Title
Culturally and linguistically diverse healthcare students' experiences of learning in a clinical environment: a systematic review of qualitative studies

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What is already known about the topic?

- Globalization has enhanced the internationalization of labor and education.
- Cultural and linguistic difficulties cause problems when clinical practice is included in healthcare education.
- When the context is not culturally or linguistically diverse, pedagogical atmosphere and supervision are often considered to be important in clinical education.
- In healthcare education, cultural and linguistic issues of clinical practice are little researched.

What this paper adds

- Integration into a clinical environment requires time, education and preparation of culturally and linguistically diverse healthcare students and their mentors.
- Prior education in communication and culture improved culturally and linguistically diverse students' experiences in learning during clinical practice.
- Students staying in a foreign country for longer periods of time experienced more discrimination and social isolation than students staying for shorter periods.
- A positive clinical environment helped culturally and linguistically diverse students to overcome language and cultural barriers and resulted in a positive learning experience.

Abstract

Context

Learning in the clinical environment of healthcare students plays a significant part in higher education. The greatest challenges for culturally and linguistically diverse healthcare students were found in clinical placements, where differences in language and culture have been shown to cause learning obstacles for students. There has been no systematic review conducted to examine culturally and linguistically diverse healthcare students' experiences of their learning in the clinical environment.

Objective

This systematic review aims to identify culturally and linguistically diverse healthcare students' experiences of learning in a clinical environment.

Methods

The search strategy followed the guidelines of the Centre of Reviews and Dissemination. The original studies were identified from seven databases (CINAHL, Medline Ovid, Scopus, Web of Science, Academic Search Premiere, Eric and Cochrane Library) for the period 2000 to 2014. Two researchers selected studies based on titles, abstracts and full texts using inclusion criteria and assessed the quality of studies independently. Twelve original studies were chosen for the review.

Results

The culturally and linguistically diverse healthcare students' learning experiences were divided into three influential aspects of learning in a clinical environment: experiences with implementation processes and provision; experiences with peers and mentors; and experiences with university support and instructions. The main findings indicate that culturally and linguistically diverse healthcare students embarking on clinical placements initially find integration stressful. Implementing the process of learning in a clinical environment requires additional time, well prepared pedagogical orientation, prior cultural and language education, and support for students

and clinical staff. Barriers to learning by culturally and linguistically diverse healthcare students were not being recognized and individuals were not considered motivated; learners experienced the strain of being different, and faced language difficulties. Clinical staff attitudes influenced students' clinical learning experiences and outcomes.

Conclusion

Additional education in culture and language for students and clinical staff is considered essential to improve the clinical learning experiences of culturally and linguistically diverse healthcare students. Further studies of culturally and linguistically diverse healthcare students' learning experiences in the clinical environment need to be conducted in order to examine influential aspects on the clinical learning found in the review.

Keywords: cultural and linguistic diversity; learning in clinical environment; midwifery students; nursing students; physiotherapy students; systematic review; thematic analysis.

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Introduction

Higher education students of healthcare exhibit increasing cultural and linguistic diversity as the labor market expands and knowledge and cultural experiences are shared more widely (Parker and McMillan 2007). Internationalization is part of the globalization process, with increasing mobility worldwide (Parker and McMillan 2007). It has been estimated that, in 2010, 215 million people were living outside their birth country (Bhopal 2014). Thus, internationalization within higher education and the labor marked has been a goal of many western governments (Ministry of Education 2009).

A culturally and linguistically diverse learning environment in healthcare offers unique insights and a variety of approaches to learning (Brown 2008), while bringing challenges associated with cross-cultural differences and tensions (Parker and McMillan 2007). The greatest challenges in international healthcare education have been the cultural and linguistic difficulties associated with clinical education (Crawford and Candlin 2013; Edgecombe et al. 2013; Pitkäjärvi et al.2013).

In a study exploring the clinical learning experience of nursing students in nine western European countries (Warne et al. 2010) it was shown that pedagogical atmosphere and supervisory relationship had a significant role in students' experiences of clinical learning. In a study of international students' experiences in clinical placements (Pitkäjärvi et al. 2013), staff members' attitudes have been shown to influence students' experiences both positively when they are welcoming or negatively when they are discouraging.

Cultural and linguistic diversity is closely linked to the concept of internationalization. In this study, culturally and linguistically diverse students include those whose first language and culture is not of the country they study in, in other words they differ from the mainstream culture and language (Robinson and Clardy 2011) and can be further defined as a minority group (Akombo 2013; Terry and Irving 2010). Culturally and linguistically diverse students can, additionally, be identified as international students coming to study a healthcare field in a foreign country. The focus of this systematic review was nursing, midwifery and physical therapy undergraduate students.

Learning in a clinical environment involves application, development and integration of theoretical knowledge, skills, and professional activities by a healthcare undergraduate student with the involvement of a mentor and clinical staff and nurse teachers from universities (Bjork et al. 2014; Newton et al. 2010). The clinical environment in this study is regarded as a learning environment for healthcare education, involving clinical education in clinical settings where a student is taught practical skills relating to real working situations (FINHEEC 2012a; FINHEEC 2012b).

Clinical learning is a key part of healthcare education; however, the aspects that affect culturally and linguistically diverse students tend not to have been considered systematically. A broader perspective is required. The aim of this study was to identify culturally and linguistically diverse healthcare students' experiences of learning in a clinical environment.

The research question associated with our systematic review was:

- What kind of learning experiences do culturally and linguistically diverse healthcare students encounter in a clinical environment?

Methods

Information sources and search strategy

The guidelines of the Centre for Reviews and Dissemination (CRD 2009) were used to ensure that the study was robust. Research was identified from seven different databases: CINAHL (EBSCO), Medline Ovid, Scopus, Web of Science (ISI), Academic Search Premiere (EBSCO), Eric (ProQuest) and Cochrane Library (Table 1). A search strategy, terms and limitations were selected with the aid of an information specialist. The keywords chosen for the search were first divided into three main groups and further combined together. Learning in clinical environment; nursing, midwifery and/ or physical therapy students, and cultural and linguistic diversity were combined with other term synonyms of these main groups (Table 2). Available subject terms were used when conducting the search. Studies chosen for review included original peer-reviewed qualitative studies published during the period 2000-2014. Grey literature was not surveyed. In total, we identified 156 original studies after duplicates were removed. The search strategy was documented and saved in every database; search results were stored in the online research management tool RefWorks.

The screening process was conducted by two researchers independently and eventually discussed and agreed in collaboration (Shea et al. 2007). The original studies were screened by title (n=156), abstract (n=33) and full-text (n=11), and were included in the review if they met the inclusion criteria (Figure 1). The inclusion criteria, adopted from the PICOS review protocol (CRD 2009), were assessed on the basis of participants, phenomena of interest, context and types of studies (Table 3). In addition, the references in the original studies selected for the inclusion were searched manually (CRD 2009). Four more studies were identified from references and included in the final group of full-text original studies that were examined, although three were then excluded. Finally, the search strategy was updated a little later as a result of examining the original approach and one additional paper was identified.

