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Social, health and rehabilitation sector educators' competence in evidence-based practice: A cross-sectional study

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Abstract

Aim: The purpose of the study was to identify and describe the characteristic profiles of evidence-based practice competence of educators in the social, health and rehabilitation sectors and to establish relevant background factors.

Design: This study was carried out as a descriptive cross-sectional study.

Methods: Data were collected from social, health and rehabilitation sector educators working in the 21 Finnish universities of applied sciences and seven vocational colleges ($n = 422$; $N = 2,330$). A self-assessment instrument measuring evidence-based practice competence was used. Competence profiles were formed using a K-cluster grouping analysis.

Results: Three distinct competence profiles were identified and delineated. Most educators feel that they can guide students' critical thinking and are able to seek and produce scientific knowledge. Evidence-based practice competence was explained by background factors such as year of graduation (for higher degree), level of education, job title, current employer and current field of work.

KEYWORDS
competence, educator, evidence-based practice, health care, rehabilitation, social care

1 | INTRODUCTION

Educators working in the fields of social, health and rehabilitation need competence in evidence-based practice (EBP) as one of their areas of expertise; only with a secure grasp of this competence can they be sure of adequately educating future experts in the field of social, health and rehabilitation so that they can offer the best possible patient care (Fiset et al., 2017). The role of educators is crucial in enabling students to learn and develop, and to be confident in using different research results to support their decision-making, for example when carrying out nursing tasks (Finotto et al., 2013). A previous study found that Registered Nurses do not believe they are meeting the EBP competencies (Melnyk et al., 2018). The Finnish Health Care Act (2010/1326) states that "the provision of health care shall be based on evidence and treatment and operating practices. The health care provided shall be of high quality, safe and appropriately organised." EBP is seen as a core area of expertise for health and social care professionals (Mehrdad et al., 2012; Mullen, 2014; Orta et al., 2016), and their actions have a significant impact on the quality of care and the outcomes of patient and client care. The foundation for EBP awareness must be created whilst future professionals are studying and training, and health and social services educators obviously play a key role in this regard (Holopainen et al., 2019).

EBP is an integral part of the Joanna Briggs Institute's (JBI) evidence-based healthcare model and is heavily used when applying the model to the care of patients. JBI's evidence-based healthcare model consists of global health data, evidence generation, evidence synthesis, evidence transfer and evidence implementation. It is carried out in practice by social and healthcare professionals and managers, as well as by researchers and experts, among others. Different organizations, including educational organizations, also play an important role in the overall development of evidence-based health care. EBP is a shorthand way of referring to the prudent use of reliable and up-to-date research and/or as reliable information as possible in the care, rehabilitation and health promotion of the patient or client, while taking into account the individual care of the patient/client and any limitations of the treatment environment (Jordan et al., 2019). Decision-making by a social, health and rehabilitation worker is always based on knowledge, and the more reliable the knowledge, the better the patient's treatment needs can be met.

Internationally, a social, health and rehabilitation sector educator can be someone working both in upper secondary vocational education—mainly helping to provide a basic diploma education in social and health care (e.g. practical nurse)—and at a university of applied sciences, teaching the professions of social, health and rehabilitation care (e.g. nurse, social worker, physiotherapist and occupational therapist). The objective of any university of applied sciences was to educate professionals in preparation for working life and its inevitable changes and developments (Government Decree on Polytechnics, 1129/2014, Polytechnic Act 932/2014). In Finland, health and social services educators have been regulated by decrees issued by the government (Government Decree on Polytechnics, 1129/2014, Section 17): their areas of expertise should include scientific and professional expertise in the fields of social work, health and rehabilitation; pedagogical, ethical and cultural competence; personal interaction, cooperation and network competence; and knowledge of administrative and occupational well-being. Additionally, educators are required to have sustainable innovation and foresight competence, EBP competence and continuous development competencies, which are especially needed in the process of consolidating and transforming education (Mikkonen, Koivula, et al., 2019). Educators' basic knowledge, skills and experiences already form a good foundation for competence, but in addition, competencies are also seen as consisting of the potential and ability of the individual to combine their competencies and implement them in the working environment. In previous studies, the competence of Finnish social, health and rehabilitation sector educators in general has encouragingly been found to be both robust and wide-ranging. These educators have also recognized that they need versatile skills and continuous updating of their competencies in order to adapt to changes in society, working life, legislation, the economic situation, global and national political strategies. The educator's all-round competence has been found to be linked to the quality of education and the competence of future social, health and rehabilitation professionals (Mikkonen et al., 2018; Salminen et al., 2013; Töytäri et al., 2016).

EBP is an indispensable area for the implementation of evidence-based education (Salminen et al., 2013) in health care (Patelaroy et al., 2013), the social service sector (Mullen, 2014) and rehabilitation (WCPT, World Confederation for Physical Therapy, 2018). The World Health Organization (WHO) has also identified EBP as one of the core working areas for nursing educators (WHO, 2016). EBP competence in the context here refers to the educator's continuous competence in taking into account up-to-date evidence in their own decision-making when educating students, working with colleagues and developing education (Mikkonen, Koivula, et al., 2019). Studies show that in the medical context EBP leads to high-quality patient care, individualized patient treatments and the best possible outcomes, including improvement of patient safety (Considine & McGillivray, 2010, Revello and Gallo, 2012). However, there are still many serious barriers to EBP implementation in health care, including lack of time and skills and misperceptions of what EBP actually is (Scurlock-Evans et al., 2014). Previous studies have developed a set of EBP competencies for nurses that healthcare institutions can use in their quest to achieve high-performing systems that consistently implement and sustain EBP. Those competencies can be integrated into the nursing curriculum development of entry-level EBP teaching and learning programs for health professionals. (Melnyk et al., 2014, Albarqouni et al., 2018). However, educators' competence requirements for EBP in those studies have not been explored.

