

Practice educators' emphasis on research in supervision of occupational therapy students

Short title: Research in occupational therapy supervision

Kjersti Velde Helgøy^{1*}, Jens-Christian Smeby², Tore Bonsaksen^{3, 4}

¹Center of Diakonia and Professional Practice, VID Specialized University, Oslo, Norway

²Centre for the Study of Professions, OsloMet – Oslo Metropolitan University, Oslo, Norway

³Department of Health and Nursing Science, Faculty of Social and Health Sciences, Inland Norway University of Applied Science, Elverum, Norway

⁴Faculty of Health Studies, VID Specialized University, Sandnes, Norway

*Corresponding author

E-mail: kjersti.velde.helgoy@vid.no (KVH)

Abstract

Background: One approach to promote students' use of research in future practice involves integrating students' research use in supervision during practice placements. Studies examining this aspect of supervision in practice placements are lacking.

Aim: To explore how practice educators perceive and emphasize research in their supervision of occupational therapy students during practice placements.

Materials and methods: A qualitative study was conducted. A purposive sample was recruited, consisting of participants from community-based health services and hospitals in Norway. We conducted three focus groups and one individual interview with occupational therapists ($n = 9$). The qualitative data analysis was based on interpretive description.

Results: We identified four integrative themes: 'emphasis on research in supervision of students'; 'practice educators' research competence and awareness of research'; 'institutionalization of research use in everyday practice'; and 'communication and cooperation between education and practice regarding research'. Despite highlighting several benefits of research use, the practice educators focus rarely on students' research use in practice placements.

Conclusions and significance: Cooperation between practice educators and faculty members regarding students' training in research use seems essential. Practice educators may need additional training in how research should be emphasized in supervision.

Keywords: occupational therapy education, research-based education, research use, supervision.

Introduction

Fostering a research culture for future practitioners may be promoted through students' engagement in research during practice placements [1]. Occupational therapy students are expected to use evidence to inform their interventions [2]; moreover, developing their research skills during the education programme may strengthen their future evidence-based practice (EBP) [3]. EBP entails making professional decisions based on systematically retrieved research evidence, experiential knowledge and patient preferences in the given situation [4, 5]. EBP is described as imperative for ensuring patient safety and quality of health care [6]. During their education programme, occupational therapy students should therefore acquire the competence to use EBP [7], and the teaching of EBP should be integrated into practice settings to facilitate best practice [4]. Hence, practice educators' attitudes and behaviour regarding the use of research will likely affect students' future professional practice. However, the students' education programme and the practice are different contexts characterized by different aims and concerns and may be perceived as two distinct communities of practice. Wenger's theory of communities of practice [8] is relevant for this study, as it suggests that learning is situated and entails taking part in social practices [9]. This concept has been used in order to understand how people learn in various institutions and workplaces and to understand how students learn from more experienced professionals [9]. In this theory, Wenger [8] describes communities of practice as characterized by mutual engagement, a joint enterprise and a shared repertoire. The findings are discussed in light of this theory.

Occupational therapists are under pressure to demonstrate the efficacy of their interventions [10]. Existing research indicates that occupational therapy may be effective for addressing a range of problems, for example the performance of everyday life activities following stroke [11], overall function after hip fracture surgery [12], musculoskeletal

problems related to the forearm, wrist and hand [13], and mental health problems [14]. However, despite the availability of evidence, occupational therapists have reported that difficulty utilizing the research literature is a barrier toward its implementation in practice [15].

Among occupational therapists, positive attitudes toward research have been identified in previous reviews [16, 17]; nevertheless, findings indicate that occupational therapists lack confidence in appraising research [16], and that they implement research evidence infrequently in their daily practice [17, 18]. Recently, several studies have investigated the use of research among occupational therapists [18-26]. While occupational therapists have been shown to have positive attitudes toward EBP implementation [22, 24], barriers include lack of awareness regarding the use of EBP [24] and lack of EBP skills [22]. Education level seems to influence the degree to which occupational therapists rely on research to inform practice [19, 25], and the literature also suggests differences between professional groups. Compared to professionals from other health care disciplines, occupational therapists have been found to have lower confidence and more anxiety regarding research [26].

Like occupational therapists, students in occupational therapy and physiotherapy have been found to share positive attitudes toward research [27-32]; however, despite students' willingness to practice EBP, lack of time and practice educators not practising EBP have been perceived as barriers [28]. A limited number of studies have examined the role of research and EBP in occupational therapy practice placements [1, 27, 29, 31, 33, 34], and learning EBP through practice placements has been highlighted as important [27, 29]. Participation in a journal club in which students discuss research findings during practice placements is one approach to increase students' ability to locate and appraise research articles [31]. Further, participation in small-scale research projects during practice placements was found to be meaningful for occupational therapy students [34].

