should also be involved in the development of interpersonal relationships to gain cultural awareness skills (Quickfall, 2014). Liang et al. (2019) emphasized that cultural competence education should be integrated into nursing courses to improve nursing students' perceptions and skills regarding cultural care competence. Similarly, Halabi and de Beer (2018) revealed that half of the students preferred to receive transcultural nursing education related to working with people from different cultures. Therefore, identifying which topics should be covered by transcultural nursing education is very important in training culturally competent nursing students. Additionally, addressing the effects of transcultural nursing education on nursing students' cultural awareness, knowledge and attitudes can contribute to future transcultural nursing education activities and the creation of training content.

This study aimed to synthesize the findings of studies evaluating educational programs providing transcultural nursing education in the curricula.

2. Methods

This study was conducted as a systematic literature review. The authors followed the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) recommendations and the Centre for Review and Dissemination (CRD) (CRD, 2009; Moher et al., 2009; Tufanaru et al., 2017).

2.1. Literature search strategy

First, three researchers from the study group (VT, VO, SF) examined the PubMed, Science Direct, APA PsycArticles®, OVID, EBSCO, and Web of Science databases using the same keywords on the same date. Given the rapid increase in nursing research about transcultural nursing education, the search strategy was limited to articles published between 2010 and 2020 using Boolean combinations of the following keywords: "Transcultural Nursing", "Education", "Curriculum", "Course", "Effectiveness", "Cultural competence", "Knowledge", "Skills", "Attitude", and "Nursing Students" (Table 1).

To conduct a detailed search, the authors also explored keywords including relevant Medical Subject Headings (MeSH) terms, such as Transcultural Nursing, Education, Curriculum, Cultural Competence, Knowledge, Attitude, and Nursing Students.

2.2. Study selection

According to PRISMA recommendations (Moher et al., 2009), research studies were identified using database searches and manual searches via review studies' reference lists (Vassar et al., 2016). Duplicated records were deleted, and the remaining records were alphabetically listed by the first author's surname. The final list of 20 articles was shared with all "Better & Effective Nursing Education For Improving Transcultural Nursing Skills (BENEFITS)" project team members for eligibility assessment, including clear instructions for the inclusion/exclusion criteria. BENEFITS project team members agreed to exclude nine articles. The final list of 11 articles included eligible material to complete this review.

2.3. Inclusion/exclusion criteria

Only studies published in peer-reviewed journals in English were included in this systematic review. To be included, studies had to focus on interventions to improve transcultural nursing undergraduate education. In terms of design, only randomized control studies or quasi-experimental studies were included (Table 2).

2.4. Eligibility criteria

The review was completed first by the titles of the studies, then by abstracts, and finally by full texts by a pair of reviewers. In case of doubt regarding eligibility, the article was included. A minimum level of agreement between reviewers was set at 95%. In case of disagreement, the principal investigators (BT and AY) contacted the reviewers to resolve the differences. Papers were then sent to the same reviewers to double check the abstracts. Finally, specifying the exclusion rationale, a preliminary list identifying the selected records was obtained (Fig. 1).

Table 1
Example of the first search strategy in Web of Science.

- Key Words: "Transcultural Nursing", AND "Education", OR "Curriculum", OR "Course", "Effectiveness", AND "Cultural Competence", OR "Knowledge", OR "Skills", OR "Attitude", AND "Nursing Students"
- "Transcultural Nursing" and "Education"
- "Transcultural Nursing" and "Curriculum"
- "Transcultural Nursing" and "Course" and "Effectiveness"
- "Transcultural Nursing" and "Cultural Competence"
- "Transcultural Nursing" and "Knowledge" and "Skills" and "Attitude"
- "Transcultural Nursing" and "Nursing Students"
- Databases: All Databases
- Document Types: Research Articles
- Time Span: Custom year range 2010–2020
- Language: English
- Filter Results by: Open Access, Free Full Text from Publisher, Free Published Repository

Table 2
Inclusion and exclusion criteria using the PICOS format.

Criteria	Inclusion criteria	Exclusion criteria
Population	Nursing students	Samples consisting of students of other healthcare professions
Interventions	Education, curriculum interventions, course, short-term intensive education	Non-educational interventions
Comparators	Standard practice, alternative interventions, new method course, new curriculum education	Evaluating the impact of a lecture in a course or a presentation at a scientific event
Outcomes	Addressing nursing students' outcomes (e.g., overall or subdomain of cultural competence, confidence of transcultural nursing skills competence) or nursing students' experiences on patients' care	Not relevant to the cultural competence, confidence of transcultural nursing skills competence
Study design and publication type	Randomized controlled trials, non-randomized controlled trials, quasi-experimental studies, before and after comparison studies, mixed methods	Only descriptive studies, qualitative studies, case reports, reviews or meta-analyses
Publication years	2010–2020	Other years (prior to 2010)
Language	English	Other languages