This study is part of the Finnish national TerOpe key government project, which developed an evidence-based aspirational model of competence for social, health and rehabilitation services educators and a model for their continuous professional development (Mikkonen, Koivula, et al., 2019). We focus on social, health and rehabilitation services educators and their competence in EBP.

In previous studies, it was observed that the implementation of EBP has been studied in nursing education (Fiset et al., 2017), nursing and nursing management (Holopainen et al., 2019; Melnyk et al., 2018; Stokke et al., 2014), nursing students (Lam & Schubert, 2019) and educators (Mehrdad et al., 2012; Nichols, 2017) and in physiotherapy (Scurlock-Evans et al., 2014). It was also observed that the EBP competence of educators is usually considered and presented in the form of their teaching rather than in their larger capability to understand, evaluate and implement sound evidence in decision-making in healthcare systems (and their grasp of its relevance internationally). We believe that the role of educators in EBP is essential because they need to be able to continuously take into account up-to-date evidence in their own work when teaching students, developing education and enabling future professionals to base their care on evidence-based practice.

2 | METHODS

2.1 | Purpose and research questions

The purpose of the study was to identify and describe the profiles of EBP competence of educators in the social, health and rehabilitation sectors and to establish relevant background factors.

Research questions:

1. What are the profiles of evidence-based practice competence for educators in the social, health and rehabilitation sectors?

2. What kind of major background factors are related to evidence-based practice competence of educators in the social, health and rehabilitation sectors?

2.2 | Participants and data collection

This study was carried out as a descriptive cross-sectional study. All educators (N = 2,330) from 21 universities of applied sciences and seven vocational colleges in Finland were invited to participate in the study. The total number of respondents was 422 (response rate 18%). The inclusion criteria were for participants to be a social, health or rehabilitation sector educator, working in full-time or part-time employment at a university of applied sciences or a vocational college. The survey data were collected using an electronic questionnaire from October to December 2018. A link to the study was sent by email via the contact person of the participating organization. The invitation was sent once, with four reminders issued at two-week intervals. The electronic survey included background items and instruments related to EBP competence (reported in this study), an educators' competence instrument (HeSoEduCo, Männistö et al., 2020), the Digital Collaborative Learning instrument (Männistö et al., 2020) and an educators´ continuing professional development scale (EduProDe, Koskimäki et al., 2020). This study reports the EBP competencies that are relevant for the purpose and research questions of this study. The background items were related to educators' age, gender, previous education, year of completion of highest educational qualification, current work organization, work experience as an educator, area of current work and job description.

2.3 | Instrument

Since no suitable instrument developed measuring educators' competence in EBP competence was found, the EBP competence self-assessment instrument was developed for this study according to the Joanna Briggs Institute Model of Evidence-Based Healthcare (Jordan et al., 2019) and a qualitative study conducted in the larger project (Mikkonen, Koivula, et al., 2019). Since education is seen in JBI as an important element of evidence transfer and evidence implementation, the items were operationalized, focusing on those two areas. In total, ten items were created and evaluated by an expert panel. After the main data collection, construct validated prior to the data analysis with explorative factor analysis using principal axis factoring and promax rotation was conducted. The Bartlett's sphere test ($p < .001$) and the Kaiser–Meyer–Olkin test (0.840) were shown to have adequate values for instrument validation. The first factor (Implementation of EBP, 4-items) was explained by 44.2% of total item variance, the second factor (Retrieval and production of knowledge, 4-items) 13.8% and the third factor (Guiding student critical thinking, 2-items) 9.7%. The three factors were explained by 67.8% of the total variance (see Table 1). The items were measured with the 1–4 Likert scale (1 = completely disagree to 4 = fully agree). The reliability Cronbach alpha of the instrument varied from 0.75–0.83.

2.4 | Data analysis

Quantitative data were statistically analysed using IBM SPSS Statistics V.25. The description of the data was used for frequency and percentage fractions, and mean and standard deviation values (*SD*).

A one-way variance analysis and a chi-square test were used to examine the link between the level of competence and background variables. Competence profiles were formed using K-Means cluster analysis. The sum-variables of the three factors were interpreted by three levels of Likert scale classification with low (<2.49), moderate (2.50–3.49) and high (>3.5) levels of competence. The Kruskal–Wallis and Mann–Whitney tests were used to examine the links between the profiles with the Bonferroni correction. The limit for statistical significance in all tests was p-value .05 (Munro, 2005).