Supervision in practice placement thus represents one way to bridge the gap between students' knowledge and their application of that knowledge in practice [35]. However, a lack of communication with practice educators regarding how to facilitate EBP has been identified in nursing, occupational therapy and physiotherapy, raising concerns regarding the quality of EBP education across practice placements [33]. As such, there is an apparent disconnect between the expectation that students learn and value EBP and the lack of role models among their supervisors in practice placements. It is therefore critical that practice educators demonstrate effective use of research evidence for professional decision-making, to ensure that occupational therapy students learn how to apply such evidence in their own practice [2]. Role models in both academic and practice areas are important; however practice' educators should also support and challenge students to demonstrate how EBP knowledge learnt in the academic setting can be used in practice placements [36]. EBP can be taught in practice placements, where students should be encouraged to engage in discussions, reflection and 'problem-solving' [37]. Since occupational therapists work in different areas of practice, we wanted to include occupational therapists working in both hospitals and community-based health services to explore supervision in different contexts. Studies specifically investigating practice educators' supervision of occupational therapy students' research use is lacking; as such, this study aimed to explore how practice educators perceived and emphasized research in their supervision of occupational therapy students during practice placements.

Methods

We used a qualitative design with empirical data from three focus groups and one individual interview. The research strategy 'Interpretative description' guided the analysis of both the focus groups and the individual interview. Interpretive description is an inductive approach inspired by ethnography, grounded theory and phenomenology [38, p. 20]. It is a research strategy suitable for studying phenomena in practical disciplines, such as nursing, teaching

and management [39], as it is driven by the imperative to seek better ways to serve one's disciplinary purpose [38, p. 12].

Participants

A purposive sample was recruited from municipal health services ($n = 4$) and hospitals ($n = 5$). Participants were recruited from four different workplaces and the inclusion criteria were that they were occupational therapists and had experience supervising occupational therapy students. Managers in the health care services were contacted, and they recruited the occupational therapists. Occupational therapists with experience supervising students were encouraged to contact the researchers via email should they wish to participate in the study. In total, 9 persons between 30 and 49 years of age participated (Table 1).

[INSERT TABLE 1 ABOUT HERE]

Data collection

We conducted three focus groups inspired by Malterud and Krueger [40, 41] and one individual interview inspired by Malterud [42]; all were conducted during the spring of 2020. The study was planned as a focus group study, however, at one of the hospitals only one participant expressed interest in participating. Since we considered this participant to have valuable insights with relevance to our study aim, we included this interview in the study. The size of the focus groups varied between two and four participants (Table 1). To ensure homogeneity, the participants were placed in groups with participants from the same workplace. We did not mix participants from hospitals and community-based health services. All the participants were occupational therapists, had experience as being a supervisor and

had the same level of education. This kind of homogeneity is recommended for obtaining a good flow in the discussion [40, 41]. Moreover, heterogeneity among participants is also an important aspect of group composition in focus groups, ensuring contrasting opinions [40, 41]. Participants in our study differed with regards to age, length of professional experience and experience as supervisors. This ensured heterogeneity in each focus group, as did the fact that we recruited participants from both hospitals and community-based health services. The focus groups lasted between 61 and 88 minutes, and a digital voice recorder was used to record the focus groups. The individual interview lasted 61 minutes and a digital voice recorder was used. The focus groups and the interview were held at a convenient time and location for the participants such as meeting rooms at their workplace. The participants received refreshments during the focus groups and the interview. All participants provided written consent before participating in the study, and all completed a brief questionnaire about their background. A thematic interview guide was developed based on the aim of this study and on previous research on research use, research utilization and EBP among occupational therapists and students. It was also inspired by Krueger [41, p. 7-8], who recommends organizing focus group interview guides in a logical sequence: the introductory questions help the participants start talking and thinking about the topic, and these questions are then followed by more focused and specific questions. The following topics were covered in the interview guide: 1) perceptions of research-based education; 2) experiences and expectations regarding students' use of research in practice placement; 3) experiences with research as a focus in supervision; 4) research use in daily practice; and 5) research-based knowledge and future professional practice. The first author developed the interview guide in cooperation with the two other authors. This interview guide was also used during the individual interview. At the end of the focus groups and the individual interview, a short summary was

presented to the participants. The participants were asked if they wanted to add something or clarify any points.

The authors are faculty members at different educational institutions, and two of them are in occupational therapy departments (KVH and TB). They have previous experience as occupational therapists and experience teaching and supervising occupational therapy students. All authors were interested in the topic of research-based education and were experienced in conducting focus groups. The participants in the focus groups were briefly introduced to the moderator and co-moderator and the purpose of the study before the focus groups started. The researchers' preconceptions about the issues discussed were not disclosed to the participants. All focus groups were moderated by KVH and co-moderated by two different assistant moderators. The individual interview was conducted by KVH.

Ethical considerations

The Norwegian Centre for Research Data (NSD) approved the study (ID number 845364). Participation in the study was voluntary and the participants were informed that they had the opportunity to withdraw from the study at any time without consequence. Written consent was obtained from all the participants, and all transcripts and notes were kept anonymous.

