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ORIGINAL RESEARCH

A Systematic Review and Metasynthesis of Qualitative Studies on the Competencies of Health and Rehabilitation Science Educators

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Summary. *Background. Health and rehabilitation science educators' competence greatly influences students' professional development in a changing world. To ensure the availability of qualified health and rehabilitation science educators in the future, there is a need for continuous reforms in this sector to develop the educators' competence in this sector.*

Objective. The aim of this systematic review was to find new evidence on educators' experiences of their competence in health and rehabilitation science higher education.

*Methods. The study was a systematic review of previous peer-reviewed qualitative studies. The inclusion criteria were planned according to PICo: health and rehabilitation science professionals (**P**articipants), competence (Phenomena of **I**nterest) and teaching (**C**ontext). The search strategy was conducted by retrieving original studies from the databases of Cinahl (Ebsco), PubMed, Medic, EriC (ProQuest). Nine studies passed the inclusion criteria and quality assessment. Meta-synthesis was done by using summarizing thematic synthesis and abstraction.*

Results. Six main themes were identified as important for educators' competence and their continuous development: self-development, supervising, interaction, researching, a subject on educators' own profession, networking, and multiculturalism competences.

Conclusions. Competence is dynamic, and it is possible for educators to train or develop further. The creativity and innovation are needed in developing educators' competences in the future in designing new learning environments and organising an inclusive classroom for health and rehabilitation science students. More research is needed to understand better and develop the competences of health and rehabilitation science educators.

Introduction

Health and rehabilitation science educators are professional educators involved in providing healthcare and rehabilitation science education. Their roles in healthcare provision cannot be overlooked in view of the evolving conditions and environment of health and rehabilitation science professions. To ensure the availability of qualified health and rehabilitation science educators in the future, there is a need for continuous reforms in this sector in order to develop the competence of educators in this sector. A systematic review of quantitative studies

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by Mikkonen et al. (1) reveals the need for further qualitative studies on this area. Defining competence is challenging because the concepts used are diverse (2) and there is no general consensus on the meaning of competence (see for example, 3–6). In order to develop health and rehabilitation science educators' competences, there is a need to clarify the concept of competence. The concept of competence is widely used in higher education, but there is considerable conceptual and terminological confusion in relation to other concepts and terms associated to it. These include for example 'knowledge', 'skills', 'ability', 'know-how', 'qualification', 'performance', 'capability', 'expertise' and professional 'agency' (6–10).

Generally, educators' competence has been described as a complex concept. Le Deist (2005) (11) describes knowledge as a cognitive competence, where knowledge is underpinned by understanding. Cognitive competence includes both formal and informal knowledge. In addition, tacit knowledge gained by experience is an important aspect in competence. The capability to use the integrated knowledge appears to be at the core of educators' competence (1, 4, 5, 12, 13). According to Garside (14), when it involves different professions, the concepts should be defined in a detailed manner. Researchers have examined the theoretical differences in the concepts of competence. One of such differences between the definitions is the divergence between competence and competency. Competence describes what people *can* do, while competency focuses on *how* they do it. Thus, competence refers to the skills in hand and standard of performance reached, while competency refers to the behaviour by which competence is achieved (6, 7, 9, 11, 15, 16). However, Le Deist and Winterton (11) suggest that the usage of these definitions is inconsistent, as competency generally refers to behavioural areas and competence to functional areas. In addition, McMullan (17) points out that the concept of competence is holistic and dynamic, with differing and constantly changing meanings and interpretations.

Eraut (6) divides the classification of competence into two fields, the individual aspect and the social aspect. The individual aspect involves changes in individual development such as skill, knowledge, behaviour, motivation, and attitude. The social aspect develops in the context of social situations. Furthermore, Mulder (15, 16) identifies the following three approaches to competence theory, i.e., 'competence as behaviouristic functionalism', 'competence as integrated occupationalism' and 'situated professionalism'. Mulder's first approach to competence as behaviouristic functionalism sees competencies as trainable, where the competence develops from

the knowledge and isolated skills. In the second approach, competence as integrated into 'occupationalism', competence is expressed as an integrated, personal capability comprising the equilibrial elements of knowledge, skills and attitudes that are used in professional roles and situations. In the third approach, 'situated professionalism', competence develops from interactions with other professionals in specific contexts. To summarise, the concept of competence is multidimensional, and the specific use of the concept depends on the context of the users.

The aim of this systematic review and metasynthesis of qualitative studies is to get a deeper understanding and a comprehensive picture of competence by exploring how health and rehabilitation science educators experience their own teaching competencies.