Methodological quality assessment

The methodological quality of the systematic review process was assessed using the AMSTAR tool in order to ensure that it was robust (Shea et al. 2007). All of the eleven components of the AMSTAR measuring tool were positive in the review. The original studies (n=13) chosen for the review were screened using critical appraisal (QUARI, developed by the Joanna Briggs Institute, 2014) by two researchers individually. The Qualitative Assessment Research Instrument (QUARI) is defined by ten evaluation criteria (JBI 2014). Studies achieving five or fewer quality criteria were excluded from the review in order to sustain best quality in evidence chosen for systematic review analysis (CRD 2009). The Miguel et al. (2006) study was excluded because it received a score of five in the Qualitative Assessment Research Instrument (QUARI) (JBI 2014) (Table 4). Finally, 12 studies were considered suitable for use in our analysis.

Data extraction and synthesis

The "enhancing transparency in reporting the synthesis of qualitative research" (ENTREQ) framework (Tong et al. 2012) was used as a guide in choosing the method of thematic synthesis for the selected studies. The thematic data synthesis within the systematic review summarizes key issues relevant to the review in terms of the context of each study. A thematic synthesis was chosen according to the aim of the review (Korhonen et al. 2013), which was to focus on the experiences of students. Thematic synthesis is a method with a philosophical position of critical realism, which examines how the researched participants make meaning of their experiences. (Braun and Clarke 2006; Tong et al. 2012). The thematic synthesis was conducted using an inductive qualitative approach (Elo and Kyngäs 2008); we selected all of the results of every study from the 'Results' / 'Findings' sections as well as looking at the abstract, discussion and conclusion (Thomas and Harden 2008). We used the three stage analysis process presented by Thomas and Harden (2008), which involved line by line coding of text from the primary studies, organizing free codes (n= 315) into descriptive themes (n= 74) and developing analytical themes (n=19). In addition, analytical

themes were organized into categories (n=7) for reasons of transparency and interpretation. The categories were divided into three different aspects of culturally and linguistically diverse students' experiences of learning in a clinical environment because there was a large amount of data presented in the qualitative studies. The three aspects were: (1) culturally and linguistically diverse students' experiences with implementing learning and provisions for learning in the clinical environment; (2) experiences with peers and mentors associated with learning in a clinical environment; and (3) experiences with university support and instructions pertaining to learning in a clinical environment (Table 5).

The coding was conducted by one researcher. The development of descriptive and analytical themes was done collaboratively by two researchers who looked at similarities and differences in grouping and naming of themes individually and together (Thomas and Harden 2008). Codes and descriptive themes were kept as close as possible to the primary source, trying not to change the meaning of the data. Analytical themes and the main categories offered a new interpretation, which went beyond the primary studies (Tong et al. 2012). There was no conflict of interest between researchers during different stages of the systematic review process.

Results

The studies chosen for inclusion were conducted in Australia (Jeong et al. 2011; Grant and McKenna 2003; Miguel and Rogan 2009; Rogan et al. 2006; Rogan and San Miguel 2013; Seibold et al. 2007), Canada (Sedgwick et al. 2014), Finland (Mattila et al. 2010; Pitkäjärvi et al. 2012), Israel (Arieli 2013), Norway (Myhre 2011), and the United Kingdom in cooperation with Sweden (Green et al. 2008). Most of the original studies were conducted in Australia. Of the 12 original studies, one group originated from the same authors in a single research area but involved different sampling techniques, participants and methodologies (Miguel and Rogan 2009; Rogan et al. 2006;

Rogan and San Miguel 2013). The total number of culturally and linguistically diverse healthcare students in each study varied between 3 students and 266 students (the total number of all students in the reviewed studies n=428). The students were African, Arabic, Asian, Australian, Black American, East Indian, European, and Latino in origin (Table 4). The students' learning experiences were divided into three influential aspects: experiences with implementing learning and provisions for learning in the clinical environment; experiences with peers and mentors associated with learning in a clinical environment; and experiences with university support and instructions pertaining to learning in a clinical environment (Table 5).

Culturally and linguistically diverse students' experiences with implementing learning and provisions for learning in a clinical environment

Culturally and linguistically diverse students' experiences of learning in a clinical environment were covered by three main categories. The three categories included implementing clinical education for culturally and linguistically diverse healthcare students; self-determining aspects that influence learning by culturally and linguistically diverse students in clinical placements; and issues that obstruct the students' learning in clinical placements.

Implementing clinical education for culturally and linguistically diverse healthcare students

Integrating culturally and linguistically diverse healthcare students involves adaptation to the cultural context at the beginning of clinical placement; this is perceived as being challenging and requires targeted support. Adjusting and growing into a new cultural environment of clinical practice was perceived to be a rewarding learning experience, and constructive clinical orientation and reflection enhanced students' learning during clinical placements. Adapting to cultural differences and to the new clinical placement were stressful, initially evoking feelings of helplessness, uncertainty and fear (Grant and McKenna 2003; Green et al. 2008; Miguel and Rogan

2009). Students also expressed feelings of isolation at the beginning of clinical placements (Sedgwick et al. 2014). They were more critical of the cultural differences within healthcare at the beginning of their placements (Grant and McKenna 2003; Green et al.2008) and needed time to adjust to the cultural diversity; at the same time students feared compromising their own cultural values (Arieli 2013; Rogan and Miguel 2006).

Despite having to go through a challenging process of adaptation, students saw adjustment and growth in a new cultural environment of clinical practice as a rewarding learning experience. Students built their own awareness of cultural diversity by comparing and recognizing the differences (Grant and McKenna 2003; Green et al. 2008; Myhre 2011) and at the same time they developed a growing a tolerance towards the other culture and gained additional insights while having positive experiences during their clinical placements (Grant and McKenna 2003; Green et al. 2008). The growth of intercultural sensitivity helped students to increase their empathy and their understanding of holistic care (Green et al. 2008; Myhre 2011).

Furthermore, constructive clinical orientation and reflection enhanced students' learning in their clinical placements. Structured and supportive orientation for entry into a new clinical practice reduced challenges, increased students' confidence about the clinical placement's expectations, and prepared students for clinical routines (Jeong et al. 2011; Mattila et al. 2010). Understanding the routines and organizational structure facilitated successful integration into the clinical environment (Grant and McKenna 2003). Students emphasized the need for additional time, and longer periods of orientation and reflection within clinical placements (Miguel and Rogan 2009; Myhre 2011). Positive reflection time with continuing positive feedback from clinical staff, clinical facilitators from universities and other students helped students to share, reduced anxieties, connected theory with practice, determined learning needs and gave them confidence in clinical placements (Grant

and McKenna 2003; Green et al. 2008; Mattila et al. 2010; Miguel and Rogan 2009; Myhre 2011; Rogan and Miguel 2006).