Analysis

Previous research informed the development of the interview guide and, as noted earlier, interpretive description guided the data analysis for both the focus groups and the individual interview [38]. Co-moderators took notes during all focus groups. After each focus group, the moderator and co-moderator engaged in a short debriefing session. The individual interview was conducted by an interviewer and brief notes were taken during the interview. As a first

step, the first author and another researcher performed the analyses separately. These two separate analyses were followed by a joint analysis in which the two researchers discussed and compared their interpretation of the data and agreed on patterns and themes. Word processing was used to analyse the data, and the analysis consisted of a series of operations inspired by Thorne [38] and Lomborg [39]: 1) reading the transcripts many times and being as open-minded as possible; 2) writing marginal remarks by consistently questioning the text and pointing out important points, potential themes or patterns; 3) condensing; 4) broad coding; 5) comparing and contrasting within interviews with similar participant categories; and 6) comparing and contrasting between interviews with different participant categories. Comparing and contrasting within and between interviews enabled the generation of patterns and themes within the entire data set.

The analysis was characterized by a back and forth process that involved ‘taking things apart and putting them back together again’, inspired by Thorne [38]. During the analysis, the first author frequently returned to the transcripts to ensure that the interpretations reflected the data. To ensure rigor and credibility in the analysis, the authors stepped away from the data periodically to ask questions such as: ‘What am I seeing?’, ‘Why am I seeing that?’, ‘How else might I understand this aspect of data?’, ‘What might I not be seeing?’ and ‘What are they not telling me?’ [38, p.174, 178-179]. This approach prompted the authors to see the data through ‘alternative lenses’ and to acknowledge that there was much more to be seen [38, p. 174].

Results

Overall, study participants were positive toward research. They described benefits regarding research use, such as providing professional credibility, making the profession more visible, and enabling them to argue their point of view. The participants were also positive toward

students' use of research. Nevertheless, the main finding in our study was that the participants rarely emphasized research in their supervision. Moreover, they reported that the use of research was only integrated in their everyday practice to a limited degree. Across the focus groups and the interview, we identified four overall themes (as illustrated in Figure 1): 'emphasis on research in supervision of students'; 'practice educators' research competence and awareness of research'; 'institutionalization of research use in everyday practice'; and 'communication and cooperation between education and practice regarding research'. The themes 'practice educators' research competence and awareness of research'; 'institutionalization of research use in everyday practice'; and 'communication and cooperation between education and practice regarding research' influenced the theme 'emphasis on research in supervision of students'.

[INSERT FIGURE 1 ABOUT HERE]

Emphasis on research in supervision of students

All the participants were positive toward research in professional practice and pointed to benefits of students' research use. However, when supervising students, the participants placed more emphasis on the students' appearance, initiative and interest in learning. They highlighted the importance of working with these central aspects - including the students' communication skills - in supervision. Indeed, one participant commented that students' research skills were secondary. The participants did not emphasize research in supervision, except when the initiative came from the students. Further, some participants in the focus groups discussed the importance of students being professionally mature, and that this maturity encompassed the development of critical thinking and research skills. Despite this, however, all the participants highlighted that students' research use as a basis for developing

interventions was not an expectation. When the participants discussed this lack of expectation, several expressed that they did not facilitate discussions with their students regarding research. Further discussions in the focus group indicated that participants' perceptions of the occupational therapy programme's lack of expectations regarding students' research use in practice placements influenced their own emphasis on research in supervision. Variation regarding students' interest in research was also expressed, and some participants noted that they felt their supervision should mainly focus on developing students' professional skills. Participants discussed further that they did not communicate clearly to the students that searching for and using relevant research was part of developing their professional role. One focus group participant expressed this lack of expectations regarding students' research use as follows:

'Research is way down on the list. Except from the student's own goals for practice placements, I have no requirement or expectation that they will use it [research], neither in treatment nor interventions.' (P2, Focus group 3)

While the participants did not require or expect that students use research during practice placements, they all highlighted the importance of conveying to the students that they do have allotted time to search for research literature. In their experience, students were eager to learn and wanted to take part in all aspects of professional work during practice placements. The participants argued that students need to consider research as part of their practice placements. They also discussed the connection between their own research use and its influence on supervision. One focus group participant expressed this as follows:

'I've been thinking, have I had too little focus on it [research in supervision] myself? It is perhaps logical, since we have no more focus on it in our practice.' (P2, Focus group 3)

In the discussions, there seemed to be agreement that a lack of focus on research in the participants' work influenced their lack of focus on research in supervision. Despite rarely focusing on research in supervision, all participants noted that they wanted to increase their emphasis on research in supervision. They expressed that they wanted to challenge their future students to search for articles relevant to their practice. Implementing research in practice was described as a means to increase the quality of occupational therapy practice. They experienced that having students in practice placements improves their practice, as the students' many questions about their professional work make the therapists reflect critically on their own practice.