Methods

Study Design. The systematic review was conducted according to the guidelines of the Joanna Briggs Institute (18). The research question and inclusion criteria were planned and arranged into a search strategy by adopting the qualitative PICo framework to conduct the review: **P**articipants (P), Phenomena of **I**nterest (I) and **C**ontext (C). Participants included health science educators, defined by their professional qualifications in healthcare sectors by the World Health Organization (19) and the University of Applied Science Act (2014/932, A1129/2014, L2015/325) (20, 21). The area of interest for this review comprised how health care and rehabilitation science educators experienced their own teaching competencies and work agency. The context was comprised of higher education.

Search Strategy. The search strategy was conducted in four databases: CINAHL (EBSCO), PubMed, Medic and ERIC (ProQuest) between 1/2007–12/2018. The key words of the search strategy criteria were divided into three search groups and eventually combined (22). The first group represented professionals from healthcare and rehabilitation, the second group represented the phenomena-associated terms of interest including competence and the third group represented the context of teaching (Table 1). When collecting data, only original, peer-reviewed qualitative studies written in English, Finnish and/or Swedish were included in the search strategy (23). The screening process of the total articles chosen by title, abstract, full-text and quality evaluation was conducted separately by two researchers (TO, KM), who then jointly agreed on the final selection.

Data Extraction and Quality Assessment. The quality of each original study was assessed by the Qualitative Assessment and Review Instrument

Table 1. The key words of the search strategy in metasynthesis of qualitative studies on the competencies
of health and rehabilitation science educators

Participants AND	teacher* or educator* or lecturer* or pedagog* or tutor* or supervis* or mentor*
Interest AND	competen* or knowledge* or skill* or attribute* or attitude* or expert* or know-how* or capability* or capacity* or qualif*
Context	Health care and rehabilitation work agency: health care and rehabilitation health care* or health science* or caring science* or physiotherapy* or physical therap* or nursing* or midwifery* or prosthetics* or orthopaedics* or medical technolog* or clinical laboratory science* or medical laboratory* or emergency medical-technician paramedic* or paramedic* or dental techn* or podiat* or rehabilitation counsel* or naprapath* or optic* or optometr* or osteopath* or radiograph*or dental hygien* or health visitor* or occupational therap*

(QARI) (18) where each study had to fulfill at least five of the ten evaluation criteria (23). Original qualitative research studies that met the criteria for research were extracted by author/s, year of publication, country of origin, purpose, participants, methodology and key findings (24) (see Table 2).

Meta-synthesis. The aim of this qualitative meta-synthesis is to provide a comprehensive picture of findings across various qualitative studies that investigate the findings of a general research topic (25). Instead of quantifying or statistically portraying the findings, qualitative meta-synthesis is an interpretive synthesis of data, including the descriptions or explanations of phenomena. According to meta-synthesis, the articles' data constitute the findings from primary studies and the contextual information for further analysis (26). The first step in the process involves a sufficient examination of the original findings. The second step involves comparing and contrasting them, and the third step, subsequently, establishes the key themes of the competencies in the primary studies used. Subthemes of the competences were also organised under each key theme (26) (Table 3).

Results
General Description of the Studies
The total number of identified titles and abstracts was 1903. After duplications were removed, the studies were screened by 1885 titles, 600 abstracts, and 63 full texts. After the screening process, nine original studies passed inclusion criteria and quality assessment (Fig. 1).

Nine of the studies contained nursing science educators (27–34) and one study contained rehabilitation science educators (35). The total number of participants were 783, participating groups included nursing educators (n = 556), students of nursing educators (n = 129), registered nurses (n = 90), and occupational therapists (n = 8). One study used a combination of midwife nurses, students of midwife educators and nurses (n = 494). The

sample size of original studies varied from 5 to 494. The authors used mostly individual or group interviews as a data-collection method. One study used online essays (29). Data were analysed with content or thematic analysis methods (n = 8) (29–35), phenomenological analysis (n = 2) (27, 28), and SPSS (n = 1) was used with thematic analysis in one study (32). The original research chosen for this systematic review was conducted in the United States of America (27–30, 35), United Kingdom (31, 32), and Pakistan (33, 34).

The Competencies of Health Science Educators
In the results of the metasynthesis, six key themes were identified: self-development, supervision, interaction, researching, networking and multiculturalism (Table 3 and Fig. 2).