Self-determining aspects that influence learning by culturally and linguistically diverse students in clinical placements

Culturally and linguistically diverse students in clinical placements can influence their own situation in a number of ways, these were covered by two of our analytical themes: independent learning and building coping skills helped students to overcome cultural and communication challenges; and communication management was considered important and helpful for the students' learning. Independent learning skills were considered to involve taking the initiative and demonstrating determination in clinical practice (Jeong et al. 2011; Grant and McKenna 2003; Rogan and Miguel 2006), knowing how to integrate new into existing knowledge (Grant and McKenna 2003; Green et al. 2008), and building connections with patients and improving communication skills while learning from them (Jeong et al. 2011; Miguel and Rogan 2009). Students stated that staying true to their own values kept them motivated to learn (Grant and McKenna 2003). Coping skills were enhanced by dealing with problems and being persistent when facing the challenges experienced in clinical placements (Grant and McKenna 2003; Green et al. 2008; Mattila et al. 2010). Culturally and linguistically diverse students also noted that difficulties faced in clinical placements were often consciously minimized (Arieli 2013; Grant and McKenna 2003).

The second aspect associated with self-determination was communication management. Language competence was seen to be important for culturally and linguistically diverse students (Jeong et al. 2011; Seibold et al. 2007) and made them feel part of the team (Myhre 2011). Students also

developed their nonverbal communication skills, which helped them to overcome language barriers during learning in the clinical environment (Myhre 2011).

Aspects obstructing learning of culturally and linguistically diverse students in clinical placements

Barriers to learning were covered by three analytical themes: limitations to learning when the individual is not recognized and trusted as a motivated learner; the strain of being different and an associated lack of dignity; and language difficulties. Problems were exacerbated when students were not acknowledged as being motivated learners (Mattila et al. 2010) and when they had to prove their competence persistently and attain higher standards because staff, patients and domestic students discriminated against them and mistrusted them (Jeong et al. 2011; Mattila et al. 2010; Sedgwick et al. 2014). Staff distrust in international students restricted the students' learning opportunities with respect to observation and basic skill performance (Jeong et al. 2011; Green et al. 2008; Mattila et al. 2010; Pitkäjärvi et al. 2012).

The strain of being different and a lack of dignity were described as experiences that made multicultural students feel vulnerable (Grant and McKenna 2003; Green et al. 2008). Facing discrimination caused social and professional isolation, and was exemplified by offensive comments by staff, rejection, humiliation, bullying and ethnic discrimination (Jeong et al. 2011; Mattila et al. 2010; Miguel and Rogan 2009; Sedgwick et al. 2014; Pitkäjärvi et al. 2012). Discrimination caused feelings of frustration and intimidation, and adversely affected students' learning in clinical placements (Arieli 2013; Jeong et al. 2011; Mattila et al. 2010).

Language difficulties were seen as a disadvantage in learning that limited learning opportunities (Jeong et al. 2011; Green et al. 2008; Miguel and Rogan 2009; Rogan and Miguel 2006) and were strengthened when the reception and atmosphere experienced during clinical placements were

negative (Pitkäjärvi et al. 2012). Furthermore, students experienced feelings of frustration, loneliness, isolation, confusion, embarrassment and panic when having to deal with language barriers and not being able to understand the language used (Arieli 2013; Jeong et al. 2011; Rogan and Miguel 2006).

Culturally and linguistically diverse students' experiences with peers and mentors when learning in a clinical environment

Culturally and linguistically diverse students' experiences with peers and mentors were covered by two main categories. The two main categories included social aspects that influence culturally and linguistically diverse students' clinical learning; and mentorship aspects that influence learning by culturally and linguistically diverse students in clinical placements.

Social aspects influencing culturally and linguistically diverse students' clinical learning

Social aspects influencing culturally and linguistically diverse students' clinical learning are described by two analytical themes: supportive relationships with peers helped students to have positive experiences; and discriminative relationships with domestic peers caused feelings of isolation. The supportive relationships with domestic students brought rich reciprocal international experiences and helped students to relax and learn (Arieli 2013; Jeong et al. 2011; Sedgwick et al. 2014). Peer support by other international students also helped culturally and linguistically diverse students to share their own experiences and experience feelings of belonging (Rogan and Miguel 2006; Sedgwick et al. 2014). Homesickness and loneliness were compensated for by building a social network and receiving support within the host country (Green et al. 2008). The opposite experience occurred when relationships with peers included discrimination (Arieli 2013; Jeong et al. 2011; Rogan and Miguel 2006; Sedgwick et al. 2014). Feelings of isolation and negative

experiences were strengthened by loss of social contacts from students' home countries (Green et al. 2008).

Aspects of mentoring influencing learning by culturally and linguistically diverse students in clinical placements

Mentoring was related to four analytical themes: a positive clinical learning environment helped students to gain learning experiences by minimizing language and cultural barriers; students' active involvement in clinical learning created feelings of belonging and a reciprocal learning experience; learning by culturally and linguistically diverse students was hindered by negative aspects of conflicting mentoring in clinical placements; and mentoring was improved by providing support for clinical staff to supervise these students. A positive clinical environment helped students to learn and minimized language and cultural barriers. This was apparent when staff exhibited positive attitudes and motivation to interact with culturally and linguistically diverse students, thus reducing language barriers (Mattila et al. 2010; Pitkäjärvi et al. 2012).

Furthermore, welcoming, appreciative and supportive staff helped students to adapt to their clinical placement and become more confident (Grant and McKenna 2003; Miguel and Rogan 2009; Myhre 2011; Seibold et al. 2007; Sedgwick et al. 2014). An accepting and nonjudgmental clinical learning environment raised students' motivation and enhanced their professional growth (Myhre 2011; Rogan and Miguel 2006). In addition, appreciation of students in the clinical placement provided motivation and helped them to overcome their difficulties (Grant and McKenna 2003; Mattila et al. 2010). Students further revealed that positive experiences in their clinical placement minimized ethnic stereotyping of students (Arieli 2013) and that positive attitudes of staff influenced students' learning experiences (Grant and McKenna 2003; Miguel and Rogan 2009; Pitkäjärvi et al. 2012).