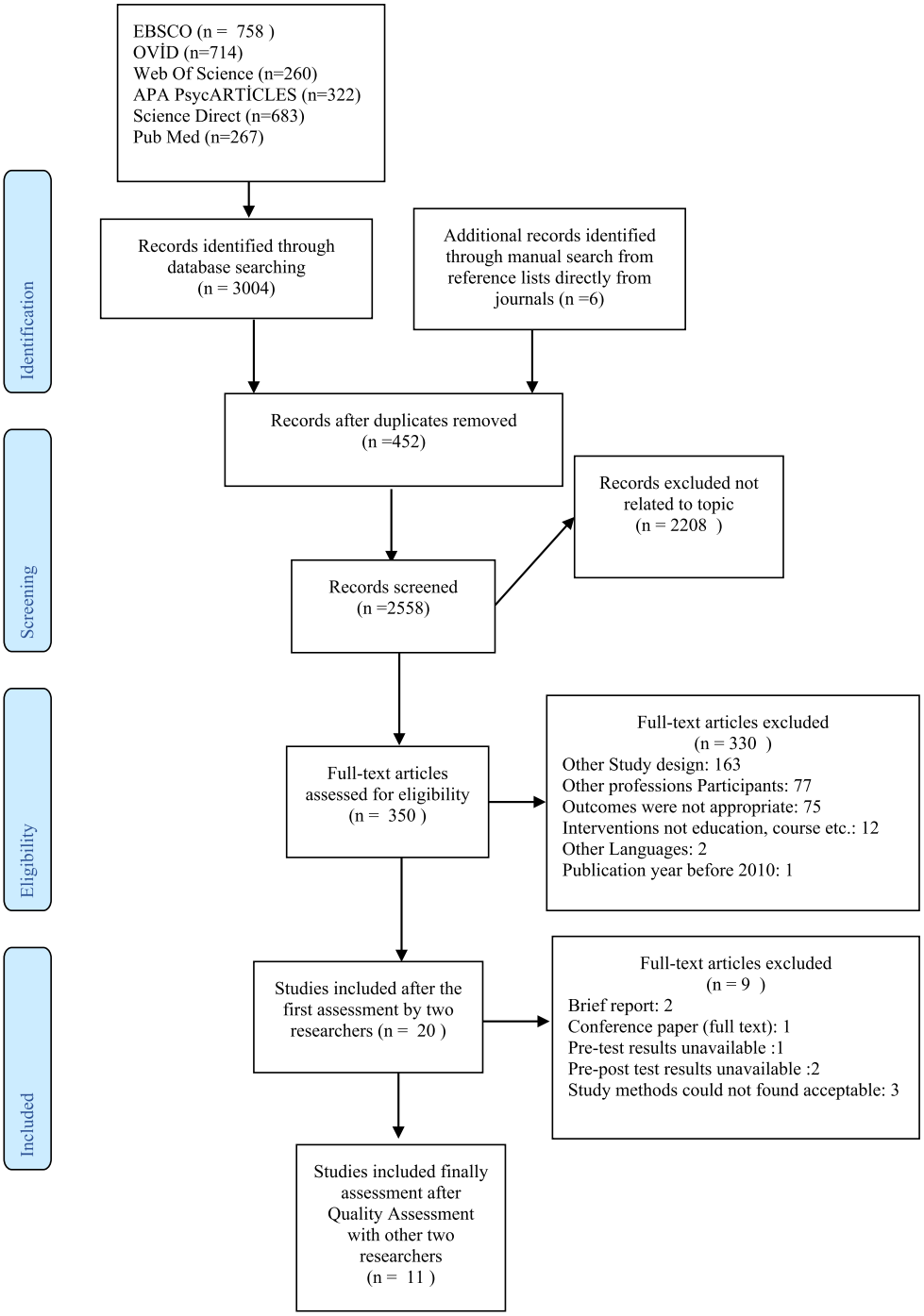

Fig. 1. Study follow diagram.

2.5. Data extraction

A matrix was created to collect relevant data from individual papers, and it was sent to reviewers to complete. The responsible researchers verified the extracted data and subsequent analysis and resolved all inconsistencies.

2.6. Assessment of study quality and risk of bias

Two researchers (AY, BT) independently assessed the methodological quality of each study (Tufanaru et al., 2017). All disagreements concerning the quality of the studies were discussed, double checked, and decided upon by the principal investigators. Studies were included in the systematic review if a score of at least fifty percent was awarded to the critical appraisal, which was the predetermined cut-off point agreed upon by the research team (Popay et al., 2006; Porritt et al., 2014). Given the design of the articles included in this review and the details provided, the risk of bias assessment was not possible.

3. Results

This section will present the results of the analysis conducted to examine the eleven papers selected for this review.