Self-Development Competence. An educator is always learning new competencies and developing those that they already have. Educators develop their career prospects by reading career-specific journals that are up-to-date (29). Evidence-based methodologies and research are the main topics in terms of self-development. Educating is the key role of the educator, and this makes pedagogical competence their most important trait. Employing behavioural strategies may be considered old-fashioned; instead, an educator should be seen as a coach or adviser for learning (34). Modern society is constantly changing, and in order to follow the changes within society, an educator must adapt to them. This can be seen in the move from contact teaching to digital teaching strategies, which means relearning and updating one's teaching methods as well as becoming skilled in using modern devices. When these new teaching methods are implemented, they appear to facilitate students' interest in learning (33).

Supervision Competence. The key aspect of supervision competence involves teaching students to reflect on their learning. Reflection involves the educator guiding their students to reflect on learning methods and setting meaningful and realistic

Table 2. Original qualitative research studies that met the criteria for research

Original Studies (year) country	Purpose	Participants	Data Collection and Analysis	Key Findings	Quality Assessment (QARI)
Beard (2013) USA	To give voice to the nurse educators and to explore how they describe their role in educating minority-nursing students.	Nursing educators n = 10	Phenomenology. Interview. Phenomenological analysis	Competence in defining role of cultural differences. Acknowledging the unique culture of individuals.	7
Bulman et al. (2014) UK	To investigate the process of reflection in professional nurse education and the part it played in teaching and learning context.	Professional nurses n = 20	Ethnography. Interview. Content analysis.	Competence of facilitating reflection. Meeting the educational needs of students.	7
Cassum et al. (2016) Pakistan	To understand the experiences of faculty and students related to the adaption of BL pedagogies in health assessment course.	Post-registered nursing students n = 53	Focus group interview. Content analysis.	Competence of encouraging the students to learn. Recognizing the variability of students.	8
Duphily (2011) USA	To understand the experience of the novice nursing faculty member in an associate degree nursing program.	Novice nurses n = 6	Phenomenology. Interview. Phenomenological analysis.	Competence to learn in collegial communities. Competence of communication. Novice teachers need a lot of support and interaction with seniors.	7
Felicida-Reynaldo and Utley (2015) USA	To determine how academic nurse educators (ANE) incorporate EBP concept into their teaching philosophy	Academic nursing educators n = 151	Online essay. Content analysis.	Teaching in ever learning new competences, which are evidence, based. A teacher develops his/her career by reading special journals.	7
Fraser et al. (2011) UK	To evaluate whether midwife teachers bring a unique contribution in the context of outcomes for women and their families.	Midwife students n = 129, midwife nurses n = 35, and midwife teacher survey 293. Interview n = 37. Together n = 494	Surveys and focus group interview. SPSS and thematic analysis.	In academic teaching, doing research is desired but too sparsely carried out because of time and resource limits	7
Hansen (2015) USA	To uncover how occupational therapy educators describe their activities within the process of developing and sustaining global partnership and lessons learned.	Occupational therapy educators n = 8	Telephone interview. Thematic analysis.	Competence of creating good relationships. Good interaction competences are required in international networking.	6
Iqubal et al. (2014) Pakistan	To explore the nurse teachers' accounts of their perceptions and practices of providing written feedback.	Nursing teachers n = 12	Semi structured interview. Content analysis.	Competence to be a supervisor. Competence to give feedback.	7
Paul (2015) USA	Describe perceptions of transition between novices' self-identified needs challenges and full-time nursing faculty members' expectations necessary for the successful teaching role.	Novice nursing adjunct and experienced full-time nursing faculty members n = 24	Interview. Thematic analysis.	Recognizing the difference between a teacher and a friend. Academic teaching includes doing research but for many reasons, it is limited.	5

Table 3. The key themes of health and rehabilitation science educators' competencies