Students' active involvement in clinical learning created feelings of belonging, and generated a reciprocal learning experience. It was enhanced by a welcoming atmosphere in clinical placements (Jeong et al. 2011; Pitkäjärvi et al. 2012), by learners being given the opportunity to take part in decision making about patient care and being part of the team as their responsibilities grew (Mattila et al. 2010; Miguel and Rogan 2009; Rogan and Miguel 2006), and by having their own assigned patients, which helped students to gain self-confidence and pride in their learning (Grant and McKenna 2003; Myhre 2011; Rogan and Miguel 2006). Independent work increased students' self-confidence (Mattila et al. 2010) and encouraged them to take responsibility when they were trusted by clinical staff (Myhre 2011).

Barriers to learning associated with mentoring in clinical placements were caused by neglecting students in clinical placements thus creating social isolation (Jeong et al. 2011; Mattila et al. 2010; Rogan and Miguel 2006; Seibold et al. 2007), and excluding students from decision making , which made students feel they were not valued (Miguel and Rogan 2009). Clinical staff's high expectations with respect to communication and performance caused pressure, resentment and adversely affected learning (Grant and McKenna 2003; Mattila et al. 2010; Miguel and Rogan 2009; Rogan and Miguel 2006). Learning was prevented by aggressive, judgmental, ignorant, non-caring and critical mentors (Jeong et al. 2011; Mattila et al. 2010; Miguel and Rogan 2009), and unwelcoming staff made students feel uncomfortable (Sedgwick et al. 2014). The students shared experiences of rejection and anger from clinical staff and patients because of the students' language limitations (Arieli 2013; Jeong et al. 2011; Mattila et al. 2010; Pitkäjärvi et al. 2012). Students reported that staff attitudes contributed to patients' reactions towards culturally and linguistically diverse students (Mattila et al. 2010; Pitkäjärvi et al. 2012). In addition, being treated differently to domestic students adversely affected international students (Sedgwick et al. 2014). Students also

observed that clinical staff needed extra time, patience and support when teaching in a foreign language (Jeong et al. 2011; Rogan and Miguel 2006; Sedgwick et al. 2014).

Good mentoring was possible when staff were provided with additional time and support to allow them the resources to educate culturally and linguistically diverse students (Jeong et al. 2011; Pitkäjärvi et al. 2012), when there was consistency in mentorship and contradictory demands were avoided (Jeong et al. 2011; Mattila et al. 2010; Miguel and Rogan 2009), and when clinical staff were educated about how to teach and supervise culturally and linguistically diverse students in clinical placements (Jeong et al. 2011). Inexperienced and uneducated mentors did not have the necessary skills to supervise culturally and linguistically diverse students, which caused uncertainty in the students (Jeong et al. 2011).

Culturally and linguistically diverse students' experiences of university support and instructions about learning in a clinical environment

Culturally and linguistically diverse students' experiences of university support and instructions about learning in a clinical environment were covered by two main categories. The two categories were the influence of universities on learning in clinical placements; and opportunities within cultural and linguistically diverse healthcare degree programs.

Influence of universities on culturally and linguistically diverse students' learning in clinical placements

The influence of universities was covered by three analytical themes: prior education in communication and culture improved clinical placement success; cooperation between clinical facilitators employed by universities and clinical mentors was considered important by clinical staff and appreciated by students; and challenges during clinical placements caused students additional

stress and sometimes even resulted in them failing in their studies. Prior education in communication and culture gave culturally and linguistically diverse students a sense of knowing what to expect and built their confidence (Miguel and Rogan 2009; Rogan and Miguel 2006; Rogan and San Miguel 2013; Seibold 2007), improved clinical vocabulary and bedside manners (Miguel and Rogan 2009; Rogan and Miguel 2006) enhanced assertiveness and reduced anxieties because this ensured that students knew how to communicate with staff and patients in diverse situations (Miguel and Rogan 2009; Rogan and Miguel 2006; Rogan and San Miguel 2013) and gave the students confidence and helped them to connect with patients (Miguel and Rogan 2009; Rogan and Miguel 2006). Finally, prior education in communication and culture improved students' performance and learning outcomes in clinical placements (Miguel and Rogan 2009; Pitkäjärvi et al. 2012; Rogan and Miguel 2006).

Cooperation between clinical facilitators employed by universities and clinical mentors was considered important, but was frequently unclear to clinical staff (Mattila et al. 2010). Clinical facilitators coming in from universities offer support by providing feedback, visiting and answering questions; this gave students confidence and independence and was much appreciated (Rogan and Miguel 2006; Seibold et al. 2007). Clinical placement challenges experienced by students inflicted additional stress, sometimes even leading to a change of profession or failing studies (Mattila et al. 2010). Difficulties in finding clinical placements for culturally and linguistically diverse students caused anxiety, fear and confusion (Pitkäjärvi et al. 2012).

Opportunities in culturally and linguistically diverse healthcare degree programs

Such opportunities were covered by two analytical themes: culturally and linguistically diverse education benefited professional growth; and culturally and linguistically diverse education benefited personal growth. Despite many challenges, culturally and linguistically diverse education

was shown to benefit students' professional growth by widening their opportunities for professional development (Grant and McKenna 2003; Green et al. 2008; Seibold et al. 2007) and increasing their career prospects (Green et al. 2008). In addition, culturally and linguistically diverse education produced benefits in personal growth by enhancing personal maturity (Grant and McKenna 2003; Green et al. 2008) and providing enriching, life changing experiences (Green et al. 2008).

Discussion

In order to examine culturally and linguistically diverse students' experiences of learning in clinical environments, a systematic review was undertaken. The original studies were conducted in different countries where researchers had different perspectives on the subject, using qualitative methods to collect and analyze their data. The main findings were that culturally and linguistically diverse students require a well thought-out procedure to integrate them into learning in a clinical environment; particularly, that students and clinical staff need additional time, cultural and language education, and support especially at the beginning of clinical learning (Arieli 2013; Grant and McKenna 2003; Green et al. 2008; Jeong et al. 2011; Mattila et al., 2010; Miguel and Rogan 2009; Myhre 2011; Pitkäjärvi et al. 2012, Rogan and Miguel 2006; Sedgwick et al. 2014).

In addition, since a prior education in communication and culture improved the success of clinical placements for students (Jeong et al. 2011; Miguel and Rogan 2009; Rogan and Miguel 2006; Rogan and San Miguel 2013; Seibold 2007), changes to the healthcare education curriculum of culturally and linguistically diverse students should be considered. Miguel and Rogan (2009) were involved in a long development process leading to an interventional course entitled *Clinically Speaking*; they created online learning tools (Rogan and San Miguel 2013) for culturally and linguistically diverse students. The intervention's outcomes demonstrated that the students had

improved communication skills and were more confident when starting their clinical learning after the course (San Miguel and Rogan 2012).

