

Physiotherapists' perspectives on AI-based tools for future practice: A thematic analysis

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Abstract

Artificial intelligence (AI) as a work tool is transforming the traditional role, expertise, and operational culture of physiotherapists. The aim of this study is to examine how Finnish physiotherapy experts would like to use AI-based tools in their future work.

A mixed method survey was conducted among Finnish physiotherapy experts between 10/2025–12/2025. The open-ended question “*If you could have any superpowers with the help of artificial intelligence that would support you in your work as a physiotherapy expert, what would they be?*” answered 141 experts (n=141; 77% women; mean age 47.7 years). The dataset comprised 1,407 words of transcribed text. The data were analyzed using inductive thematic analysis.

A total of 214 meaning units were identified. The analysis yielded five overarching themes with 12 subthemes. AI as a tool for physiotherapists included strengthening clinical expertise, evidence-based decision-making, and holistic understanding of the human body. AI in supporting clients included enhancing client agency and motivation, personalized rehabilitation, and accessible physiotherapy services. AI in supporting administrative work included freeing time for core tasks and improving documentation quality and efficiency. AI in research and development included enhancing the use of research evidence and effectiveness-based practice. AI in education and training included continuous professional learning and an AI-positive expert culture.

In the future, AI appears in physiotherapy as a versatile support tool that strengthens clinical expertise, promotes evidence-based and individualized rehabilitation, enhances service accessibility, and improves efficiency in administrative, development, and educational activities

Keywords: Physiotherapy experts, Artificial intelligence, Future needs, Thematic analysis, Change in professional practice culture

1. Introduction

There is a clear need for change in the work of physiotherapists, as societal resources are expected to remain unchanged or decrease, while the demand for rehabilitation is increasing substantially at both national and international levels (Cieza et al. 2021, Heino et al. 2014). The increasing use of artificial intelligence (AI) may represent one potential solution to this challenge. However, at this stage, based on international systematic reviews, research on AI and physiotherapy has mainly focused on the production of physiotherapy content for rehabilitation clients (e.g. Raval et al. 2022; Sumner et al. 2023) and only a limited number of studies have examined physiotherapists' experiences of using AI (Hegazy et al. 2023; Shawli et al. 2024; Merolli et al. 2024).

International research has not specifically addressed how AI as a work tool influences the development of professional expertise, emerging competence requirements, or work culture, including aspects such as work productivity, perceived well-being at work, or the organization of work (see Hegazy et al. 2023; Shawli et al. 2024; Merolli et al. 2024). Nonetheless, some previous studies suggest that AI has the potential to transform physiotherapists' work by enabling professionals to allocate more time to direct patient interaction, guidance and counselling, functional assessment, as well as the delivery of therapeutic interventions. (Bills & Basheer 2024, Naqvi et al. 2024, Scheper et al. 2024).

In Finland, research related to AI in physiotherapy and rehabilitation remains largely absent (see, e.g., DigiFinland, 2024; Hellstén et al., 2022, 2023; Kaasalainen et al., 2019; Raval et al., 2022; SOTE AI Ecosystem, 2024; Sumner et al., 2023), despite emerging indications that AI may be beginning to influence physiotherapists' work, including aspects of professional expertise, operational culture, leadership, and work organization. To our knowledge, future-oriented perspectives on this topic have not yet been explored. Therefore, the aim of this study was to examine Finnish physiotherapists' future-oriented aspirations and expectations regarding the use of artificial intelligence.

2. Material and methods

A survey study was conducted among Finnish physiotherapy experts between October and December 2025. A total of 141 experts responded (77% women; mean age 47.7 years, SD 13.8). The survey included 7-point Likert-scale multiple-choice questions as well as open-ended questions. For the present study, the data consisted of written responses to a future-oriented, metaphor-based open-ended question: "If you could have any superpowers with the help of AI that would support you in your work as a physiotherapy expert, what would they be?" Written responses were provided by 101 participants (72%). The dataset comprised 1,407 words of transcribed text.