3.1. Study selection

A total of 3010 articles were initially identified for screening by the research team. Then, 452 of them were excluded due to duplication. The titles and abstracts of 2558 documents were screened, and a total of 2208 articles were excluded from the review as a result of not fully complying with the inclusion criteria. After inspection of the full texts of 350 articles, 330 were considered irrelevant for the purpose of this research. At this point, many papers were discarded due to not complying entirely with the inclusion criteria. A total of twenty articles were selected, although discrepancies were observed within the team. After the resolution of conflicts, a final sample of eleven manuscripts was selected by consensus for this systematic review. Those retained were examined further (Fig. 1).

3.2. Methodological quality

Of the eleven studies selected for this review, six used a quasi-experimental design (Amerson, 2010; Jeffreys and Dogan, 2012; Grossman et al., 2012; Allen et al., 2013; Noble et al., 2014; Halter et al., 2015), and four used a mixed-methods approach (Richards and Doorenbos (2016)). Wolfe Kohlbry (2016); Muir-Cochrane et al. (2018), Liang et al. (2019)). Only one (Ozkara San, 2018) used a longitudinal design. No randomized controlled trials were identified in this search.

In all selected studies, there was a marked risk of selection bias due to the lack of a randomized selection procedure before assignment to intervention groups. Equally, no description regarding, for instance, blind group allocation (when applicable) was reported. All studies described data analysis procedures, and significance testing was reported. However, the study protocols were not always available for examination, which prevented further comparison.

3.3. Description of selected studies

Tables 3 and 4. provides an overview of the chosen articles for this review. The studies were conducted between 2010 and 2018 mainly in four countries: the United States (Amerson, 2010; Jeffreys and Dogan, 2012; Grossman et al., 2012; Halter et al., 2015; Richards and

Table 3
Selected studies' methodologies.

Author, year and country	Participants	Type of intervention	Follow up instruments
Allen et al. (2013) Australia	Baccalaureate nursing students n = 251 ($n_{pretest}$=33; $n_{posttest}$=33)	Quasi-experimental study	Transcultural Self-Efficacy Tool (TSET) Quick Discrimination Index (QDI)
Amerson (2010) USA	Baccalaureate nursing students n = 69 ($n_{pretest}$=60; $n_{posttest}$=60)	Quasi-experimental study	TSET
Grossman et al. (2012) USA & Norway	Nursing students in an American senior class (n = 48) and Norwegian seniors (n = 25)	Quasi-experimental study	TSET
Halter et al. (2015) USA	Baccalaureate nursing students (n = 260)	Quasi-experimental study	TSET
Jeffreys and Dogan (2012) USA	Associate degree nursing students – cross-sectional (n = 147) – longitudinal (n = 36)	Quasi-experimental study	TSET
Liang et al. (2019) Taiwan	Nursing students n = 48	Mixed-methods study	Self-perceived cultural care competence (SP-CCC) questionnaire (n = 48) And focus group interviews (n = 10)
Muir-Cochrane et al. (2018) Australia	Nursing students n = 43 (undergraduate and postgraduate)	Mixed-methods study	The Kiersma-Chen Empathy Scale Mental Health Nursing Clinical Confidence Scale, The Cultural Competence Questionnaire (theory of planned behavior–(TPB)–CCQ). focus group and interviews (n = 21)
Noble et al. (2014) Israel	First-year nursing students n = 146 intervention group (n = 58) and control group (n = 88)	Quasi-experimental study	Campinha-Bacote's Inventory for Assessing the Process of Cultural Competence Among Healthcare Professional–Revised IAPCC-R
Ozkara San (2018) USA	Nursing students N = 53 (n pretest= 53) (n posttest= 53)	Longitudinal study	TSET
Richards and Doorenbos (2016) USA	Various students of health education programs (nursing, medicine, health-related disciplines, pharmacy, rehabilitation science) Total: 18 ($n_{pretest}$=18) ($n_{posttest}$=18)	Mixed-methods study	The Intercultural Effectiveness Scale (**IES**) The Intercultural Sensitivity Scale (**ISS**)
Wolfe Kohlbry (2016) USA	Baccalaureate nursing students n = 121 ($\mathbf{n}_{pretrip}$ =161; $\mathbf{n}_{posttrip}$ =121)	Mixed-methods study	Inventory for Assessing the Process of Cultural Competence Among Healthcare Professionals-Student Version (IAPCC-SV) Cultural Self-Efficacy Scale (CSES)

Table 4
Educational content of the review studies about cultural nursing skills interventions.