2.5 | Ethical issues

The study was carried out at all stages in accordance with good scientific practice (RCR, 2012). Appropriate research permits were applied for the completed data used in the study in 2018. The Research Ethics Committee statement was not required since the study did

TABLE 1 EBP competence instrument

Variables	Factors 1	Factors 2	Factors 3
I can explain the importance of evidence-based practice in social and health care.	0.999		
I can identify the process of evidence-based practice (i.e. searching for evidence, implementation and evaluation).	0.744		
I utilize evidence in my teaching (e.g. clinical practice guidelines, reviews).	0.397		
I can guide students in finding the best possible evidence for decision-making (e.g. clinical practice guidelines, summarized evidence).	0.368		
I can critically evaluate the validity of research.		0.798	
I can produce scientific knowledge.		0.719	
I continuously follow scientific publications in order to develop my competence.		0.558	
I can search for research evidence from the most common databases independently (i.e. Pubmed, Cinahl, Medline).		0.520	
I can guide students to identify and critically evaluate the operating practices of the work community.			0.878
I can guide the student to identify and critically evaluate their own activities.			0.846
Eigenvalue	4.421	1.387	0.977
Percentage of variance (%)	44.21	13.87	9.76
Total percentage of variance (%)			67.85
Cronbach alpha	0.795	0.750	0.830

not touch the physical and mental integrity of the participants (1999 488/1999, Declaration of Helsinki, 2013). The research data do not reveal the individual personal data of the participants, and data protection principles in accordance with legislation were followed when the research data was stored and processed (2018, 1050/2018). Participation in the study was informative and voluntary, and the participants did not receive a reward or other similar merit for their participation. Information about the study was provided in a letter relating the study aim, participant benefit, link to the questionnaire and contact details of the researchers. The voluntary nature of participation was emphasized, and participants' agreement to answer the questionnaire was taken as their agreement to join the study.

3 | RESULTS

3.1 | Participants' background information

The study comprised 422 educators from the social, health and rehabilitation sectors. The majority of them (89%) were women, with the age range from 22–66 years old (mean 50.8, *SD* 8.6). The majority of respondents (71%) had completed a master's degree from university, and their work experience in the field corresponding to that degree varied between 0–45 years (mean 17.2, *SD* 9.9). The average year of graduation of the educators' qualification was 2006. Slightly more than half of the respondents (53%) had completed educator education in health sciences, and more than 60% of them were lecturers. Nearly 80% of the respondents worked at a university of applied sciences, while the rest were working in vocational colleges. Professional experience in teaching positions ranged considerably from less than one year to more than 40 years.

3.2 | Competence profiles of evidence-based practice of social, health and rehabilitation sector educators

According to the research results, educators clustered into three distinct competence area profiles (Profiles A, B and C: see Tables 2 and 3). Just over half (n = 218, 52%) of the participants were placed in competence Profile A, scoring the highest level of EBP competence among all three profiles. The highest area of EBP competence of Profile A was in "Guiding student critical thinking" (mean 3.91, *SD* 0.18), with "Implementation of EBP" (mean 3.86, *SD* 0.21) following and with the final and lowest area of EBP competence being "Retrieval and production of knowledge" (mean 3.69, *SD* 0.32). At the items level, educators most highly evaluated their competence in guiding students to identify and critically evaluate their own activities (mean 3.97, *SD* 0.17) and the lowest in knowing how to produce scientific data (mean 3.48, *SD* 0.62). The year of graduation

TABLE 2 Background variables by educators' profile

Background	All participants (n = 422, 100%)	Profile A (n = 218, 51.7%)	Profile B (n = 122, 28.9%)	Profile C (n = 82, 19.4%)	p-value
Age in years, mean (*SD*)	50.89 (8.63)	51.20 (8.64)	50.43 (8.85)	50.73 (8.32)	.718*
Graduation year of the highest qualification, mean (*SD*)	2006 (8.16)	2007 (8.34)	2006 (6.80)	2003 (8.80)	<.001*
Professional (social/health/rehab.sector) experience in years, ka (*SD*)	17.21 (9.98)	18.12 (10.23)	15.82 (9.59)	16.87 (9.74)	.118*
n (%)					.716**
Gender					
Woman	378 (89.6)	194 (89.0)	111 (91.0)	73 (89.0)	
Man	42 (10.0)	22 (10.1)	11 (9.0)	9 (11.0)	
Other/I don't want to express	2 (0.5)	2 (0.9)	0 (0)	0(0)	
Level of education					**.002****
Vocational qualification at school/youth level (e.g. practical nurse)	1 (0.2)	0 (0.0)	1 (0.8)	0 (0.0)	
Post-secondary/university of applied sciences	4 (0.9)	1 (0.5)	1 (0.8)	2 (2.4)	
University of applied sciences Post-graduate degree	30 (7.1)	17 (7.8)	7 (5.7)	6 (7.3)	
University (master's degree)	300 (71.1)	139 (63.8)	92 (75.4)	69 (84.1)	
University (doctoral degree/licentiate)	87 (20.6)	61 (28.0)	21 (17.2)	5 (6.1)	
Educator education					**<.001****
Vocational educator education	152 (36.0)	71 (32.6)	33 (27.0)	48 (58.5)	
Health sciences educator education	223 (52.8)	127 (58.3)	76 (62.3)	20 (24.4)	
Education science educator education	45 (10.7)	20 (9.2)	13 (10.7)	12 (14.6)	
Other	2 (0.5)	0(0)	0(0)	2 (2.4)	
Current job title					.012**
Part-time hourly educator	15 (3.6)	4 (1.8)	6 (4.9)	5 (6.1)	
Full-time hourly educator	75 (17.8)	32 (14.7)	20 (16.4)	23 (28.0)	
Lecturer	280 (66.4)	146 (67.0)	83 (68.0)	51 (62.2)	
Head educator	42 (10.0)	31 (14.2)	9 (7.4)	2 (2.4)	
Head of education	9 (2.1)	5 (2.3)	3 (2.5)	1 (1.2)	
Project manager	1 (0.2)	0(0)	1 (0.8)	0(0)	
Current education organization					**<.001****
University of applied sciences	332 (78.7)	188 (86.2)	93 (76.2)	51 (62.2)	
Vocational college	90 (21.3)	30 (13.8)	29 (23.8)	31 (37.8)	
Current educator work field of education					**<.001****
Social affairs	88 (20.9)	38 (17.4)	15 (12.3)	35 (42.7)	
Health sector	260 (61.6)	141 (64.7)	87 (71.3)	32 (39.0)	
Rehabilitation	32 (7.6)	16 (7.3)	11 (9.0)	5 (6.1)	
Combined units	42 (10.0)	23 (10.6)	9 (7.4)	10 (12.2)	