Our findings pertaining to the benefits of self-determination in clinical education and the barriers encountered could potentially be connected to positive and negative experiences right at the beginning of placements. Orientation activities, even without an emphasis on cultural and linguistic diversity, have been shown to reduce students' anxiety and increase motivation in clinical learning (Worrall 2007). It is also evident that more positive experiences of learning within a clinical environment were experienced by students who stayed for a shorter period of time in the host country, for example exchange students (Grant and McKenna 2003; Green et al. 2008; Myhre 2011). Such students reported challenges in adjusting to a new cultural environment (Grant and McKenna 2003; Green et al. 2008; Myhre 2011), but experienced fewer feelings of frustration, and less loneliness, isolation, confusion, embarrassment and panic, all of which were reported by students who came to study a whole degree program in a host country (Arieli 2013; Jeong et al. 2011; Pitkäjärvi et al. 2012; Rogan and Miguel 2006).

Students staying for a shorter period of time in a host country also did not consider that they had to prove their competences continually because of their international background, unlike longer-term culturally and linguistically diverse students (Jeong et al. 2011; Mattila et al. 2010). Cultural discrimination was mentioned only by the group of culturally and linguistically diverse students who were studying a whole degree program (Arieli 2013; Jeong et al. 2011; Mattila et al. 2010; Miguel and Rogan 2009; Seibold et al. 2007). However, exchange students did experience vulnerability as a result of being members of a minority culture (Grant and McKenna 2003; Green et al. 2008). The aspects of learning in a clinical environment that differed between students staying for several years and students staying for several months represent a potential research topic for

further studies. Looking at the culturally and linguistically diverse healthcare students' demographics and comparing ethnic background and experiences with respect to discrimination, may reveal interesting differences in clinical learning experiences while studying abroad. Scammell and Olumide (2012) found that racism was the result of using the power associated with being "White". Hall and Fields (2013) suggest that confronting racism and the power associated with being White could include open dialogues, and cultural and historical education in healthcare practice and education, which should be further explored and researched with respect to culturally and linguistically diverse students' clinical learning. However, external aspects of ethnic background and the power associated with being White require additional research.

The influence of mentoring on culturally and linguistically diverse students in clinical placements was closely linked to two concepts, *Pedagogical atmosphere* and *Supervisory relationship*, within the theoretical framework of Saarikoski et al. (2008). Similarities can be identified in supervisors' positive attitudes, continuous feedback, mutual respect, sense of trust, appreciation, and showing an interest in the student (Saarikoski et al. 2008; Warne et al. 2010). In addition, in our systematic review, it was found that a positive clinical learning environment helped students to minimize language barriers and to overcome difficulties faced during clinical learning. Furthermore, there were several specific challenges related to being culturally and linguistically different. Cultural and linguistic diversity led to a slower process of adaptation to a new clinical environment (Arieli 2013; Rogan and Miguel 2006), and involved an additional need for well-planned and operated guidance by mentors with sufficient time provided for mentoring and diverse learning opportunities for culturally and linguistically diverse students (Jeong et al. 2011; Green et al. 2008; Mattila et al. 2010; Pitkäjärvi et al. 2012). It suggested a need for prior education in communication and culture before entering the clinical environment (Miguel and Rogan 2009; Rogan and Miguel 2006; Rogan

and San Miguel 2013; Seibold 2007), and for closer professional cooperation between clinical facilitators and clinical mentors (Mattila et al. 2010; Rogan and Miguel 2006; Seibold et al. 2007).

Limitations

One of the limitations found when searching for original studies, was that identifying qualitative studies from their title can be challenging since, in such studies, the wording of the title may not reflect the specified inclusion criteria (Pope et al. 2007). Thus, we may have missed important original studies containing qualitative methodology on the reviewed subject in our review. However, screening references in the included original studies helped to reduce this problem (Pope et al. 2007).

In addition, the first stage of thematic synthesis – coding the original data – was conducted by one researcher because of time constraints. The analysis of the systematic review could have been even more robust if the coding process was undertaken by two researchers separately and further discussed before making final decisions about the coding. The second and third stages of the thematic synthesis – defining and categorizing of descriptive and analytical themes – were conducted by two researchers separately and agreed together (Thomas and Harden 2008).

The time limits placed on the review may bring limitations by leaving out important studies conducted before the defined period. During the search it was also noticed that the concept of cultural and linguistic diversity evolved rapidly during the ten years that the search covered (Bhopal 2014).

Implementations

The results of the systematic review demonstrate the need for further research in designing new methods to support culturally and linguistically diverse healthcare students and their mentors during clinical education. Additional studies of culturally and linguistically diverse students' learning in clinical environments could enhance knowledge of the relationships and correlations between influential aspects, particularly if different research methods were used as this is a limiting factor in qualitative research (Polit and Beck 2008). During the search it was discovered that mainly qualitative research methods were used to examine culturally and linguistically diverse students' experiences of learning in the clinical environment. Only two quantitative original studies (Clouten et al. 2006; Pitkäjärvi et al. 2012a) were found, but subsequently excluded since the analysis process was done based on the thematic synthesis of the qualitative studies. Therefore, culturally and linguistically diverse students' experiences of learning in clinical environments that we identified should be further empirically tested to permit generalizations and validation.

Since the process of integration was shown to play an important role in students' clinical education, entry into clinical placements and prior education in culture and language should be taken into consideration in healthcare education for culturally and linguistically diverse students. Additional support for clinical mentors is also needed, with the emphasis being on educating clinical staff about the students' different cultures and adjusting learning approaches to take account of such differences.

Clinical mentors' attitudes towards and support of culturally and linguistically diverse healthcare students have an influence on students' clinical learning experiences (Grant and McKenna 2003; Miguel and Rogan 2009; Pitkäjärvi et al. 2012; Rogan and Miguel 2006), and students' learning opportunities (Green et al. 2008; Mattila et al. 2010; Pitkäjärvi et al. 2012). Unempathetic behavior by teachers towards nursing students has previously been shown to have a negative influence upon

the care of patients and students' capacity to learn to become an empathetic professional (Mikkonen et al. 2014), which further emphasizes the importance of defining the competencies in mentors of culturally and linguistically diverse healthcare students. The challenges of working with such learners could be seen as opportunities and turned into strengths by determining what needs to be emphasized in the curricula for healthcare education and clinical mentoring.

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Table 1 Databases and search results identifying the original studies

Databases	**Number of Original Studies**
CINAHL (EBSCO)	31
Medline Ovid	33
Scopus	31
Web of Science (ISI)	37
Academic Search Premiere (EBSCO)	13
Eric (ProQuest)	40
Cochrane Library	0
Total	185
	156
	(after duplications removed)

Table 2 Search terms

Search Terms
Search keywords group 1: (students, nursing) OR (students, midwifery) OR (students, physical therapy)
Search keywords group 2 (cultural diversity) OR (language diversity) OR (English as a second language) OR (students, foreign)
Search keywords group 3: (learning environment, clinical) OR (education, clinical) OR (“clinical practice” or “clinical placement*” or “clinical rotation”) and (educat* or teach*)

Table 3 Inclusion criteria according to the PICOS review protocol

Inclusion Criteria	
Participants	Culturally and linguistically diverse undergraduate healthcare students, including nursing, midwifery and physiotherapy students.
Phenomena of interest	Students' experiences of learning
Context	Clinical environment, which characterizes learning in the clinical environment of healthcare education in clinical practice, placements, and rotation.
Types of studies	Original qualitative studies, peer-reviewed studies published during the years 2000-2014.