Practice educators' research competence and awareness of research

The participants' research use and emphasis on research in supervision were described as dependent on individual factors, such as competence, awareness of research, interest, initiative and priorities. In the focus groups, the participants discussed how individual factors influenced both the occupational therapists' research use and the focus on research in supervision. One participant working in community-based health services explained how individual factors influenced supervisors' research use:

'It is person-dependent, whether one uses research and whether research is a field of interest.' (PI, Focus group 2)

In this focus group, the participants discussed how the use of research in one's work appeared largely person-dependent. They expressed the perception that there were individual differences among their colleagues around focusing on research in their work; some highlighted that colleagues with higher education levels seemed to be more focused on research. Nevertheless, they expressed that they had the impression that the majority focused on research only to a limited degree. The participants from both hospitals and community-

based services highlighted that they wanted to use research; however, they noted that their awareness of research was low. This lack of awareness was used to explain their own low level of research use and lack of expectations toward that of their students. One participant described it as follows:

'I just think we're not aware of it [research], to put it that way. It's not a special culture, ... but it is something we can become aware of. Change the situation and get more research into the supervision.' (PI, Interview I)

In one of the focus groups, a participant explained that her awareness regarding research was more present during her own time in training; as a student, she always included research articles in assignments to ensure that her work was of high quality. However, this awareness decreased after her professional experience increased. One of the other participants noted that this has been the case for her, as well, and expressed that it is difficult to avoid having experienced-based knowledge become dominant. Further, research was considered abstract by some, which may explain this lack of awareness; they nevertheless emphasized that their work should not solely be based on experience, as this in turn might lead their students to also become indifferent to research in their own practice. However, participants expressed that research was not routinely integrated into their interventions: searching for and reading research articles was only infrequently a part of the participants' work. One participant noted that it had been more than six months since she last conducted a literature search. Due to infrequent searching, the participants experienced a lack of competence and a need for assistance from a research librarian when searching for literature. Participants noted that students have better search skills and that they could learn these skills from observing the students. Some also felt that they did not have the skills to review and appraise the articles critically. One participant highlighted both lack of competence and lack of time as barriers. This participant explained that insecurity regarding research lead her to prioritize tasks she

was more comfortable with. Other participants explained their insecurity as being caused by lack of skills and infrequent practice related to searching for and reading research articles.

Participants felt that the degree to which they had been exposed to research during training influenced their ability to support students in developing their research skills in practice placements. Participants who recently completed their education had more exposure to research during their training than those who completed their education earlier. Some of the former described how, while they had focused on research in the beginning of their practice, this focus had decreased over time. Many of those who did not have training in research skills as part of their education still emphasized the importance of students focusing on research.

Institutionalization of research use in everyday practice

Institutional factors, such as a lack of system, lack of expectations from leaders, the culture at their workplace and norms regarding work effectiveness influenced the participants' research use. However, some of the participants working in hospitals used practice guidelines based on research in their work, and some had participated in small-scale development projects.

Practice guidelines for stroke treatment were mentioned as having influenced and changed the way some participants worked. They had also used research in the development of patient information materials, such as video clips demonstrating interventions. These participants highlighted that using research-based practice guidelines provided professional credibility, which gave them confidence in their professional practice. The use of practice guidelines based on the best available evidence in a specific area of practice was described as a way of practicing research-based. Aside from these examples, however, research was only integrated into their everyday practice to a limited extent.

Participants who worked in community-based health services expressed that they had some influence on how they organized their time; however, these participants highlighted that

although they wanted to use research, it was not prioritized over other tasks. One participant recalled using research one time, just after having completed the education programme:

'I think I have used it [research] once. I had just completed the education programme, and I sat at home. There was a young patient with a spinal cord injury who really affected me, and I started searching for research. But this was based on my own initiative at home.' (P2, Focus group 3)

This participant described an insecurity as newly educated that led her to search for research, as well as remembering having acquired research skills from the education programme.

Further, the participant recalled being aware of research as a student when writing assignments, but this awareness was no longer present during everyday practice. Some of the participants had similar experiences and explained that this was due to clear expectations regarding research during their training, but these same expectations were absent for professional practice. Several participants discussed how they had valued research in the period following graduation, however, as they gained more experience, their interventions became more experience-based. Some of the participants expressed that they also questioned their interventions, wondering if they were in accordance with the latest research. They highlighted that lack of time and limited opportunity to immerse oneself in research could explain this situation. The same factors were also brought forward to explain the decrease in research use following graduation. Participants from hospitals, in particular, experienced limited opportunities to organize their time, due to high workload and lack of influence on their workday. If they wanted to search for literature, they had to do so in their free time. All the participants had free access to a national online library where they could find practice guidelines, journals, and databases. Participants from hospitals had more resources and support regarding literature searches compared to participants from community-based services. Moreover, the awareness of their access to scientific databases at their workplace

seemed to vary, with participants from hospitals having greater awareness. Overall, the participants conducted literature searches to a limited extent; when they did so, they contacted librarians or a professional lead when they needed assistance.