Note: statistical significance $p < .05$ (marked in bold).

Abbreviations: mean, average, *SD*, standard deviation

*one-way variance analysis, Bonferroni correction.; **crosstab, chi-square test.

of the educators' degree, educator education, the current education organization and the current field of work had a statistically significant ($p < .001$) link to competence with EBP. Profile A educators had graduated with their highest degree on average in 2007, and more than half of them had health science educator education (58%). A sizeable majority of Profile A educators (86%) worked at universities of applied sciences, and more than half (65%) were responsible for healthcare education. EBP competence was also explained by the educator's level of education ($p = .002$) and their current job title ($p = .012$). More than half of Profile A educators (64%) had

TABLE 3 EBP competence of social, health and rehabilitation educators ($n = 422$)

EBP competence	Profile A ($n = 218$) Mean	*SD*	Profile B ($n = 122$) Mean	*SD*	Profile C ($n = 82$) mean	*SD*	*p*-value
IMPLEMENTATION OF EBP	**3.86**	**0.21**	**3.71**	**0.26**	**2.91**	**0.37**	**<.001***
I can explain the importance of evidence-based practice in social and health care.	3.90	0.30	3.84	0.36	2.93	0.62	
I can identify the process of evidence-based practice (i.e. searching for evidence, implementation and evaluation).	3.71	0.48	3.63	0.50	2.54	0.67	
I utilize evidence in my teaching (e.g. clinical practice guidelines, reviews).	3.94	0.22	3.86	0.34	3.21	0.56	
I can guide students in finding the best possible evidence for decision-making (e.g. clinical practice guidelines, summarized evidence).	3.91	0.28	3.54	0.51	2.99	0.55	
RETRIEVAL AND PRODUCTION OF KNOWLEDGE	**3.69**	**0.32**	**3.38**	**0.36**	**2.72**	**0.43**	**<.001***
I can critically evaluate the validity of research.	3.85	0.35	3.48	0.56	2.95	0.51	
I can produce scientific knowledge.	3.61	0.54	3.30	0.66	2.79	0.64	
I continuously follow scientific publications in order to develop my competence.	3.48	0.62	3.18	0.63	2.57	0.77	
I can search for research evidence from the most common databases independently (i.e. PubMed, CINAHL, Medline).	3.85	0.38	3.60	0.54	2.57	0.78	
GUIDING STUDENT CRITICAL THINKING	**3.91**	**0.18**	**3.02**	**0.28**	**3.26**	**0.49**	**<.001***
I can guide students to identify and critically evaluate the operating practices of the work community.	3.87	0.33	2.96	0.32	3.23	0.55	
I can guide the student to identify and critically evaluate their own activities.	3.97	0.17	3.10	0.39	3.29	0.53	

Note: competence level interpretation: low (<2.49), moderate (2.5–3.49), high (>3.5).

Abbreviations: mean, average; *SD*, standard deviation.

*Kruskal–Wallis test, Bonferroni correction, Mann–Whitney test, Statistical significance $p < .05$ (marked in bold).

completed a master's degree from university, and most (67%) educators worked as lecturers.

Profile B comprised 29% of respondents ($n = 122$), recording a high to moderate level of EBP competence. These educators assessed EBP competence to be highest in the area of "Implementation of EBP" (mean 3.71, *SD* 0.26), following with the "Retrieval and production of information" area (mean 3.38, *SD* 0.36) and finally "Guiding student critical thinking" (mean 3.02, *SD* 0.28). At the item level, these educators most highly evaluated their competence in using evidence in their own teaching (mean 3.86, *SD* 0.34); their lowest evaluation was in guiding the student to identify and critically assess the operating practices of the work community (mean 2.96, *SD* 0.32). Profile B educators had graduated on average in 2006, more than half of them (62%) had educator education in health sciences, and the majority (71%) was responsible for healthcare education and worked at universities of applied sciences (76%). 75% of Profile B educators had completed a master's degree, and 68% worked as lecturers.

Profile C included 19% of the educators in the study ($n = 82$), with the lowest level of EBP competence among the total sample. Profile C educators evaluated their EBP competence to be highest in "Guiding student critical thinking" (mean 3.26, *SD* 0.49), following with "Implementation of EBP" (mean 2.91, *SD* 0.37) and finally with the lowest evaluation in "Retrieval and production of knowledge" (mean 2.72, *SD* 0.43). At the item level, the educators evaluated their highest competence in guiding the student to identify and critically evaluate their own activities (mean 3.29, *SD* 0.50), while their lowest evaluation was in guiding the student to identify and critically evaluate the operating practices of the work community (mean 2.54, *SD* 0.67). The Profile C educators graduated on average in 2003; more than half (58%) had completed vocational educator education and only 6% had a doctoral degree. Educators working in vocational education accounted for 37% of these participants. Profile C educators mostly worked as lecturers (62%), and this profile had the highest percentage of social education educators (43%).