Table 4 Extracted data from original studies with quality assessments scores.

Original studies, country	Purpose	Participants	Methodology: data collection, data analysis	Key findings	Quality assessment
Arieli, (2013), Israel	To learn how students experience clinical placements in a setting of diversity and how they cope with the emotional challenges involved.	20 ethnically different third year nursing students: 10 Arabs, 9 Jews, 1 Circassian	Phenomenological approach In-depth interviews Inductive content analysis	The students' experiences relate to relationships with patients, clinical instructors and other students on the placements. The encounters with patients included categories of controlling empathy, managing resentment, and facing language frustration. The encounters with fellow students included the category diversity as an opportunity. The encounters with clinical instructors included issues associated with dealing with language difficulties and cultural discrimination.	9 QARI
Grant and McKenna, (2003), Australia	To describe students' learning experiences of international clinical placements; to explore perceptions of the clinical environment in which they were placed; to identify positive and negative aspects of participating in international placements and provide information to support decision-making for future clinical placements.	9 Australian nursing students having clinical placements abroad	Descriptive, exploratory approach Interviews and journal writing Thematic content analysis	The findings were presented in two main categories: micro clinical-based issues and nursing culture of the placement. First, focus was placed by students on recognizable skills and then they focused on understanding the organizational system as a whole. The nursing culture was reflected in students' amazement, discomfort, and growing into a new culture.	7 QARI
Green et al.,	To explore the	32 nursing	Case study methodology	Five main themes emerged from the data:	9 QARI

(2008), United Kingdom and Sweden	experiences of nursing students participating in international study programs organized by a school in the United Kingdom and a school in Sweden.	students: 18 from the UK and 14 from Sweden	Semi-structured individual and focus group interviews Documentary and content analysis	culture, aspirations and values, personal development, professional development, and enablers and disablers. The first theme culture – was connected to other four themes systematically. Participants saw international clinical placements as an opportunity, resulting in personal enrichment and growth in confidence. The theme 'enablers and disablers' included the sub-themes: stressors, language, support and preparation, which depended on support from host universities and/or home.	
Jeong et al., (2011), Australia	To explore the factors that impede or enhance the learning experiences of CALD students at university and in clinical settings; to explore the factors that impede or enhance the teaching experiences of academic and clinical staff working with CALD students at university and in clinical settings; to identify support structures/systems for CALD students and staff.	11 culturally and linguistically diverse nursing students: from China, Philippines and Botswana	Explorative approach Four focus group interviews Thematic analysis	Four main themes are presented: English language competence, feelings of isolation, limited opportunities for learning, and inadequate university support. Under English language competence, students made reference to feelings of frustration, panic and embarrassment. Feelings of isolation were explained by social isolation, feelings of rejection and discrimination. The issue of time was discussed in terms of the limited opportunities for learning. The reasons for inadequate university support were explained by lack of knowledge in mentoring multicultural students and lack of cultural knowledge in domestic and CALD students.	10 QARI
Mattila et al., (2010), Finland	To describe international student nurses' experiences of their clinical practice in	14 international student nurses: of	Semi-structured interviews Content analysis	The results were analyzed on the basis of positive and negative experiences. Positive experiences included appreciative orientation, sense of belonging to the team, enhancing	8 QARI

	the Finnish healthcare system.	African and Asian origin		independent working, growing towards professionalism and working as a member of the team. Negative experiences included restricted learning and compromised human dignity.	
Miguel et al., (2006), Australia	To describe the structure of the program, to discuss some of the major problems encountered by students in the clinical setting and present some of the teaching strategies used to address these problems.	15 non-English speaking background nursing students: from China, Hong Kong, Korea and Vietnam	Interviews in focus groups The method for data analysis not specified	Prior to the course, problems faced by international students in their clinical placements were communication with patients and nurses, use of professional terminology, and feelings of isolation and loneliness. After the course students' communication skills improved with growing confidence and they experienced clinical placements in a more positive way.	5 QARI
Miguel and Rogan, (2009), Australia	To investigate students' experiences of clinical placements in hospitals during the two years following *Clinically Speaking* to find out about their clinical experiences and whether they thought the early intervention language program provided adequate support for their ongoing clinical placements.	10 non-English speaking background nursing students: from China, Vietnam, Taiwan and Hong Kong	Descriptive, interpretive study approach Individual semi-structured interviews and clinical assessment documents Thematic analysis	The two main categories emerged: Students' perceptions of clinical placement prior to *Clinically Speaking* – 'Not knowing', and the effects of *Clinically Speaking* on students' clinical placement experiences – 'Knowing'. Students' 'knowing' was associated with positive emotions, confidence and improvement in their skills.	8 QARI
Myhre, (2011),	The aim of this study was to explore and	3 international	Explorative and descriptive hermeneutical	The results indicated that clinical placements for international students increased their	6 QARI

Norway	describe what incoming international non-Norwegian-speaking students consider the main challenges they encounter during clinical practice in Norway and how they overcome these.	nursing students: from central Europe	approach Focus group semi-structured interviews done at two different times in the participating students' exchange period: after 8 weeks and after 13 weeks The method for data analysis not specified	confidence. Challenges were seen in communication, feeling like a stranger at first, having to deal with nurses' reluctance to supervise international students. The responsibility, trust and value given to the international students were considered important. Reflection on learning with clinical teachers helped students to determine their learning needs.	
Pitkäjärvi et al., (2012), Finland	The purpose of this study was to research culturally and linguistically diverse nursing student's experiences in Finland	21 international nursing students in four different polytechnics	Explorative study Focus group interviews Thematic content analysis	Two main themes were presented: experiences of teaching methods and experiences of clinical practices. Clinical experiences were divided into the subcategories: finding placements, positive experiences, negative experiences and suggestions for the future.	9 QARI
Rogan et al., (2006), Australia	To describe perceptions of fifteen undergraduate nursing students from NESB about their first clinical placement in an Australian university program and the effect of a language support program on their oral clinical communication skills.	15 non-English speaking background nursing students	Descriptive interpretive approach Focus group interviews and questionnaire Thematic analysis	Three categories in the findings presented: wanting to belong but feeling excluded; wanting to learn how to…; and you find yourself…. The clinical placement challenges were seen in coping with language difficulties and further cultural challenges. Students did not have enough coping skills in challenging situations. Positive outcomes of the language program were also demonstrated.	6 QARI
Rogan and San Miguel,	To describe and evaluate an innovation to assist	266 English as a second	Open questions in the questionnaire	The results showed that students were more prepared for clinical placements after online	7 QARI