Studies Author (year)	Cultural awareness	Cultural knowledge	Cultural skill	Cultural encounter	Cultural desire
Allen et al. (2013)	X	X	X	X	–
Amerson (2010)	X	X	X	–	–
Grossman et al. (2012)	X	–	X	–	–
Halter et al. (2015)	X	–	X	–	–
Jeffreys and Dogan (2012)	X	–	X	–	–
Liang et al. (2019)					
Muir-Cochrane et al. (2018)	–	–	–	–	–
Noble et al. (2014)	X	X	X	X	X
Ozkara San (2018)	X	X	X	X	X
Richards and Doorenbos (2016)	X	X	X	X	X
Wolfe Kohlbry P., (2016)	X	X	X	X	X

Doorenbos, 2016; Wolfe Kohlbry, 2016; Ozkara San, 2018), Australia (Allen et al., 2013; Muir-Cochrane et al., 2018), Israel (Noble et al., 2014), and Taiwan (Liang et al., 2019). Nevertheless, several of them focused on international experiences abroad (Amerson, 2010; Grossman et al., 2012; Richards and Dorenboos, 2016; Wolfe Kohlbry, 2016).

All interventions were conducted in the academic setting, although two of them also included hospital settings (Liang et al., 2019) and international local community experiences (Amerson, 2010). In all cases, participants were bachelor's-level undergraduate students, except for Muir-Cochrane et al. (2018), who also included postgraduate students. In total, 1305 students were considered in this review.

3.4. The cultural competence interventions

The proposed programs varied significantly in length (one day to one semester) and, correspondingly, total hours included in the diverse curricula.

The theoretical background of the manuscripts was clearly explained in all cases, except for one article (Grossman et al., 2012). Four studies used Jeffrey's "Cultural Competence and Confidence Model" as a guiding theoretical context (Amerson, 2010; Ozkara San, 2018; Jeffreys and Dogan, 2012, Halter et al., 2015). Wolfe Kohlbry (2016) focused on the "Campinha-Bacote's Model" and "The Process of Cultural Competence in the Delivery of Healthcare Services". Richards and Doorenbos (2016) used "Benett's Developmental Model of Intercultural Sensitivity (DMIS)" as well as "Deardorff's Process Model of Intercultural Competence (PMIC)" guide their research. Two studies chose to combine a "Social Constructivist Model of Health" with the "Theory of Transcultural Nursing" (Allen et al., 2013) or used the "Interpretative Pedagogy Theory", which mentions the "Theory of Planned Behavior" (Muir-Cochrane, 2018).

Noble et al. (2014) used "Campinha-Bacote's Model of Cultural Competence" in their quasi-experimental study. Most recently, the mixed-methods study by Liang et al. (2019) used two transcultural nursing seminal models in the design: the "Sunrise Model" (Leininger and McFarland) and "Campinha-Bacote's Process Model" on cultural competence.

A variety of teaching methods are described in the obtained manuscripts, including simulations (Grossman et al., 2012), standardized patient simulation (Ozkara San, 2018), and clinical simulation (Richards and Doorenbos, 2016).

More traditional instruction methods were proposed by Noble et al. (2014), who combined an introduction to the nursing course with lectures, discussion and students' presentations on the topic. Halter et al. (2015) were similarly conservative in their teaching approaches and interventions, including lectures with participation, reflective papers, cultural competence readings and journal clubs. Allen et al. (2013) used class debates and case scenarios to raise students' cultural competence. Tutorials and lectures were combined with practicums in their labs. A slightly more innovative program was observed in the study by Amerson et al. (2010), which used service-learning projects with not only local but also international communities to facilitate cultural immersion. Wolfe Kohlbry (2016) also used experiential learning through immersive international experiences in diverse communities. The triangulated methodology of this intervention examined changes in the components and level of cultural competence of their BSc students. A more comprehensive approach was taken in the recent study by Liang et al. (2019), which was based on the didactic teaching of the "Sunrise Model" combining interactive learning, such as role playing or specific scenarios, with reflective feedback across the program (Table 5).

3.5. The duration of the intervention programs

As highlighted earlier, great variability was observed in terms of the length of the proposed interventions to estimate changes in cultural competence. For instance, Allen et al. (2013) reported 72 h (h) in total activities distributed across an 8-week program comprising theatrical presentation teaching (1 h per week), tutorials (2 h per week) and labs (1 h per week). Although only a community health program was described, Amerson (2010) did not state the total duration of the program. Grossman et al.'s (2012) pilot study used two simulation scenarios per semester followed by 20-minute debriefing sessions with instructors. Jeffreys and Dogan (2012) provided a thorough description of the clinical nursing curriculum course of 30-week medical and surgical courses and four 7.5-week courses, including clinical rotations elapsed in between measures. Halter et al.'s (2015) three-year study emphasized student opportunities to participate in cultural interventions, conferences, international symposia and real-life scenarios as examples. Although examples of teaching learning interventions were provided in Halter et al.'s (2015) study for year one, the whole program and/or timing were not provided clearly. Ozkara San (2018) is one of the few examples where the educational intervention was clearly described in the paper. The simulation scenarios were embedded in a 15-week nursing course with culturally diverse SPs focusing on underrepresented patient populations. Richards and Doorenbos (2016) described a three-week course abroad (India) for health care students and its preparation as well as the exchange focusing on global awareness and intercultural competency. Muir-Cochrane et al. (2018) developed four virtual resources focusing on mental health that unfolded during the student's programs, but no specific information was provided about the duration of the journeys. Liang et al. (2019) developed an 18-week embedded course on cultural care in child and adolescent care. The study conducted by Noble et al. (2014) described the introduction to nursing course as a series of 14 classes with two academic hours per session. Wolfe Kohlbry (2016) focused on a service-learning program to evaluate students' development of cultural sensitivity, social justice, collaboration and problem solving, but no information could be located on the actual duration of this intervention (Table 5).