Another institutional factor influencing the participants' research use centred on whether leaders and colleagues expected them to use research in their practice. Participants from a university hospital noted that their leaders encouraged them to engage in professional development projects, and that they could get assistance to conduct a literature search. Despite this encouragement, however, the lack of priority given to research was discussed among the participants. As one explained:

'There is a type of acceptance that we should be allowed to engage in professional development, so it can also be about us feeling that... how can we with good conscience prioritize professional development over patients?' (P1, Interview 3)

In this focus group, the participants discussed how using time to search for research would increase their colleagues' workload, which would lead to feelings of guilt. In the discussions, some of the participants highlighted that they were anxious that spending more time on research would lead to less time spent on their patients. A participant questioned whether structural changes might be required to enable more focus on research, since this currently depended on one's own priorities. Moreover, research was considered to be separate from the interventions, and was perceived more as something one did as part of a research project. Some of the participants described this as a dilemma around whether they should use time to immerse themselves in research or prioritize their patients. One participant expressed this dilemma as follows:

'It is easy to disregard professional development, as don't the patients come first?'
(P1, Focus group 2)

This quote illustrates how research was not perceived to be integrated with patient treatment or their daily routine. In this focus group, the participants discussed how they could engage more in research. One participant expressed that it is important to engage in projects relevant to their field. Due to a lack of time and resources, there seemed to be an agreement that organizational factors needed to change to enable research to be included in daily practice.

In contrast to the participants working in hospitals, participants who worked in community-based health services highlighted that they experienced a lack of expectations and encouragement regarding research by some leaders and colleagues, and this could influence their research use:

'I think of my colleagues, and our leader: What is she thinking? No, we just do what we've always done. She [the leader] asks few questions; in a way, she's satisfied if we've only visited them [the patients].' (P2, Focus group 3)

In this focus group, the participants expressed that their leaders' expectations regarding research use were unclear, and that they could have been challenged to a greater extent. Participants from other focus groups also expressed that they could have been challenged to a larger degree regarding research use in their work with patients. Some of the participants also highlighted that research use was dependent on the culture at their workplace. Further, participants working in community-based health services pointed to specific challenges regarding the increased norms around work effectiveness. They raised critical questions concerning how the service had developed, and noted that the current focus on work effectiveness had limited their ability to stay current with the latest research. In their experience, their patients did not receive interventions of sufficient quality, but the therapists were unable to use research as a consequence of work effectiveness.

Communication and cooperation between education and practice regarding research

Participants reported that, in their communication with faculty in the education programme, students' research use in practice placements was not an area of focus. Research was not emphasized in meetings with faculty members, nor in documents related to practice placements. The participants also noted that research was not highlighted in the supervisor seminar before students started their practice placements, nor when the faculty visited students during practice placements. One participant pointed to a lack of cooperation around students' use of research:

'I think that there is a lack of cooperation between the occupational therapy programme and the supervisors [regarding research]. What role does a supervisor have and what role does the education play?' (P4, Focus group 1)

This lack of cooperation regarding students' research use was discussed among the participants, and one suggested that developing a plan for cooperation between the education programme, supervisors and students might be useful. Several of the other participants also expressed the need for a clearer distribution of roles around supporting the students' research skills development and ensuring their use of research in practice placements. Some of the participants expressed that they wanted more quality assurance regarding the evaluation of students' research use in practice placements. Another participant pointed out that research as a part of supervision was absent from documents related to students' practice placements. This participant had searched through relevant documents in order to understand the supervisor's responsibility around addressing research with students during their practice placements:

'I had to check the practice documents because I had to see what it says about supervisors' responsibility [for addressing research], and not a word is mentioned.'

So, I think it is the student's responsibility. And perhaps there should be more awareness among practice educators? But at the same time, if there is too much focus on it, then we who work in community-based health services think that it will be too much work to have a student, right?' (P2, Focus group 3)

In this focus group, the participants discussed how research could be more present during practice placements. One participant expressed that they should challenge the students more in this respect. This participant suggested that it should be noted in the relevant documents that supervisors have a responsibility to ask about and follow-up on students' research skills during their practice placements. One of the other participants agreed and expressed that this was a better solution than having supervisors present research to the students; the latter solution might entail too much work and might discourage practitioners from taking on students in practice placement. Other participants noted that research should be emphasized in teaching at the campus as well as during practice placements. One of the participants argued that students should use research, as well as theory, in practice placements. Moreover, participants felt that, to more effectively prepare students, they should be challenged to find research relevant to the practice placements before they start.