The data were analyzed using an inductive thematic analysis approach (Braun & Clarke, 2006). The analysis began with a thorough familiarization with the dataset,

followed by initial coding of meaningful units. Codes were then organized and grouped into broader categories, which facilitated the development of preliminary themes and subthemes. These themes were subsequently refined, reviewed, and named to ensure they accurately captured the content of the data. Finally, the results were systematically described and reported, providing a comprehensive representation of the participants' perspectives.

3. Results

A total of 214 meaning units were identified in the dataset, which were analyzed according to the principles of thematic analysis. The analysis yielded five overarching dimensions, encompassing twelve subthemes. The themes illustrate the multifaceted roles of AI in physiotherapy from the perspectives of professional practice, client experience, and the broader service system as well as in terms of education as well as research, development, and innovation activities. Table 1 provides a detailed overview of the results of the thematic analysis, including the main and subthemes, along with examples of meaning units.

Table 1. Roles of Artificial Intelligence in Physiotherapy, thematic analysis

Main themes	Sub-themes	Examples of meaningful units
AI as a tool for physiotherapists	- Strengthening clinical expertise	- Clinical reasoning, diagnostic support, selection of exercises, understanding biomechanics and anatomy, outcome evaluation
	- Evidence-based decision-making	- Literature search, recommendations, predictions
	- Holistic understanding of the human body	- Comprehensive consideration of the human body
AI in supporting clients	- Supporting motivation	- Supporting motivation, providing understandable instructions, monitoring exercises
	- Enhancing client agency and motivation	- Tailored exercises, language support, personal-ised feedback
	- Individualized and personalized rehabilitation	
	- Accessible physiotherapy	

		- Support independent of time and location, improving accessibility
AI in supporting administrative work	- Freeing up time for core professional tasks - Improving quality and efficiency of documentation	- Automating documentation, reporting, scheduling - Structured texts, transcription, quality assurance - Summarizing studies, evaluating sources
AI in research and development	- Enhancing utilization of research evidence - Evidence-based service development	- Collecting and analyzing outcome data
AI in education and training	- Continuous education professional learning	- Learning clinical guidance, updating knowledge

AI as a tool for physiotherapists

AI primarily emerged as a tool that strengthens physiotherapists' clinical expertise. The data highlighted AI's role in supporting clinical assessment, reasoning, and diagnosis, particularly in situations that require integration of extensive information. Meaningful units described AI as assisting in the formulation of treatment plans, selection of interventions, and prediction of rehabilitation outcomes. AI was also strongly associated with evidence-based decision-making. Participants emphasized AI's ability to rapidly provide up-to-date research evidence, recommendations, and reviews for clinical use, as well as to support the organization of large datasets. AI was seen as a means of reducing time spent searching for information and enhancing the justification of clinical decisions. A third central theme was a holistic understanding of the human body. Meaningful units described AI as supporting comprehension of biomechanics, anatomy, physiological load, and the interplay of health conditions, thereby enabling more precise and individualized physiotherapy assessments.

AI in supporting clients

From the client perspective, AI was particularly perceived as enhancing agency and motivation. The data illustrated AI's role in supporting client engagement by providing understandable information, feedback, and reminders for exercises. AI was seen as a tool to help clients better understand their bodies, symptoms, and rehabilitation process. Another key theme was individualized and personalized rehabilitation. Meaningful units indicated that AI facilitates tailored exercise programs, considers individual loading capacities, and enables continuous monitoring of client progress. AI was also seen

as supporting multilingual communication and culturally sensitive guidance. The third theme emphasized the accessibility of physiotherapy. AI was perceived as enabling access to services regardless of time or location, while also supporting equity and service availability for diverse client groups.

AI in supporting administrative work

In administrative tasks, AI was primarily perceived as a time-saver. Meaning units described automation of documentation, reporting, scheduling, and other routine tasks, which was seen as reducing workload and freeing time for patient care. AI was also associated with improving the quality and efficiency of documentation. Participants highlighted streamlined record-keeping, structured text generation, automatic transcription, and linguistic quality assurance. AI was perceived as a tool to produce more consistent and clear documentation.