3.6. Instruments used to evaluate cultural competence

A total of six articles used the "Transcultural Self-Efficacy Tool

Table 5
Theoretical background, teaching methods, duration of the education and main findings/conclusions of the review studies.

Author, year and country	Theoretical background	Teaching methods	Duration of the education	Main findings/conclusions
Allen et al. (2013) Australia	Social constructivist model of health Theory of transcultural nursing	Class debate Discussion Case scenarios Lecture Tutorials Practicum laboratories	72 h in total of activities distributed across an 8-week program comprising theatrical presentation teaching (1 h per week), tutorials (2 h per week), and labs (1 h per week).	• Nursing students improved perceived confidence and knowledge skills. • Nursing education should include intercultural nursing and anti-racism and anti-discrimination.
Amerson (2010) USA	Jeffreys' Cultural Competence and Confidence (CCC) Model	Service-learning projects with local and international communities (cultural immersion)	Students were divided into seven clinical sections (groups of 6–11 students) of which one had a one-week placement in Guatemala	• All subscales of the TSET increased after service learning. • The international group scored lowest in all scores on the pretest, yet scored highest on the posttest. • The importance of cultural awareness in nursing education was emphasized.
Grossman et al. (2012) USA & Norway	Theoretical background unclear	Simulations	Two simulation scenarios per semester followed by 20 min of debriefing sessions	• Data showed significant differences, but not on the "Practical" subscale. • No statistically significant differences were found in the two cohorts. • There is a need for future studies focusing on learning strategies related to cultural awareness during simulation in undergraduate and graduate programs.
Halter et al. (2015) USA	Jeffreys' CCC model	Various teaching learning interventions and strategies (e.g., lecture, lecture with audience participation, written paper, reading literature from cultural journals)	Various durations for different teaching learning interventions and strategies per academic semester. (duration is not specified)	• No significant relationships between TSE and the demographics examined were found. • Significant findings were found by academic level and prior health care experience. • Students' perceptions of TSE can be modified when using pertinent educational interventions.
Jeffreys and Dogan (2012) USA	Jeffreys' CCC model	Teaching methods unclear	Nursing curriculum course, 30 weeks of medical and surgical courses, and four 7.5-week courses, including clinical rotations elapsed in between measures	• Higher scores were found in senior studets, except for the cognitive subscale. • All nurse educators should take appropriate steps to ensure the dissemination of quality cultural nursing education.
Liang et al. (2019) Taiwan	Sunrise Model (Leininger and McFarland) and Campinha-Bacote's process of cultural competence	Didactic teaching, the Sunrise Model, interactive learning (role play, presenting scenarios) and reflective feedback	Developed an 18-week embedded course on cultural care in child and adolescent care	• Students showed more positive perceptions of their CCC after completion of the ECC-CAC course. • Two main themes were identified: appreciation of the variety of learning activities and the stimulating nature of such an intervention. • Students valued the chance to obtain new cultural knowledge and share personal cultural experiences. • Embedding cultural competence education in nursing courses is essential to improving nursing students' perceptions of their cultural care competency.
Muir-Cochrane et al. (2018) Australia	Interpretive pedagogy theory Theory of planned behavior (not accurately specified)	Storytelling, case study-based learning, and interpretive pedagogy	(duration is not specified)	• Significant changes from pre- to posttests were observed in the domains of empathy, confidence, attitudes and intention (cultural competence).
Noble et al. (2014) Israel	Campinha-Bacote's Model of Cultural Competence	The introduction to nursing course: lectures, classroom discussion, student group presentations	A series of 14 classes of two academic hours per session	• Integrative learning strategies applied to students revealed significant increases in cultural competence scores. • Cultural competence teaching strategies were recommended to be disseminated in nursing education workshops, seminars, and conferences. • Future studies should explore the use of measurement tools developed for students and the theoretical and clinical application of cultural competence.
Ozkara San (2018) USA	Jeffreys CCC model	Clinical simulation (implemented for cultural competence education) Standardized patient simulation	The simulation scenarios were embedded in a 15-week nursing course with culturally diverse SPs focusing on underrepresented patient populations	• SET scores showed the largest changes in the cognitive dimension of learning, whereas the least affected dimension was the affective one.