The participants also expressed ambiguity regarding their role in the students' research skills training, though they perceived the education programme as having the main responsibility for preparing students to use research. As mentioned above, in the participants' experience, the students wanted to participate in all the client-centered work in their practice placements; as such, students did not always prioritize searching for and implementing research during this time. The participants discussed how to balance the time students spent on engaging with patients and on professional development. In this discussion, one of the participants expressed the need to ensure that students also use their time during practice placements to reflect on and justify their practice. Some of the other participants pointed out

that students reflect different levels of maturity, which might influence their engagement in research. However, the participants noted that they only rarely asked students to search for and implement research into the professional work. One participant from a hospital expressed this role ambiguity:

'I think that students should be part of as much as possible of the professional work, but that is not necessarily always right. The programme has more responsibility for students' training in research. Of course, we also have to work research-based - we can not only rely on our experience - but that is the part they [the students] constantly participate in, right? They [the students] follow us in our professional life, so naturally it takes place, I think. It is a pity if a student comes to this hospital, engages in the treatment of a few patients and otherwise they work behind the scenes [with research].' (P4, Focus group 1)

One of the participants also emphasized that students should learn more about assessment tools as preparation for practice. This participant highlighted the importance of using assessment tools based on research and tried to ensure in supervision that students obtained knowledge and skills related to assessment. In this participant's experience, students lacked knowledge about treatment guidelines and practice skills, and were not sufficiently prepared for professional work. Moreover, this participant had the impression that faculty members in the programme lacked knowledge about specific assessment tools in occupational therapy. The participant noted that academic learning and research was important, but it must be integrated with professional practice: this, as the participant said, was a gap - and cooperation between supervisors and faculty members was essential to reducing that gap.

Discussion

This study aimed to explore how practice educators perceived and emphasized research in their supervision of occupational therapy students during practice placements. To facilitate students' application of concepts, transferring them from the education context to everyday practice, practice educators need to demonstrate how they use research evidence in their professional decision-making. In our study, all the participants highlighted the importance of research in professional practice, and indeed described several benefits of research use. However, a main finding was that they rarely emphasized research in their supervision, and research was only implemented in their practice to a limited degree. A range of factors influenced this limited emphasis on research, including lack of competence, awareness, initiative and interest, as well as expectations from leaders and workplace culture. Moreover, a lack of communication and cooperation with the occupational therapy programme regarding students' research use in practice placements also influenced participants' limited emphasis on research in supervision. This sparks an interesting question: Why did all the participants highlight the importance of research, if they integrated it in their supervision and everyday practice to a limited extent?

Here, Wenger's theory of communities of practice [8] may help contextualize study findings, as the students' education programme and practice placements may be perceived as two different communities of practice. The concept of communities of practice was originally developed by Lave and Wenger, who suggested that learning is situated and entails taking part in social practices, rather than reflecting the individual acquisition of knowledge [9]. Higher education institutions, by contrast, have operated on the assumption that learning is an individual process separated from the rest of our activities [43]. This perspective has been theoretically challenged by those who argue for a more collaborative social-constructivist

approach to learning, as Wenger does in his social theory of learning [43]. How knowledge and learning occur, and whether what is learned in one situation can be transferred to another, has long been of interest to learning theorists [44]. Wenger [8] describes communities of practice as characterized by mutual engagement, a joint enterprise and a shared repertoire.

In our study, while participants were positive toward research, it was rarely emphasized in supervision. When supervising students, participants placed more emphasis on the students' appearance, initiative and interest in learning. The communities of practice theory is a useful framework for understanding this paradox. In the community of practice constituted by their practice placements, students are newcomers [8]; moreover, they are participants in this community of practice for only a short while, and as social beings, they need to be accepted by the others in the community. Students' participation in practice placements can thus be characterized as a legitimate peripheral participation [9]. As newcomers, they lack the knowledge and the formal role required to be a member of the practice community, and they learn through participation in their supervisor's practice [9]. Their participation moves along a trajectory, from apprenticeship toward membership in a community of practice [8]. The practice communities provide prototypes for how to think about decision-making and, for instance, whether the application of research evidence is a part of their practice [45]. In practice settings, patient outcome is the main focus; as such, if the application of research evidence is not valued by management and senior staff, then it is unlikely to be incorporated into daily practice [46, 47]. Therefore, role modelling represents a key learning opportunity within practice communities.

Study participants experienced a lack of communication and cooperation with the academic community regarding students' use of research in practice placements. Students in professional education programmes are engaged in learning that occurs in two relatively

separate communities of practice: the academic and the workplace communities [48].

Participation in the academic community of practice is temporary: the main goal of most students is participation in the practice community and an identity as a qualified professional [48]. In the academic community, students' skills in searching, critically appraising and implementing knowledge obtained from research articles are valued; here, learning research methods and philosophies of science and conducting research as a part of a bachelor's thesis is also important. Research in the practice community, on the other hand, is more concerned with ensuring desired patient outcomes and improving health care. There is thus a potential disconnect between expectations from the academic and practice communities regarding students' research use. This disconnect may explain the present study's findings that there was a lack of communication and expectations around students' research use during supervision. Lack of communication with workplace learning supervisors regarding how to facilitate EBP was also noted in a study by Murphy et al. [33], raising concerns about variable quality in EBP education across workplace learning settings.