(2013), Australia	ESL nursing students at an Australian university develop their clinical communication skills and practice readiness by providing online learning resources, using podcast and vodcast technology, that blend with classroom activities and facilitate flexible and independent learning.	language nursing students: primarily from China, Korea, Nepal and Vietnam	Content analysis	learning was completed. Students gained more confidence when improving communication skills and clinical vocabulary.	
Sedgwick et al. (2014), Canada	The purpose of this study was to identify factors that influence minority nursing students' sense of belonging during clinical experiences.	7 minority nursing students: First Nations/ Aboriginal, Latino, Asian, East Indian, and Black American.	Individual semi structured qualitative interviews Thematic analysis	The major theme of the findings was defined as "It all depends". The sense of belonging of minority students was explained by three influential factors: RNs with whom students work, clinical nursing instructors, and student clinical groups.	8 QARI
Seibold et al., (2007), Australia	To report on an evaluation of a Teaching and Learning Enhancement Scheme (TALES) program designed to meet the unique needs of the 2005 cohort of international nursing	20 international nursing students: from Japan, Korea, Thailand, India, Hong Kong and	Focus group interviews Content analysis	The findings revealed that students experienced homesickness, communication problems, and cultural acceptance challenges by staff. The TALES program was evaluated positively. It helped students to increase theoretical and clinical skills competence.	7 QARI

students undertaking an accelerated Bachelor of Nursing (BN) program at the Victorian campus of Australian Catholic University (ACU) National.	Singapore

Table 5 Thematic analysis of culturally and linguistically diverse healthcare students' experiences of learning in a clinical environment

Students' experiences with different influential aspects (n=3)	Culturally and linguistically diverse students' experiences with implementing learning and provisions for learning in a clinical environment			Culturally and linguistically diverse students' experiences with peers and mentors associated with learning in a clinical environment		Culturally and linguistically diverse students' experiences with university support and instructions pertaining to learning in a clinical environment	
Main categories (n=7)	Implementing clinical education for culturally and linguistically diverse healthcare students	Self-determining aspects – influencing learning by culturally and linguistically diverse students in clinical placements	Prohibiting aspects – obstructing learning by culturally and linguistically diverse students in clinical placements	Social aspects – influencing culturally and linguistically diverse students' clinical learning	Mentorship aspects – influencing learning by culturally and linguistically diverse students in clinical placements	Influence of universities upon culturally and linguistically diverse students' learning in clinical placements	Opportunities in cultural and linguistically diverse healthcare degree programs
Analytical themes (n=19)	Process of adaptation to cultural diversity at the beginning of clinical placement perceived as challenging and requiring additional support Adjustment and growth to enter a new cultural environment of clinical practice perceived as a rewarding learning experience Constructive clinical orientation and reflection enhanced students' learning during clinical placements	Independent learning and building coping skills helped students to overcome cultural and communication challenges found in their clinical placement Communication management was considered important and helpful in learning by culturally and linguistically diverse students	Limitations to learning when not recognized and trusted as a motivated learner Strain of being different and compromising human dignity Disadvantages for students' learning in clinical practice when facing language difficulties	Supportive relationships with peers helped students to gain positive experiences Discriminative relationships with domestic peers caused feelings of isolation	Positive clinical learning environment helped students to gain learning experiences by minimizing language and cultural barriers Students' active involvement in clinical learning created feelings of belonging and reciprocal learning experiences Obstructing learning of students by experiencing conflicting mentoring in clinical placements Improvement of mentoring by providing support required for clinical staff to supervise culturally and linguistically diverse students	Prior education in communication and culture improved clinical placement success of students Cooperation between clinical facilitators employed by universities and clinical mentors were considered important by clinical staff and appreciated by students Clinical placement challenges caused students additional stress and even resulted in some failing in their studies	Culturally and linguistically diverse education benefited professional growth Culturally and linguistically diverse education benefited personal growth