4 | DISCUSSION

The purpose of this study was to identify and describe the profiles of EBP competence of educators working in the social, health and rehabilitation sectors and to establish relevant background factors. Since more than half of all respondents ranked at the level of high competence and, in addition, almost 30% ranked at the level of moderate competence, the majority of educators rated their own competence with EBP favourably. This is an encouraging result when compared to previous research which found that educators' EBP competence was reported to be average (Mehrdad et al., 2012). Koivula et al. (2011) found that the use of research in education among the educators was generally fairly good, and Mikkonen, Koskinen, et al. (2019), Mikkonen, Koivula, et al. (2019) reported that educators did use evidence in their daily work. The results of our study made it possible to establish three EBP competence profiles of social, health and rehabilitation sector educators. Profile A and B educators had almost identical background information: most of them were university graduates; they had completed educator qualifications in universities of health sciences; and they currently worked as lecturers at one of the Finnish universities of applied sciences. Profile C educators' background information differed from that of Profile A and B educators in that the majority of the former were social sector educators, had undergone vocational educator education and had graduated appreciably earlier than their peers in Profiles A and B. The teaching of EBP varies greatly from country to country, and in many countries, it is integrated differently into curricula (Skela-Savič et al., 2020). In Finland, EBP is an important part of educator education in the health sciences and it is well reflected in all the curricula of the six Finnish university health sciences (Mikkonen, Koivula, et al., 2019); thus, it can also be reasonably expected to affect the level of competence of educators. The concept of EBP is unlikely to have been used in education when most of the educators in Profile C graduated. For this reason, it is important that educators' continuous education takes into account EBP and develops educators' competence in this regard. Areas of core competencies in EBP for clinicians and students can help improve EBP teaching and learning programs and EBP knowledge and skills (Melnyk et al., 2014, Albarqouni et al., 2018).

The competencies of EBP for health and social services educators were also explained by the current education organization and the current professional field of the educators. Profiles A and B in this study included mostly educators from the health and rehabilitation sectors, whereas Profile C included mostly social sector educators. In the health sector, the concept of EBP has a longer history (see Mackey & Bassendowski, 2017) and is used more than in the social sector (Grady et al., 2018). In addition, university of applied sciences curricula include EBP competence (Holopainen et al., 2019), and educators are more involved with the topic when compared to educators teaching in vocational colleges. These may be among the chief reasons for the distribution of educator education organizations and the field of education in the profiles. Profile C educators estimated that they can guide students' critical thinking better than Profile B educators. In previous studies, students have found EBP challenging and difficult to understand, although they considered it necessary for their work (Brooke et al., 2015). Nurses (Stokke et al., 2014) and physiotherapists (Scurlock-Evans et al., 2014) have also expressed a positive attitude about EBP, although they were unsure of their own EBP knowledge and skills (Thorsteinsson, 2013, Scurlock-Evans et al., 2014) and did not believe they are meeting the EBP competencies' requirements (Melnyk et al., 2018) and thus engaged in EBP infrequently (Stokke et al., 2014). In addition, nurses rarely used research results in their work (Berland et al., 2012), finding their own knowledge and skills insufficient to do so (Shu et al., 2019; Ubbink et al., 2013). In Profile C, most of the educators were master's graduates, but they had also undergone vocational educator education. It is possible that the educators of Profile C also found this aspect of the survey to be the most familiar and practical for them.

According to their evaluations, a majority of respondents can explain the importance of EBP in the health and social services sector and identify the EBP process well (this is despite Profile C scoring the lowest in EBP competence evaluation). The results of this study support previous research results that educators have been found to be positive about EBP (Mehrdad et al., 2012, Scurlock-Evans et al., 2014) and using evidence-based information in their teaching (Mikkonen, Koivula, et al., 2019; Mikkonen, Koivula, et al., 2019; Mikkonen, Koskinen, et al., 2019; Salminen et al., 2013). Koivula et al. (2011) reported that educators who have published research articles and participated in research and development also used evidence in nursing education. It has been established that even short periods of continuing education significantly increase EBP competence and understanding of the need for EBP in healthcare systems (Fiset et al., 2017; Keib et al., 2017; Nichols, 2017; Ruzafa-Martínez et al., 2016). It should also be noted that most of the educators in Profile C were social educators, while the majority of educators in Profiles A and B were health science educators, to whom the concept of EBP is more familiar.

Although educators from the social, health and rehabilitation sectors felt that their EBP competence was mainly good, there are areas of their competence that they can still profitably develop. Profile C educators rated their competence in "Retrieval and production of knowledge" as worse than those in Profiles A and B. All of the participants rated their competence in continuously following scientific publications in order to develop their competence at a low level. Kuivila et al. (2020) discovered that educator candidates believed that today's health science educator must be able to obtain up-to-date evidence and make use of different databases and information channels in their daily work. In addition, educators must have the skills to produce evidence themselves, either as part of a research group or in project-based work (Kuivila et al., 2020). Educators' work can undoubtedly be burdensome (Nilsson et al., 2017; Saaranen et al., 2020), and lack of time forces educators to prioritize their duties; this commonly leads educators to have less follow-up on scientific publications than might otherwise be the case. However, Profile A educators assert that they are able to search for and produce information on all relevant areas of expertise, and consequently their level of competence was high. It has been found that doctoral

nursing educators make more use of scientific studies than educators with master's degrees (Koivula et al., 2011).