| Key Themes of Competencies	Subthemes of Competencies
Self-development	Learning in collegial communities. Implementing new teaching methods. Teaching and learning new evidence based information. Knowing requirements in teaching. Desire to teach. Reading special journals for career development. Interprofessional and shared learning.
Supervision	Encouraging students to learn. Facilitating reflection. Being a supervisor. Giving feedback. Recognizing the students' needs. Meeting the educational needs of students. Novice educators' need support and interaction with seniors.
Interaction	Creating good relationships between colleagues and students. International co-operations. Recognizing the difference between an educator and a friend.
Research	Conducting research is desired in higher education. Research is seldom carried out because of time and resource limits.
Networking	Capability of building a trusting and respecting team. Being an interactive member of a team. Networking and interacting successfully to build an effective partnership.
Multiculturalism	Defining and understanding cultural differences. Acknowledging the unique culture of individuals.
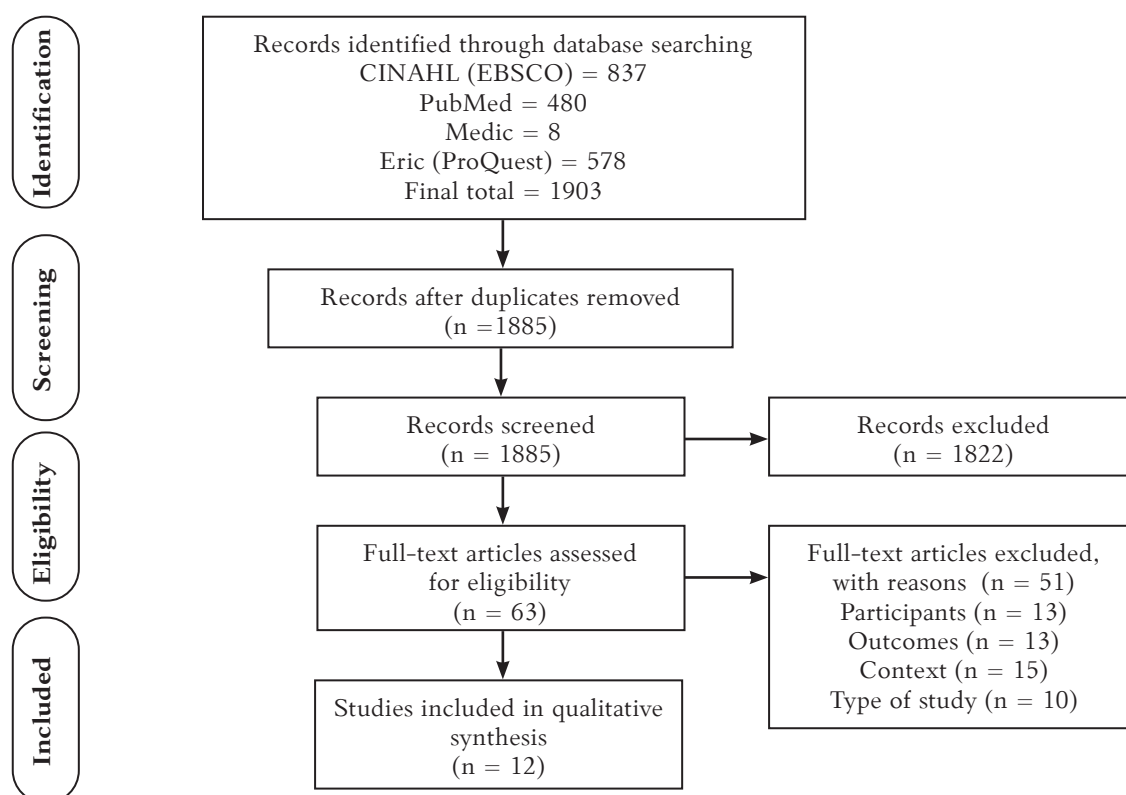
Fig. 1. Flow chart of study selection process according to Prisma Group (2009)

goals for them. An important aspect of reflection is feedback. The educator needs to offer sensitive guidance and constructive criticism in order to give subjective feedback. Written feedback is always recommended, and it must detail areas for improvement and guidance on how to improve said areas (34). Multiple digital devices can be used to offer guidance and feedback. Developing and maintaining an educational culture where reflection and reflective practice is promoted and valued is important (31).

Interaction Competence. Teaching comprises co-operative learning, and educators learn in collegial communities, particularly novice educators,
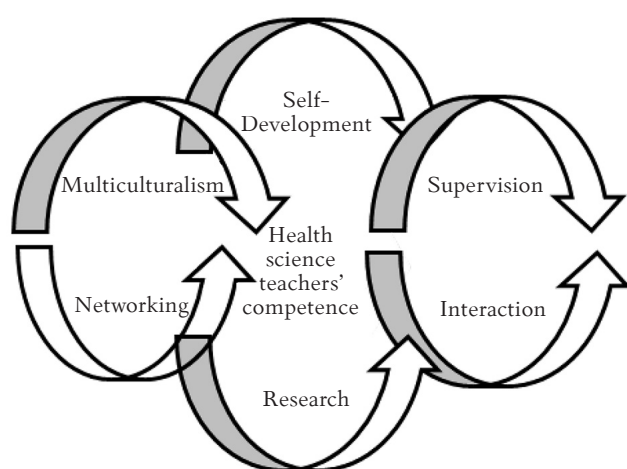
Fig. 2. Health and rehabilitation science educators'
competencies

who need support and interaction with their seniors to learn (28). Thus, interaction is a vital aspect of teaching and learning, both with colleagues and students. Creating good relationships through trust and competency is a vital component of interaction (35). An educator's career may change in terms of professional roles as their career progresses; this involves many new challenges. Thus, within the context of working culture, the educator needs to develop in terms of adoption and socialization. For many students, the educator is an idol, but an educator's role is not the same as a friend's role. An educator's relationship with students is friendly and professional (30).