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Table 5 (*continued*)

Author, year and country	Theoretical background	Teaching methods	Duration of the education	Main findings/conclusions
				• Specific intercorrelations between TSET subscales were identified, but they could not be used as predictors. • DSPS strategy offers a valuable guide for educators at all levels to foster cultural competence development.
Richards and Doorenbos (2016) USA	Benetťs developmental model of intercultural sensitivity (DMIS) Deardorffs process model of intercultural competence (PMIC)	Course on cultural experiences in the cities and clinical practices at hospital. *	Three-week course abroad (India) for health care students	• No statistically significant improvement for the ISS or IES scales were observed. • Students developed special awareness of their own cultural worldview, particularly an openness to their host country, as well as the use of skills to advance their intercultural competence.
Wolfe Kohlbry (2016) USA	Campinha-Bacote's model, The Process of Cultural Competence in the Delivery of Healthcare Services	Experiential learning through immersion experiences within diverse communities	Service-learning program (duration is not specified)	• Pre and posttests revealed statistically significant differences in times for two (knowledge and skill domains) out of the five constructs of cultural competence explored. • Important differences in the type of journey that students had completed for this assignment, with variations from one day to three weeks, and there was great variability in the countries visited.

(TSET)" to evaluate changes regarding cultural competence after their interventions (Amerson, 2010; Grossman et al., 2012; Halter et al., 2015; Jeffreys and Dogan, 2012; Ozkara San, 2018; Allen et al., 2013). In addition, Allen et al. (2013) employed the "Quick Discrimination Index (QDI)". The rest of the studies combined different instruments to evaluate change. Richards and Doorenbos (2016) focused on intercultural aspects, evaluating "effectiveness" using the "Intercultural Effectiveness Scale" and the "sensitivity" of their mixed-methods program with the help of the "Intercultural Sensitivity Scale". Noble et al. (2014) followed a consistent design approach and used "Campinha-Bacote's Inventory for Assessing the Process of Cultural Competence" to measure cultural knowledge, cultural skill, cultural desire and cultural encounters.

Wolfe Kohlbry (2016) used two questionnaires to evaluate cultural competence variation: "The Inventory of Assessing the Process of Cultural Competence among Healthcare Professionals" (in its student version) and "The Cultural Self-Efficacy Scale".

Finally, two studies used a combination of assessment tools and focus groups (FGs) to evaluate the perceived changes in this domain. Muir--Cochrane et al. (2018) used the "Kiersma-Chen Empathy Scale (REF)", the "Mental Health Nursing Clinical Confidence Scale", and "The Cultural Competence Questionnaire (theory of planned behavior–(TPB)–CCQ)" combined with FGs and interviews (n = 21). Liang et al. (2019) also combined focus group interviews (n = 10) with a questionnaire, the "Self-perceived Cultural Care Competence" (SP-CCC) instrument (Table 3).

3.7. *Effects of cultural competence interventions on students' programs*

Allen et al. (2013) combined theoretical and practical learning environments using different methods and audio-visual material to prompt discussion and debate. The lecturers hoped this approach would promote students' self-reflection regarding culturally and socially determined values and biases and in a more global context (Tables 4 and 5). With a predominantly female sample, statistical data on dependent variables and pre- and post-measures suggested significant differences. According to Allen et al. (2013), this confirmed that students had improved perceived confidence or self-efficacy and knowledge skills.

Amerson's (2010) study used a convenience sample of students participating in a community health nursing course after having completed a service-learning project within communities. Amerson (2010) reported significant increases for each subscale of the TSET. It was noted that the international group scored lowest in all scores on the pretest, yet scored highest on the posttest.

Grossman et al. (2012) showed statistically significant differences pre and posttest for each subscale as well as the total of all subscales (Table 5). Similarly, Norwegian data showed significant differences, but not on the "Practical" subscale. Despite some discrepancies in resulting (practical and total) scores, no statistically significant differences could be found in the two cohorts.

Also using the TSET, Jeffreys and Dogan (2012) employed a purposive cross-sectional sample of novice and fourth-semester nursing students in an American university. Data analysis showed that means were higher for the senior semesters, except for the Cognitive subscale. For Jeffreys and Dogan (2012), all students, independent of their year, benefited from formal education on cultural competence (Tables 3 and 5).

Halter et al. (2015) used the TSET and reported significant changes for overall self-efficacy as well as the cognitive, practical and affective subscales (as previously reported by the three previous studies). The authors did not find significant relationships between TSE and the demographics examined. They suggested that students' perceptions of TSE can be modified when using pertinent educational interventions (Table 5).