4.1 | Limitations

The response rate of the participants was only 18%. Data collection took place during the national autumn holidays in Finland, with a different timetable in place throughout the country. That may possibly have caused data collection delays and contributed to the low response rate. The study was connected to a major Ministry of Education and Culture project, which included many questionnaires and required a lot of time and commitment from the educators who were participating. However, the number of observation units recommended for quantitative research was sufficient to reach a moderate effect size, and the STROBE Statement checklist to improve transparency and reliability was used to write the study report (von Elm et al., 2007). The instrument used in this study showed three factor model, of which the third factor loaded only two items. The recommendation in exploratory factor analysis is that the minimum number of items is three, for which reason we recommend that the instrument would be further developed in the follow-up study (Munro, 2005). Eventually, the instrument used in the study was a self-assessment instrument, which possibly causes result bias since participants' competence was not assessed by other observers.

5 | CONCLUSIONS

EBP competence is part of an international framework of regulations aimed at sustaining and improving patient-centred care; familiarity and confidence with EBP are highly relevant not only for healthcare organizations but also for social, health and rehabilitation sector education. In this study, we have found that educators working in the social, health and rehabilitation sectors have evaluated their EBP competence levels from moderate to high. University-graduated educators with health science qualifications and educators working in universities of applied sciences had higher competence in EBP. Based on the results, we strongly recommend that social, health and rehabilitation sector educators should seek to achieve—at the least—a master's degree in health sciences, and obtain their educators' accreditation in health sciences education. We further recommend that the leadership of vocational colleges should ensure continuous education in EBP for their own educators and offer them opportunities to participate in research and development projects to enhance their continued EBP competence development. Finally, social sector educators' higher degree education needs to be further developed with an emphasis on the importance of EBP in professional conduct. Our findings show that for Profile C educators, the importance and processes of EBP are relatively unknown concepts, and it is consequently challenging for them to seek, obtain and disseminate scientific knowledge. Further studies are needed to address the impact of continuing education on the competence and development of the EBP of social, health and rehabilitation educators. In the long term, the development and promotion of the competencies of EBP for educators in the social, health and rehabilitation services will also enable students to develop their own secure and flexible EBP competencies, which are necessary for ensuring the high quality of social and health services.

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CONFLICT OF INTEREST

No conflict of interest has been declared by the authors.

DATA AVAILABILITY STATEMENT

All data generated during this study are included in this published article.

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REFERENCES

Act on medical research 488/1999. (1999). FINLEX Data Bank. https://www.finlex.fi/fi/laki/ajantasa/1999/19990488

Albarqouni, L., Hoffmann, T., Straus, S., Olsen, N. R., Young, T., Ilic, D., Shaneyfelt, T., Haynes, R. B., Guyatt, G., & Glasziou, P. (2018). Core competencies in evidence-based practice for health professionals: Consensus statement based on a systematic review and Delphi survey. *JAMA Network Open.*, *1*(2), e180281.

Berland, A., Gundersen, D., & Bentsen, S. B. (2012). Evidence-based practice in primary care–An explorative study of nurse practitioners in Norway. *Nurse Education in Practice*, *12*(6), 361–365. https://doi.org/10.1016/j.nepr.2012.05.002

Brooke, J., Hvalič-Touzery, S., & Skela-Savič, B. (2015). Student nurse perceptions on evidence-based practice and research: An exploratory research study involving students from the university of Greenwich, England and the faculty of health care Jesenice. *Slovenia. Nurse Education Today*, *35*(7), e6–e11. https://doi.org/10.1016/j.nedt.2015.02.026

Considine, J., & McGillivray, B. (2010). An evidence-based practice approach to improving nursing care of acute stroke in an Australian emergency department. *Journal of Clinical Nursing*, *19*, 138–144. https://doi.org/10.1111/j.1365-2702.2009.02970.x

Data protection act (1050/2018). (2018). FINLEX Data Bank. https://www.finlex.fi/fi/laki/alkup/2018/20181050

Declaration of Helsinki (2013). Ethical principles for medical research involving human subjects. *JAMA*, *310*(20), 2191–2194.

Finotto, S., Carpanoni, M., Turroni, E. C., Camellini, R., & Mecugni, D. (2013). Teaching evidence-based practice: Developing a curriculum model to foster evidence-based practice in undergraduate student nurses. *Nurse Education in Practice*, *13*(5), 459–465. https://doi.org/10.1016/j.nepr.2013.03.021

Fiset, V. J., Graham, I. D., & Davies, B. L. (2017). Evidence-based practice in clinical nursing education: A scoping review. *Journal of Nursing Education*, *56*(9), 534–541. https://doi.org/10.3928/01484834-20170817-04

Government Decree on Polytechnics 1129/2014. https://www.finlex.fi/fi/laki/alkup/2014/20141129#Pidp447022048

Grady, M. D., Wike, T., Putzu, C., Field, S., Hill, J., Bledsoe, S. E., Bellamy, J., & Massey, M. (2018). Recent Social Work Practitioners' understanding and use of evidence-based practice and empirically supported treatments. *Journal of Social Work Education*, *54*(1), 163–179. https://doi.org/10.1080/10437797.2017.1299063