AI in research and development

In the context of research and development, AI was primarily seen as enhancing the utilization of research evidence. Meaningful units described AI as supporting literature searching, summarization, and critical appraisal, as well as assisting in drawing conclusions from large datasets. Another central theme was evidence-based service development. AI was perceived as facilitating the collection, analysis, and reporting of outcome data, thereby supporting decision-making in service improvement and resource allocation.

AI in education and training

From an educational perspective, AI was perceived as supporting continuous professional learning. Meaning units described AI as providing up-to-date research evidence, clinical guidance, and learning support across different career stages. Furthermore, the development of an AI-positive expert culture was emphasized. AI was seen as an enabler of innovation, a clarifier of clinical reasoning, and a facilitator of new approaches in physiotherapy practice.

4. Discussion

The results underscore that the adoption of AI as a work tool is not solely a matter of technological implementation but also requires new competencies and skills at both individual and organizational levels. Specifically, AI has the potential to enhance clinical reasoning, support evidence-based decision-making, and facilitate holistic understanding of the human body, aligning with physiotherapists' professional expertise.

The thematic analysis presented in Table 1 highlights the multifaceted roles that artificial intelligence may assume in physiotherapy. These roles have implications not only for professional practice and organizational structures, but also for education, research, development, and innovation activities. The findings further revealed a hierarchical,

multilayered structure of aspirations, with future-oriented hopes addressing individual-level concerns as well as organizational and societal dimensions. Consistent with previous research, most studies have focused primarily on either clients/patients (Raval et al., 2022; Sumner et al., 2023) or physiotherapists (Hegazy et al., 2023; Shawli et al., 2024; Merolli et al., 2024). However, such a narrow focus overlooks the broader context of physiotherapy and its complex, multidimensional ecosystem, which encompasses professional practice, organizational structures, education, and research and innovation activities.

The results also highlight the diverse future competence needs of physiotherapy professionals, which relate not only to five main thematic areas (AI as a tool for physiotherapists, AI in supporting clients, AI in supporting administrative work, AI in research and development, AI in education and training) but also to the management of the broader ecosystem. The study's thematic findings may inform the development of physiotherapy programs at undergraduate, graduate, and doctoral levels, as well as continuing education initiatives. The study results, which highlight future-oriented visions and needs, further contribute to and guide the development of AI guidelines relevant to physiotherapy and rehabilitation, providing valuable evidence to inform the creation of such guidelines at the national level.

Currently, Finland does not have national guidelines addressing the use of artificial intelligence in physiotherapy or rehabilitation. This study forms part of a larger research project, "Artificial Intelligence in Physiotherapy: Future Opportunities and the Translation of Research Evidence into National Guidelines and Recommendations," which aims to develop evidence-based AI guidelines for the Finnish physiotherapy context. Funding for the project is provided by the Finnish Work Environment Fund (2025–2026).

The overarching aim of the project is to generate practical, applicable knowledge on artificial intelligence for physiotherapists, while informing national guidelines and recommendations for its use in physiotherapy practice. The project also addresses the development of a work culture of AI expertise, considering leadership and work organization across different stages of physiotherapists' careers. The study comprises four complementary sub-studies: a systematic scoping review, a survey targeting physiotherapists, interviews with physiotherapy professionals, and a Delphi expert panel based on futures research methodologies. Three rounds of the Delphi panel will be conducted using the eDelphi software, recruiting physiotherapy professionals from various organizations and sectors of society. To our knowledge, no research- or evidence-based guidelines for physiotherapy have yet been established internationally.

Although digitalization and remote physiotherapy have been largely understood as real-time guidance via digital platforms (Hellstén et al., 2022; Hellstén et al., 2023), our results suggest that AI can extend beyond these practices to transform work organization, leadership, and professional culture across career stages. Taken together, the findings indicate that strategic implementation of AI should be accompanied by targeted

skill development, structured guidance, and collaborative practices to maximize its potential in physiotherapy.

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