The final study using the TSET to evaluate changes in self-efficacy perceptions was conducted by Ozkara San (2018). In general, the learning objectives of the Diverse Standardized Patient Simulation (DSPS) strategy were achieved, and they demonstrated positive changes in the cognitive, practical and affective learning domains. In this case, SET scores showed the largest changes in the cognitive dimension of learning, whereas the least affected dimension was the affective one. Ozkara San (2018) also reported specific intercorrelations between TSET subscales, but they could not be used as predictors. The author emphasized that the DSPS strategy offers a valuable guide for educators at all levels to foster cultural competence development.

Richards and Doorenbos (2016) carefully designed program curricula comprising structured reflection journals, group sessions and relational abilities as well as specific sessions in consonance with the "Association of American Colleges & Universities (AACU)'s Intercultural Knowledge and Competence". The VALUE Rubric (2015) focuses on intercultural knowledge and skills development (Association of American Colleges & Universities, 2015) This mixed-methods study did not report statistically significant improvement for the ISS or IES scales used in the study (Table 3). The qualitative analysis of the students' work

provided evidence of students' developing special awareness of their own cultural worldview, particularly an openness to their host country, as well as the use of skills to advance their intercultural competence (Table 4).

Muir-Cochrane et al.'s (2018) mixed-methods study used several evaluation tools: "The Kiersma-Chen Empathy Scale Mental Health Nursing Clinical Confidence Scale", "The Cultural Competence Questionnaire (theory of planned behavior–(TPB)–CCQ)" as well as FGs and interviews. The authors indicated significant changes from pre- to posttests in the domains of empathy, confidence, attitudes and intention (cultural competence) (Table 4). The qualitative data from the FG interviews provided by the authors' emerging themes suggested specific changes from the starting point upon completion of the program. Students emphasized the quality and value of the materials and described changes in their empathy and attitudes towards culturally and linguistically different patients, with specific changes focusing on their cultural competence attitudes and empathy.

Liang et al. (2019) combined the "Self-Perceived Cultural Care Competence (SP-CCC) Questionnaire" in nursing students with FG interviews. Statistical analysis of the pre- and posttest revealed a significant improvement in most scores (Table 4). Liang et al. (2019) concluded that students showed more positive perceptions of their CCC after completion of the ECC-CAC course. Thematic content analysis of the FGs suggested two main themes: appreciation of the variety of learning activities proposed in the course and the stimulating nature of such an intervention. Students valued the chance to obtain new cultural knowledge and share personal cultural experiences.

The quasi-experimental study by Noble et al. (2014) evaluated the effectiveness of an educational intervention to increase first-year students' general cultural competence in two different schools of the same university (Table 3). Undergraduates who participated in the educational intervention course showed significantly increased scores compared to those students who were part of the control group, in which no significant increase could be identified (Table 5).

The article by Wolfe Kohlbry (2016) focused on the impact of an international immersion service-learning project on BSc nursing students' cultural competence. Pre and posttests revealed statistically significant differences in times for two (knowledge and skill domains) out of the five constructs of cultural competence explored. In measuring pre- and posttest means, both tools underlined growth in overall means for all constructs of cultural competence and cultural self-efficacy. Significant pre- and posttest means on the IAPCC-SV survey were demonstrated on the constructs of cultural knowledge and skill. Wolfe Kohlbry (2016) reported important differences in the type of journey that students had completed for this assignment, with variations from one day to three weeks, and there was great variability in the countries visited (including Latin American, Asian, and African destinations). Emerging themes from qualitative analyses were consistent with the statistical analyses of quantitative data, particularly for the cultural competency constructs identified in Campinha-Bacote's model (Tables 3 and 4).

When measuring tools before and after the trip, both surveys showed an increase in overall tools in all cultural competence and cultural self-efficacy structures (Table 4).

4. Discussion

The purpose of this systematic review was to examine and analyze studies assessing transcultural nursing education, primarily in bachelor's degree nursing study programs. It was found that interventions leading to the acquisition of cultural competences were integrated either in compulsory or in elective subjects according to these articles. The integration of nursing cultural care education in the category of elective subjects was insufficient. If the graduates did not select the subject during their studies, they would have a reduced opportunity to practice the knowledge and skills needed to provide culturally competent care.

A key difference was also identified regarding the duration and scope of the programs that focus on the acquisition of cultural competences. The results showed that a longer duration of the program provides more time for the integration of different teaching methods. The methods most frequently used in the examined studies include model situations, role playing or specific scenarios with reflective feedback (Liang et al., 2019; Allen et al., 2013; Ozkara San, 2018). A combination of the former allows for the training, development, and verification of cultural competences in practical care for children and adults. Richards and Doorenbos (2016) highlighted the contribution of a three-week course abroad for health care students. Such courses help to increase the awareness of cultural competences in clinical practice. Similarly, a contribution to increasing cultural competences through contact with people in international communities is described by Amerson (2010) and Wolfe Kohlbry (2016). We know that practice abroad is a challenge for students, but they will have wider knowledge and experience in real life in different cultural environments.