Holopainen, A., Siltanen, H., Tuomikoski, A., Tuomisto, S., & Parisod, H. (2019). Evidence-based practices in Finland based on nurse professionals descriptions. *International Journal of Evidence-Based Healthcare*, *17*, S65–S67. https://doi.org/10.1097/XEB.0000000000000181

Jordan, Z., Lockwood, C., Munn, Z., & Aromataris, E. (2019). The updated Joanna Briggs institute model of evidence-based healthcare. *International Journal of Evidence-Based Healthcare*, *17*(1), 58–71. https://doi.org/10.1097/XEB.0000000000000155

Keib, C., Cailor, S., Kiersma, M., & Chen, A. (2017). Changes in nursing students' perceptions of research and evidence-based practice after completing a research course. *Nurse Education Today*, *54*, 37–43. https://doi.org/10.1016/j.nedt.2017.04.007

Koivula, M., Tarkka, M.-T., Simonen, M., Katajisto, J., & Salminen, L. (2011). Research utilisation among nursing teachers in Finland: A national survey. *Nurse Education Today*, *31*(1), 24–30. https://doi.org/10.1016/j.nedt.2010.03.008

Koskimäki, M., Mikkonen, K., Kääriäinen, M., Lähteenmäki, M.-L., Kaunonen, M., Salminen, L., & Koivula, M. (2020). Development and testing of the EduProDe scale for social and health care educators´ continuing professional development. *Nurse Education Today*, *98*, 104657.

Kuivila, H.-M., Mikkonen, K., Sjögren, T., Koivula, M., Koskimäki, M., Männistö, M., Lukkarila, P., & Kääriäinen, M. (2020). Health science student teachers' perceptions of teacher competence: A qualitative study. *Nurse Education Today*, *84*, 104210. https://doi.org/10.1016/j.nedt.2019.104210

Lam, K., & Schubert, C. (2019). Evidence–based practice competence in nursing students: An exploratory study with important implications for educators. *Worldviews on Evidence-Based Nursing*, *16*(2), 161–168. https://doi.org/10.1111/wvn.12357

Mackey, A., & Bassendowski, S. (2017). The history of evidence-based practice in nursing education and practice. *Journal of Professional Nursing*, *33*(1), 51–55. https://doi.org/10.1016/j.profnurs.2016.05.009

Männistö, M., Mikkonen, K., Kuivila, H., Koskinen, C., Koivula, M., Sjögren, T., Salminen, L., Saaranen, T., Kyngäs, H., & Kääriäinen, M. (2020). Health and social care educators' competence in digital collaborative learning: A cross-sectional survey. *Sage Open*, *10*(4), 215824402096278. https://doi.org/10.1177/2158244020962780

Mehrdad, N., Joolaee, S., Joulaee, A., & Bahrani, N. (2012). Nursing faculties' knowledge and attitude on evidence-based practice. *Iranian Journal of Nursing and Midwifery Research*, *17*(7), 506–511.

Melnyk, B. M., Gallagher-Ford, L., Long, L. E., & Fineout-Overholt, E. (2014). The establishment of evidence-based practice competencies for practicing registered nurses and advanced practice nurses in real-world clinical settings: Proficiencies to improve healthcare quality, reliability, patient outcomes, and costs. *Worldviews of Evidence Based Nursing*, *11*(1), 5–15.

Melnyk, B. M., Gallagher-Ford, L., Zellefrow, C., Tucker, S., Thomas, B., Sinnott, L. T., & Tan, A. (2018). The First U.S. study on nurses' evidence-based practice competencies indicates major deficits that threaten healthcare quality, safety, and patient outcomes. *Worldviews of Evidence Based Nursing*, *15*(1), 16–25.

Mikkonen, K., Koivula, M., Sjögren, T., Korpi, H., Koskinen, C., Koskinen, M., Kuivala, H.-M., Lähteenmäki, M.-L., Koskimäki, M., Mäki-Hakola, H., Wallin, O., Saaranen, T., Sormunen, M., Kokkonen, K.-M., Kiikeri, J., Salminen, L., Ryhtä, I., Elonen, I., & Kääriäinen, M. (2019). *Social, health care, and rehabilitation educators' competence and continuous development (in Finnish). TerOpe key project*. Acta Universitatis Ouluensis F Scripta Academica 14. University of Oulu.

Mikkonen, K., Koskinen, M., Koskinen, C., Koivula, M., Koskimäki, M., Lähteenmäki, M.-L., Mäki-Hakola, H., Wallin, O., Salminen, L., Sormunen, M., Saaranen, T., Kuivala, H.-M., & Kääriäinen, M. (2019). Qualitative study of social and health care educators' perceptions of competence in education. *Health and Social Care in the Community*, *27*(6), 1555–1563.

Mikkonen, K., Ojala, T., Sjögren, T., Piirainen, A., Koskinen, C., Koskinen, M., Koivula, M., Sormunen, M., Saaranen, T., Salminen, L., Koskimäki, M., Swedish, H., Lähteenmäki, M. L., Wallin, O., Mäki-Hakola, H., & Kääriäinen, M. (2018). Competence areas of health science teachers–a systematic review of quantitative studies. *Nurse Education Today*, *70*, 77–86. https://doi.org/10.1016/j.nedt.2018.08.017

Mullen, E. J. (2014). Evidence-based knowledge in the context of social practice. *Scandinavian Journal of Public Health*, *42*(13), 59–73. https://doi.org/10.1177/1403494813516714

Munro, B. H. (2005). *Statistical Methods for Health Care Research* (5th ed). Lippincott Williams, Wilkins.