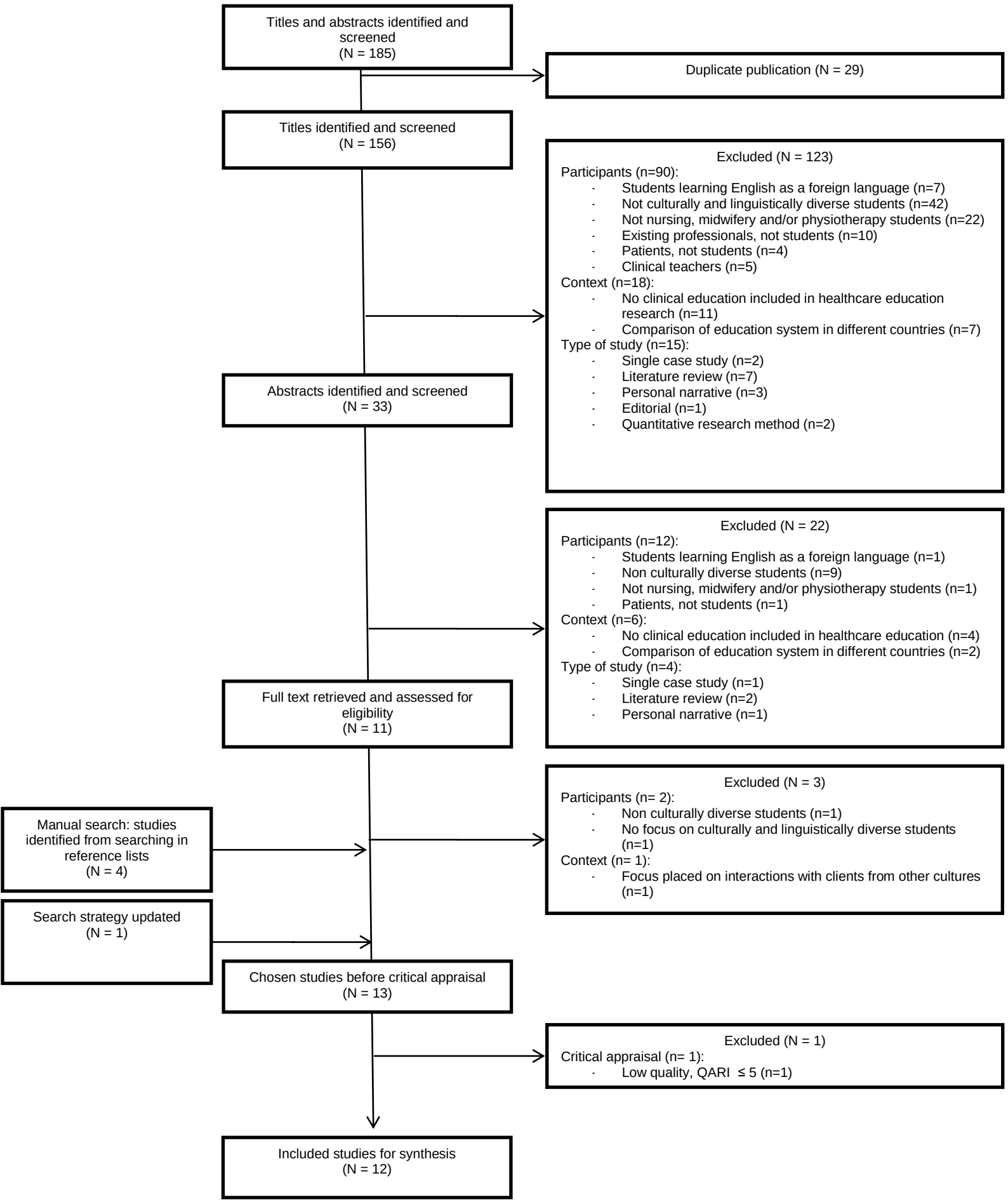

Figure 1 Flow chart of study selection process according to CRD (2009) guidance

IJNS AUTHOR CHECKLIST ***Authors of all papers should submit this checklist plus the checklist from the relevant reporting guideline together with their manuscript.*** *Part 1* identifies basic requirements for the manuscript submission *(mandatory for all submissions)*

Part 2 identifies recognized guidelines for scientific reporting, which you should use to prepare your manuscript *(required for systematic reviews and original research)*

PART 1 Basic requirements	***Author response or further detail – please complete the boxes below***
Word count	5515 (manuscript) + 350 (abstract) = 5865 (manuscript with abstract)
Was ethical approval given and by whom? (give any reference number)	Not needed
Please state any conflicts of interest	There were no conflict of interest between five authors
Please state sources of funding and the role of funders in the conduct of the research	We acknowledge the Northern Ostrobothnia Districts Hospitals Association, EVO for providing one month's financial support for the first writer of the review article
Please state any study registry number (e.g. ISRCTN)	N/A

For the items below, please tick in the right hand column to confirm you have included/addressed the items:		**Tick**
Title	Confirm that the title is in the format 'Topic / question: design/type of paper' and identifies the population / care setting studied. *(e.g. The effectiveness of telephone support for adolescents with insulin dependent diabetes: controlled before and after study).* The structure is optional for discussion papers, editorials and letters)	v
Abstract	A structured abstract appropriate to the design of the study is included (see *guidelines for authors)*.	v
	No references are cited in the abstract.	v
Key words	Between four and ten key words have been provided in alphabetical order, which accurately identify the paper's subject, purpose, method and focus. Use the Medical Subject Headings (MeSH®) thesaurus or Cumulative Index to Nursing and Allied Health (CINAHL) headings where possible (see http://www.nlm.nih.gov/mesh/meshhome.html).	v
Highlights	Bullet points have been included that identify existing research knowledge relating to the specific research question / topic (what is already known about the topic?) and a summary of the new knowledge added by this study (what this paper adds) *(see Guide for Authors*, does not apply to editorials or letters)	v
Abbreviations	No abbreviations are used in the title / abstract. Use of abbreviations /acronyms in the paper is minimised and restricted to those that are likely to be universally recognized (e.g. USA)	v
References	All citations in the paper have a complete and accurate reference in the reference list (see *Guide for Authors)*	v
Other Published accounts	*All* published and in press accounts of the study from which data in this paper originate are referred to in the paper and the relationship between this and other publications from the same study is made clear (see *Guide for Authors*) (Please upload copies of all previous, current and under review publications from this study and / or give full details below)	v

	Please provide references of ANY other papers using data from the study that this paper is based on) below.	N/A
	The study is referred to by a distinctive name which will be used in any future publications to identify that it is the same study (e.g. RN4Cast)	N/A
Authorship	All authors and contributors sufficiently acknowledged as per Guide for Authors.	v

PART 2 Standards of reporting	The editors require that manuscripts adhere to recognized reporting guidelines relevant to the research design used. These identify matters that should be addressed in your paper. Authors of research papers and systematic reviews are required to submit a checklist relevant to the research design they have used. The checklist will be drawn on within the peer review process. Please indicate which guideline (below) that you have referred to and ensure that the relevant checklist is uploaded. These are not quality assessment frameworks and your study need not meet all the criteria implied in the reporting guideline to be worthy of publication in the IJNS. The checklists do, however, identify essential matters that should be considered and reported upon. For example, a controlled trial may or may not be blinded but it is important that the paper identifies whether or not participants, clinicians, outcome assessors and analysts were aware of treatment assignments. *Reporting guidelines endorsed by the IJNS are listed below:*	**Checklist submitted****
Observational cohort, case control and cross sectional studies	STROBE **St**rengthening the **R**eporting of **Ob**servational Studies in **E**pidemiology http://www.equator-network.org/index.aspx?o=1032	
Quasi experimental / non-randomized evaluations	TREND - Transparent Reporting of Evaluations with Non-randomized Designs http://www.equator-network.org/index.aspx?o=1032	
Randomised (and quasi-randomised) controlled trial	CONSORT – Consolidated Standards of Reporting Trials http://www.equator-network.org/index.aspx?o=1032	
Study of Diagnostic accuracy / assessment scale	STARD Standards for the Reporting of Diagnostic Accuracy studies http://www.equator-network.org/index.aspx?o=1032	
Systematic Review of Controlled Trials	PRISMA - Preferred Reporting Items for Systematic Reviews and Meta-Analyses http://www.equator-network.org/index.aspx?o=1032	
Systematic Review of Observational Studies	MOOSE Meta-analysis of Observational Studies in Epidemiology http://www.equator-network.org/index.aspx?o=1032	
Qualitative studies	COREQ: Consolidated criteria for reporting qualitative research Tong, A., Sainsbury, P., Craig, J., 2007. Consolidated criteria for reporting qualitative research (COREQ): a 32-item checklist for interviews and focus groups. *International Journal for Quality in Health Care* 19 (6), 349-357. (http://dx.doi.org/10.1093/intqhc/mzm042)	
Other (please give source)	The systematic review conducted according to Centre for Reviews and Dissemination (CRD 2009); critical appraisal by The Joanna Briggs Institute (JBI 2014) was chosen to evaluate original studies for the review; the methodological quality of the systematic review process was assessed using the AMSTAR tool (Shea et al. 2007)	v
Not applicable (please elaborate)		