Research Competence. A university educator is highly respected, and to become a university educator, it requires effort. In academic teaching, conducting research is desired, but it is rarely carried out because of time constraints (30, 32). The teaching subject is often evidence-based, and updating one's knowledge of what one is teaching is important in order to become a successful educator and researcher (29).

Networking Competence. Having a network means possessing the competence to work in a team and, prior to that, having the competence to build a team. This requires much trust and respect (35). To be a team member, an educator must network and interact successfully to build an effective partnership (28).

Multicultural Competence. The traditional concept of one nation within one country is no longer relevant. Multiculturalism is present in higher education today. It means recognizing cultural differences in individuals and minorities (27). An educator needs to be competent in recognising the range of students originating from different minorities and encouraging them in their learning (28, 33, 35).

Discussion and Conclusion

The aim of this systematic review was to find new evidence on educators' experiences of their competence in health and rehabilitation science higher education. The results found that this topic remains quite neglected in terms of research. Only nine studies passed the quality assessment, and they were used in this study. In addition, there is hardly any research on how rehabilitation science educators experience their own competencies.

Competencies are both individual and social, as previously classified by Eraut (6). Most of the competencies found in this review comprised of social competencies. Interaction is essential in educators' work, with different kinds of students, colleagues and co-operation partners. Students have various kinds of backgrounds and educators need to understand their premises, including experiences and conceptions, and personal goals in learning (36). That is why pedagogical dialogue is important to maintain throughout the educator education process. Educators also need to have competence in dialoguing, listening and understanding different opinions and aspects of topics learned in studies (37). The results of this systematic review and metasynthesis of health and rehabilitation science educators' continuous development and self-development support McMullan's (17) theory that competence is dynamic, it is possible for educators to train or develop further to gain better competencies. Competencies are also situated; it depends on the situations or contexts one uses own competencies (15).

According to the findings of this research, self-development competence is essential for health and rehabilitation science educators. This development is life-long, and competencies grow from educator education through continuous learning and updating of information, as well as work experience. Lavonen (38) talks about competence for life-long learning. A professional educator is supposed to have a versatile knowledge base and also to be an autonomous professional. Educators need to keep up-to-date knowledge of their disciplines; as stated by Iqubal et al. (34), evidence-based methodologies and research are the main topics in self-development. It is notable that competence in the subject, the core competencies e.g., in nursing (39) or in physiotherapy (40), were not mentioned separately as an area of competence in the results, but they were identified as part of all the competencies in this study. According to Lavonen (38), a professional educator is viewed as both a critical user, as well as a producer of knowledge needed in education. Töytäri et al. (41) discovered that in general higher education educators' experiences of their own learning widen from educator–student-centred action to shared expertise in different contexts of

co-operation partners. The study also shows that while some other educators relate their own learning mainly to learning about teaching, some others see learning in a broader context, referring to all professional areas, including research and workplace relations.

The educator is supposed to develop pedagogical skills continuously and be able to spotlight teaching philosophy (38). The role of the educator has also changed over time. According to Iqubal et al. (34), the role of the educator nowadays is more of a coach or a learning advisor. The educators´ role may also be more of a tutor depending on the pedagogical approach used in learning (42). The roles of educators and students can be seen as interrelated. When students are assumed to take more responsibility for their own learning, the role of the educator shifts from the mediator to the facilitator of reflective action and vice versa (43). Reflection is an important aspect of learning and educators need to maintain an atmosphere of teaching that gives students the opportunity to reflect and question what they have learned (31). According to Brookfield (44), the possibilities for critical reflection are at their best when they are realized together with others by sharing ideas and seeking broader perspectives on different identifiable situations. Niemelä (45) adds that the responsibility of an educator and an instructor include duties as an educator and the responsibility to treat people right.