Nichols, A. (2017). Changes in knowledge, skills, and confidence in field-work educators after an evidence-based practice short course. *Open Journal of Occupational Therapy*, *5*(1), 1–14. https://doi.org/10.15453/2168-6408.1204

Nilsson, M., Blomqvist, K., & Andersson, I. (2017). Salutogenic resources in relation to teachers' work-life balance. *Work*, *56*(4), 591–602.

Orta, R., Messmer, P., Valdes, G., Turkel, M., Fields, S., & Cardenas, C. (2016). Knowledge and competency of nursing faculty recarding evidence-based practice. *The Journal of Continuing Education in Nursing*, *47*(9), 409–419.

Patelaroy, A. E., Patelaroy, E., Brokalaki, H., Dafermos, V., Thiel, L., Melas, C. D., & Koukia, E. (2013). Current Evidence on the attitudes, knowledge and perceptions of nurses regarding evidence-based practice implementation in European community settings: A systematic review. *Journal of Community Health Nursing*, *30*(4), 230–244. https://doi.org/10.1080/07370016.2013.838501

RCR, Advisory Board on Research Ethics (2012). *Good scientific Practice and Dealing with Suspicions of Violation in Finland*. http://www.tenk.fi/sites/tenk.fi/files/HTK_ohje_2012.pdf

Revello, K., & Gallo, A. (2012). Implementing and evidence-based practice protocol for prevention of catheterized associate urinary tract infection in a progressive care unit. *Journal of Nursing Education Practice*, *3*, 99–107.

Ruzafa-Martínez, M., López-Iborra, L., Barranco, D. A., & Ramos-Morcillo, A. J. (2016). Effectiveness of an evidence-based practice (EBP) course on the EBP competence of undergraduate nursing students: A quasi-experimental study. *Nurse Education Today*, *38*, 82–87. https://doi.org/10.1016/j.nedt.2015.12.012

Saaranen, T., Kankkunen, P., & Juntunen, A. (2020). Well-being at work and promotion of health teachers–employee and his work perspective. *Nursing Science*, *32*(3), 154–165.

Salminen, L., Stolt, M., Koskinen, S., Katajisto, J., & Leino-Kilpi, H. (2013). The competence and the cooperation of nurse educators. *Nurse*

Education Today, *33*(11), 1376–1381. https://doi.org/10.1016/j.nedt.2012.09.008

Scurlock-Evans, L., Upton, P., & Upton, D. (2014). Systematic review evidence-based practice in physiotherapy: A systematic review of barriers, enablers and interventions. *Physiotherapy*, *100*(3), 208–219. https://doi.org/10.1016/j.physio.2014.03.001

Shu, L., Meijuan, C., & Xuejiao, Z. (2019). Evidence-based practice: Knpwledge, attitudes, implementation, facilitators, and barriers among community nurses–systematic review. *Medicine*, *98*(39), e17209.

Skela-Savič, B., Gotlib, J., Panczyk, M., Patelarou, A. E., Bole, U., Ramos-Morcillo, A. J., Finotto, S., Mecugni, D., Jarosova, D., Patelarou, E., Dolezel, J., & Ruzafa-Martínez, M. (2020). Teaching evidence-based practice (EBP) in nursing curricula in six European countries–A descriptive study. *Nursing Education Today*, *94*, 104561. https://doi.org/10.1016/j.nedt.2020.104561

Stokke, K., Olsen, N. R., Espehaug, B., & Nortvedt, M. W. (2014). Evidence based practice beliefs and implementation among nurses: A cross-sectional study. *BMC Nursing*, *13*(8), 1–10. https://doi.org/10.1186/1472-6955-13-8

Thorsteinsson, H. S. (2013). Icelandic nurses' beliefs, skills, and resources associated with evidence-based practice and related factors: A national survey. *Worldviews on Evidence-Based Nursing*, *10*(2), 116–126. https://doi.org/10.1111/j.1741-6787.2012.00260.x

Töytäri, A., Piirainen, A., Tynjälä, P., Vanhanen-Nuutinen, L., Mäki, K., & Ilves, V. (2016). Higher education teachers' descriptions of their own learning: A large-scale study of Finnish universities of applied sciences. *Higher Education Research and Development*, *35*(6), 1284–1297. https://doi.org/10.1080/07294360.2016.1152574

Ubbink, D. T., Guyatt, G., & Vermeulen, H. (2013). Framework of policy recommendations for implementation of evidence-based practice: A systematic scoping review. *British Medical Journal Open*, *3*, e001881. https://doi.org/10.1136/bmjopen-2012

von Elm, E., Altman, D. G., Egger, M., Pocock, S. J., Gotzsche, P. C., & Vandenbroucke, J. P. (2007). The strengthening the reporting of observational studies in epidemiology (STROBE) statement: Guidelines for reporting observational studies. *Annals of Internal Medicine*, *147*(8), 573–577. https://doi.org/10.1097/EDE.0b013e3181577654

WCPT, World Confederation for Physical Therapy (2018). *Evidence Based Physiotherapy*. The Confederation. https://www.erwcpt.eu/education/evidence_based_physiotherapy_evidence_and_research

WHO (2016). *The Nurse Educator Core Competencies*. www.who.int/hrh/nursing_midwifery/nurse_educator050416.pdf

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