Moreover, in the present study, findings indicate that the documents related to practice placements lacked a description of the supervisors' responsibility for developing students' research skills during practice placements. As practice placements represent a substantial part of the occupational therapy education programme, the teaching instruction around EBP should be integrated into the practice setting so that students learn how to incorporate these skills in their future practice [4]. Indeed, teaching and learning integrated into practice are considered the best option for improving EBP knowledge, skills and attitudes [49].

Undergraduate students need to see EBP in practice: otherwise it can be difficult for them to assimilate the components being taught and their relevance to future work [36]. In addition, practice educators need to challenge students to show EBP skills and problem-solving in practice placements [36, 37].

The participants' use of research in their everyday practice influenced the emphasis they placed on research in supervision. In general, a limited focus on implementing research in practice coincides with prior research among occupational therapists [17, 18]. Previously identified barriers for implementing EBP include lack of time, lack of availability and accessibility of research, as well as limited research skills [17]. Moreover, organizational barriers, such as organizational culture, have been identified [50]; in [45], it was argued that organizational culture impacts occupational therapists' ability to increase and maintain the use of EBP. The importance of organizational support has been found in another study, as well, where occupational therapists reporting high organizational support had higher EBP implementation [25]. In the present study, workplace culture—including organizational support—was highlighted by participants as impacting their engagement in research and EBP. This may indicate limited organizational support within practice communities for those students seeking to understand and implement EBP during practice placements.

As noted above, study participants' emphasis on research was dependent on individual factors, such as one's competence, awareness, interest, initiative, and priorities. Every member of a community has its own identity, and in social terms, individuality should be seen as something that is part of the practices of a specific community [8]. Identity is formed through participation, and is an integral aspect of the social theory of learning [8]. In the present study, participants' description of research as an individual priority could indicate that implementing research into professional practice is not institutionally established.

Further, the participants expressed that research was not routinely integrated into their patient intervention. Interestingly, some of the participants highlighted that they could not, in good conscience, prioritize research over patients. This could indicate that they perceived research and professional work as two separate domains, instead of research as something that is a part of professional practice; notably, although some participants argued that practice

guidelines based on the best available evidence in a specific area of practice was a way of using research in their practice, guidelines were not used to connect these domains in their supervision. Moreover, it was also argued that faculty members lacked knowledge about such guidelines; this finding aligns with a study on research-based education among faculty members and students in occupational therapy supports [51]: the authors found ambiguity around the role of research in the occupational therapy profession, and that engaging in research and professional practice may be considered two separate domains by some faculty members. To provide best practice for their patients, research should be integrated into occupational therapists' daily routine and there should be a link between research and its relevance for professional practice in education [52].

Implication for practice: suggestions to reduce the distance between the two communities of practice

One approach to improving EBP uptake in professional practice is through the integration of research in education [51, 53, 54]. Students' training in research use should take place both on campus and in practice placements. If occupational therapy students become skilled in EBP during their education programme, they may feel more competent and confident using EBP in future practice [55]. Expectations toward students' use of research in practice placements should be emphasized and clearly stated in documents related to practice placements, and supervisors may assume more responsibility regarding students' research use. Supervisors should also challenge students' research use to a larger degree during practice placements [36, 37]. However, time constraints and lack of preparation for the educator role have been identified as barriers in practice educators' work with students [56]. In this study, practice educators expected the academic institution to provide efficient support, including training for the educator role, information regarding the expectations of the academic programme, and ongoing communication during the practice placements.

The classroom and the practice site represent diverse and unique teaching and learning environments that students are required to navigate successfully [57]. Therefore, there is a need for collaborative strategies between the academic and practice settings to improve theory-driven practice as part of the process of supervising students in practice placements [57]. Collaborative research relationships between faculty, occupational therapists and graduate students have been recommended [58]. Journal clubs may also be another approach for researchers, faculty members and students to cooperate - moreover, these may result in practitioners who can efficiently use research and lead journal clubs in their own professional practice [59]. Further, engagement in small-scale research projects during practice placements has provided meaningful learning experiences for occupational therapy students [34]; such engagement represents another way to bridge the gap between education programme and practice.

Practice educators could receive training in implementing research as a part of their everyday practice, as prior research has indicated that practice educators improved their knowledge, skills and confidence when using EBP after an introductory course [2]. Ideas for innovations in treatment and care may arise from researchers and professionals working together as a joint effort, examining relevant research findings and discussing how they may be translated into practice in specific contexts. Partnerships in occupational therapy between practitioners and researchers are important for advancing knowledge relevant to practice and supporting EBP [60].