Modern devices have become important teaching; digitalization has become an inevitable part of the educator's work and healthcare and rehabilitation professions work. Teaching is largely done through online studies (46). It is therefore essential for healthcare and rehabilitation educators to acquire digital skill in order to improve their teaching competence in health (47) and rehabilitation (48–50). Educators may have to update their digital teaching strategies and learn how to use modern devices. The positive aspect of this modern technology is that digital technology may facilitate students' interest in learning (33). Anttila et al. (2018) (48) have also identified among rehabilitees four subcategories of technology users: feeling outsider, being uninterested, reflecting benefit and enthusiastic use. In the future, educators should pay more attention to individual technology users and individual guidance and teaching strategies among healthcare and rehabilitation students and their customers.

Besides interacting with students, co-operation with colleagues is important as well. Educators need interaction and collaboration skills, and a professional educator should be competent in networking (38). Creating good relationships and having the competence to build and work in a team requires trust and respect (35). Effective team membership and partnership are built by networking and interacting successfully with others (28). Team-teaching is a teaching method where two or even more educators teach together in a classroom. That way, educators have the possibility to share their expertise together (51). Nowadays, multi-professional and interdisciplinary co-operation and networking are important (52). Many phenomena in health and rehabilitation sciences are holistic and involve several professionals and multidisciplinary approach for patients and rehabilitees to get better. However, in different work contexts, interaction also takes place via e-mails and in social media, as users want to develop ways to extend their professional development globally. This encourages peer interaction and group work, and the sharing of users' knowledge and experiences (53, 54).

Doing research is one of the health and rehabilitation science educators' competencies found in this review. University health and rehabilitation science educators are interested in performing research-related activities; unfortunately, it may be difficult to find time for it (30, 32, 55). In universities, if an employee has teaching-oriented work, it might be challenging to keep up research skills. That is why it is important to have periods to concentrate specifically on research. Research is also done in co-operation with others, as it is in this Finnish research project Competent Educators Together, which this study is a part of. Co-operation is done between seven higher education institutions in Finland (TerOpe-project 2019, https://shareducationnetwork.com/) (56). In future health and rehabilitation science, educators' research projects may also be implemented in international co-operation to widen the scope of understanding from international perspectives. Overall, in this study, interaction with other professionals makes interaction, networking and multiculturalism important competencies in health science educators' work. For example, the findings of this study can be used as a reference when planning and developing cohesive and nationally-comparable health and rehabilitation science educators curricula to promote national comparisons of health and rehabilitation science educators competencies across the nations in the EU, and assessing at the workplace the individual needs for continuing education.

As found in this review, multiculturalism is present in educational institutes nowadays, which has widened educators work for recognizing cultural differences in individuals and minorities (27, 28, 33, 35). There is an increasing amount of international students in educational institutes and health professionals' mobility has increased continuously (57). Therefore, within healthcare and rehabilitation educator education, cultural knowledge and awareness, cultural interaction, cultural sensitivity and

linguistic diversity are important aspects to notice (58). It is possible that language will be one barrier in transcultural teaching. If educators understand and appreciate the cultural differences in teaching and learning, it will help in interaction.

The ethical aspect of professional competence was not seen in the results of this study. However, ethical issues are part of all the work in the health sector. Recently, ethical competence has been identified to be an important competence of health science educators' work (59, 60). Thus, the concept of ethical competence seems to be useful when evaluating the health science professionals' basic work with patients and rehabilitees and similarly health science and rehabilitation educators' work in education (60).

For fluent use of the competencies, one has to be able to integrate different competencies together (15). Even though one has many competencies, all the competencies put together are more than the sum of individual competencies. Thus, creativity and innovation are needed to develop educators' competencies in designing new learning environments and organizing an inclusive classroom for health and rehabilitation science students (38). It is obvious that more research is needed to better understand and develop the competencies of health and rehabilitation science educators.

Strengths and Limitations
Data collection from peoples' everyday reality is

the main strength of qualitative research synthesis (61). Data for this study were retrieved from four international scientific databases according to the guidelines of the JBI (18). The research question and inclusion criteria were planned and implemented into a research strategy by establishing PICo to conduct the review (18). The number of studies reviewed was 1885, which is a large amount. The critical appraisal was performed with JBI QARI evaluation tools (18), which were useful in evaluating the quality of each original study. The qualitative research methods used in original studies were quite similar in nature, so the interpretation of results was trustworthy and suitable. The major strength of this study was the triangulation of the researchers (HK, TS, AP, TO, KM) during the study process.

Statement of Conflict of Interest
The authors declare no conflicts of interest.

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