In our review, most authors used standardized tools for the evaluation of the effects of their educational interventions (Allen et al., 2013; Amerson, 2010; Grossman et al., 2012; Halter et al., 2015). In all cases, the students were tested before the start and after the end of the program. It can be noted that the studies using the TSET found changes in the individual items; however, the level of the achieved changes was different. The reason might involve the use of different teaching methods, different contents and different scopes of the educational interventions or may be linked to the individual characteristics of the students. That may also be why the tools were usually complemented by another standardized tool in a number of studies.

The authors of five studies made use of different standardized tools aimed at evaluating the attitudes, empathy, knowledge, skills and cultural desire (Liang et al., 2019; Muir-Cochrane et al., 2018; Wolfe Kohlbry, 2016; Noble et al., 2014; Richards and Doorenbos, 2016). The use of the previously mentioned tools enabled a more objective assessment of the changes achieved, which led to increased cultural competences in the students. Although the statistical analyses did not show any significant improvement in some cases, the qualitative analyses of the students' work demonstrated a change in their awareness of their own cultural worldview. Liang et al. (2019) stated that after passing the course, the students showed a significant improvement in most of the areas under observation, primarily knowledge, attitudes and skills. A similar result was obtained in the study by Noble et al. (2014). The study by Wolfe Kohlbry (2016) evaluating the effect of a sojourn in another country demonstrated a significant shift in individual constructs of cultural competence.

4.1. Study limitations

This review has some limitations. Only articles published in English were ultimately included. After careful examination of the selected articles for this review, the bias assessment was not applicable, as none of the selected studies used an experimental design. Most studies were mainly pre-post experiments or only post-test experiments with convenience samples, without using a control group, blinding or randomization. Indeed, the results of this review are based on the details reported in the studies included in this study. The training content, duration of the training, the characteristics of the participants, and some other details were not clear in the methods of some studies.

5. Conclusion

The papers examined underline the notion that it is key for nurses to be familiar with the different cultural habits and ways to care for patients in such circumstances. Limited studies have generally proven the effectiveness of transcultural nursing education provided to nursing students. Although the education content, training methods and training periods were not standardized, researchers generally evaluated the education program using the same or similar measurement tools. We

believe that transcultural nursing education programs should be standardized in terms of content, duration and basic teaching methods for nursing students from all cultures. More comprehensive, valid and reliable measurement tools should be developed to evaluate those programs. In addition, nursing students' cultural competencies should be explored by observational and/or experimental studies to evaluate nursing education regarding cultural care. To conclude, we believe that all nursing students should be given the opportunity to develop greater awareness of other cultures and ways to care for them. We consider that aspects such as communication, language, religion, social values and cultural norms should be further explored in the nursing curriculum to facilitate caring for patients and families of diverse origins.

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CRediT authorship contribution statement

Betül Tosun: Conceptualization, Methodology, Data curation, Writing - original draft preparation, Visualization, Investigation, Supervision, Writing - review & editing. **Ayla Yava:** Conceptualization, Methodology, Writing - original draft preparation, Visualization, Investigation, Supervision. **Ezgi Dirgar:** Conceptualization, Methodology, data curation, Writing - original draft preparation. **Eda Başustaoğlu Şahin:** Conceptualization, Methodology, Data curation, Writing - original draft preparation, Visualization, Investigation. **Emel Bahadır Yılmaz:** Conceptualization, Methodology, Data curation, Writing - original draft preparation, Software, Writing - original draft, Visualization, Investigation. **Katalin Papp:** Conceptualization, Methodology, Data curation, Writing - original draft preparation, Visualization, Investigation, Supervision. **Valérie Tóthova:** Conceptualization, Methodology, Software, Data curation, Writing - original draft preparation, Visualization, Investigation, Supervision. **Věra Hellerova:** Conceptualization, Methodology, Data curation, Writing - original draft preparation, Visualization, Investigation. **Mirko Prosen:** Conceptualization, Methodology, Writing - original draft preparation, Supervision, Writing - review & editing. **Sabina Licen:** Conceptualization, Methodology, Writing - original draft preparation, Supervision, Writing - review & editing. **Igor Karnjus:** Conceptualization, Methodology, Writing - original draft preparation. **M. Dolors Bernabeu Tamayo:** Conceptualization, Methodology, Writing - original draft preparation, Supervision, Writing - review & editing. **Juan Manuel Leyva-Moral:** Conceptualization, Methodology, Writing - original draft preparation, Supervision, Writing - review & editing. **Ann Claeys:** Conceptualization, Data curation, Methodology, Writing - original draft preparation. **Sandra Tricas-Sauras:** Conceptualization, Methodology, Writing - original draft preparation, Supervision, Writing - review & editing.

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