Different communities of practice will affect students' attitudes and habits regarding decision-making and whether the application of research evidence is a part of their future practice [45]. In our study, practice guidelines were cited as a way to use research in practice. Practice guidelines aim to close the gap between the available research evidence and applying that evidence to improve health-care outcomes [61]. Those who support the use of guidelines

argue that health care professionals are not using research evidence effectively. Moreover, studies have indicated that between 30–40% of patients are not receiving care in accordance with research evidence and that 20–25% of the care delivered may be unnecessary or harmful [62]. Highlighting the research basis of practice guidelines in classroom teaching as well as practice placements could be a way to mitigate this, strengthening the relationships and cooperation between education and practice.

Limitations

We conducted three focus groups and one individual interview. Focus groups can potentially create a synergy that is not possible in individual interviews [40, p. 18]. On the other hand, dominant participants can influence the results and participants may tend to intellectualize, as highlighted by Krueger [41, p. 13, 22]. However, there were no dominant participants in our study. Focus groups can also challenge the participants' ability to speak freely [38]; in our study, participants seemed to be sharing their experiences openly and did not refrain from discussing reasons for limited research use or their expectations toward students' research use.

A limitation in our study is the low number of participants in two of the focus groups.

Although we planned for the focus groups to have '4 – 8' participants, it was difficult to recruit that many to our study. As such, two of our focus groups had only two participants.

Although some use the term 'focus group' in a stricter sense, Malterud [40] highlights that recommendations and practices vary considerably regarding the number of participants in a focus group. She argues that a discussion between a researcher and two participants can be called a focus group if the discussion is characterized by interaction between the participants.

Moreover, we considered using member checking, but decided against it. According to

Thorne [38 p. 175], member checking can lead to false confidence if the participants confirm what you thought or potentially derail you from good analytic interpretations if they do not.

It is possible that the practice educators who participated in this study were more interested in the interview topic than practice educators who chose not to participate. This could affect the data, as the participants may have had more positive attitudes toward research—in practice as well as in student supervision—compared to those opting not to participate. However, none of the participants had a level of education higher than a bachelor's degree. As research use among occupational therapists has been shown to increase with higher education levels [19, 25], this aspect of the sample composition may have had the opposite effect on the data derived from the interviews.

A strength of our study is that two authors conducted the analysis. Like all qualitative studies, we are unable to assess the extent to which the study sample is representative of the population of occupational therapy practice educators. However, establishing representativity is generally not an aim of qualitative studies, and according to Thorne [38, p. 105], there is no definitive rule regarding the correct sample size for an interpretive description study. We believe our findings offer important insights for the field.

We recommend that future research explores and investigates occupational therapy leaders' perceptions and attitudes toward research, as this could influence practice educators' research use. Additional research is needed that examines factors supporting the implementation of research-based teaching strategies in occupational therapy educational programmes including practice placements. Studies investigating factors that promote cooperation between the occupational therapy education programme and practice placements around students' research use are also needed.

Conclusion

This study explored how practice educators perceived and emphasized research in their supervision of occupational therapy students during practice placements. The participants were positive toward research and described several benefits of research use. Despite this, the participants rarely emphasized research in their supervision of occupational therapy students in practice placements. To increase the probability of therapists using research in their professional work, research should be integrated into practice placements documents and in the organizational structures both in the occupational therapy programme and in students' practice placements. Cooperation between these two communities of practice is essential and may include the use of research-based practice guidelines, assessments and intervention tools that are readily adopted in practice. Engagement in journal clubs and research projects during students' practice placements may also promote cooperation between faculty, practice educators and students.

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Authors' contributions

KVH was the project manager of this study and monitored the recruitment of practice educators. All authors contributed to the study design, interpretation of results, and critical revisions of the manuscript. The data were collected and analysed by KVH in collaboration with another researcher. KVH drafted the manuscript. JCS and TB provided scientific input for the manuscript drafts, approved the final version to be published, and agreed to be accountable for all aspects of this work.

Competing interests

None declared.

Availability of data and materials

In accordance with restrictions imposed by the Norwegian Centre for Research Data (NSD) (ID number 8453764), data must be stored on a secure server at VID Specialized University. The contents of the ethics committee's approval resolution as well as the wording of participants' written consent do not render open public data access possible. Access to the study's minimal and depersonalized data set may be requested by emailing the project manager (KVH), at: Kjersti.velde.helgoy@vid.no.

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Table 1. Characteristics of the participants.

Characteristics	Occupational therapists
Participated	9
Field of practice	
Hospitals	5
Municipal health service	4
Sex	
Men	1
Women	8
Age	
30–39	3
40–49	6
Practice experience (years)	
0-4	1
5-9	3
10-19	2
> 20	3
Supervising students (number)	
0–4	3
5–9	2
10–19	4
Highest degree obtained	
Bachelor	9