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Care and Rehabilitation Needs of Patients with Stroke-induced Facial Paralysis - Mixed Methods Research on Professionals' Experiences

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Abstract: **Aim:** to describe needs to develop the care and rehabilitation of patients living with stroke-induced facial paralysis. **Design:** Cross-sectional descriptive study based on quantitative and qualitative data **Methods:** Data was collected using an online survey sent to nurses and other healthcare professionals working with neurological patients in 15 hospitals in Finland. The quantitative data was analyzed using Webropol analytics and the qualitative data using inductive content analysis. **Results**: More than half of the participants found that they were not familiar with the care or rehabilitation for facial paralysis. The participants proposed (1) a clear, evidence based care and rehabilitation pathway; (2) interprofessional and profession-specific training to embed guidelines into practice; (3) Interprofessional collaboration; and (4) effective self-care and self-rehabilitation with the assistance of families and support persons. **Conclusion:** The creation of evidence-based standardized guidelines followed by interprofessional and profession-specific continuing education programs is necessary. **Implications for the profession and patient care**: Improving nurses' and other healthcare professionals competencies through continuing education programs is essential to ensure patients with facial paralysis equal access to high quality care.

Keywords: Facial pralysis, stroke, nurse, physiotherapist, skills, rehabilitation

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SUMMARY

- ✓ **The problem addressed**: Healthcare professionals involved in the care and rehabilitation of patients with facial paralysis lack adequate knowledge of effective interventions and equipment.
- ✓ **The main findings**: Evidence-based standardized guidelines followed by interprofessional and profession-specific continuing education programs, interprofessional collaboration and effective self-care are required to improve the care and rehabilitation of patients with facial paralysis.
- ✓ **Impact:** The research should alert researchers, healthcare managers and professionals, and education planners nationally and internationally to the need to bring together existing good practices and to establish evidence-based standardized guidelines.
- ✓ **Reporting Method:** The study adhered to the relevant EQUATOR guidelines and the Good Reporting of a Mixed Method Study (GRAMM).

INTRODUCTION

There is scarce research on the care and rehabilitation for facial paralysis and no structured, consistent, and evidence-based framework for delivering care to the affected patients. This article reports Finnish healthcare professionals' experiences of working with stroke patients exhibiting facial paralysis, and their proposals for improving the care and rehabilitation for facial paralysis. The term "facial paralysis" is used to refer to stroke-induced central facial paralysis. The abbreviation FP is used throughout the article. The term "paresis" refers to muscle weakness or partial paralysis.

The Background section presents information on the prevalence and treatment of stroke and stroke-induced FP, including widely recognized development needs regarding the care pathways for stroke and FP patients. The method section describes how quantitative and qualitative data were collected to access nurses, physiotherapists', occupational therapists', practical nurses', speech therapists' and public health nurse' experiences of caring for FP patients and to report their development proposals regarding the care and rehabilitation for FP. The Findings consist of the following five components: participant demographics; the participants' current training and needs for training on FP; their ratings concerning the current care, rehabilitation and guidance of FP patients; their self-rated care, rehabilitation and guidance competencies; and their development proposals, presented using representative participant quotes.

BACKGROUND

Recent stroke burden estimates showed that stroke was the second most common cause of death among non-communicable disorders globally in 2021. Although the age-standardized incidence of stroke was found to decline consistently from 1990 to 2021, this development seems to have stagnated since 2015. In terms of absolute numbers, the stroke burden has increased globally due to aging and population growth (Roth et al., 2020) and remains highest in low-income and middle-income countries (Feigin et al., 2024). In Europe, absolute numbers of first-time strokes and stroke prevalence have increased, whereas age-adjusted incidence, prevalence, mortality, and disability-adjusted life year rates have decreased consistently (Prendes et al., 2024).

The risk of stroke increases with age, but a trend towards the increasing prevalence of stroke among younger age groups has been observed in several studies (Scott et al., 2022; Sun et al., 2019). Besides ageing, risk factors linked with stroke include elevated blood pressure, smoking, abnormal blood lipids, unhealthy diet, physical inactivity, obesity, diabetes mellitus, cardiac disease, excessive use of alcohol and psychosocial factors. (O'Donnel et al., 2016). In addition, changes in the ambient temperatures and pollution may be responsible for the increased burden of stroke (Feigin et al., 2024).

Approximately 10% of stroke patients recover fully and two thirds recover sufficiently to cope independently. Half of the survivors live with some level of permanent disability. The effects of stroke are highly individual and depend on the extent and location of the damage to the brain. Patients commonly exhibit impairment in motor, sensory, cognitive, emotional and social functioning (Kaste et al., 2015).

Facial paralysis occurs in both ischemic and hemorrhagic strokes (Volk 2019). The effect may be partial (paresis) or complete (paralysis) (Schünke et al., 2020). Central facial paralysis or paresis has a prevalence of approximately 45%–60% (Yew & Cheng, 2015; Eroglu et al., 2025). It primarily affects the contralateral lower face (Volk et al. 2019) although according to a recent finding, upper facial weakness is also commonly observed in FP following acute ischemic stroke (Wongwandee & Hongdusit, 2025). Negative functional and esthetic effects, such as mouth drooping, unintentional loss of saliva from the mouth, impaired smiling and speech, as well as problems with eating are common and can have negative effects on the experienced wellbeing and quality of life (Vaughan et al., 2022; Volk, 2019). An extensive study found aphasia in 45% and dysarthria in 70% of people following stroke, and these symptoms persisted in at least a quarter of people at three-months post-stroke (Ali et al., 2015). In contrast to central facial paralysis, peripheral facial paralysis may be triggered by pathogens, autoimmunity, trauma, tumors or cholesteatoma, and its cause mostly remains unknown. Peripheral FP involves weakness across the entire side of the face (Mohammad et al., 2023; Eroglu et al., 2025).

A holistic approach is required in the care for FP, especially since facial function is linked with sensation and emotional communication (Chang et al., 2016; Krumhuber et al, 2023; Eroglu et al., 2025). According to Butler and Grobbelaar (2017), individuals affected by FP may be perceived as uninterested, unfriendly, or of lower intelligence. According to a study in the United Kingdom, similar clinical approaches (mainly orofacial exercises and facial massage in addition to biofeedback, facial taping, electrical stimulation and speech and swallowing exercises) are used for people with central facial paralysis and people with peripheral facial paralysis. Summing up recent research, the study agrees that is not clear whether similar approaches should be used, especially since the use of gross facial exercises and electrical stimulation seems to be discouraged in the recent recommendations for peripheral FP. The study also refers to more unconventional treatment prospects, such as acupuncture and computer vision/artificial intelligence. (Eroglu et al., 2025).

Alongside risk-factor prevention, recent research has identified several development needs in the care of stroke patients. These include evidence-based standardized care pathways for stroke (Boehme et al., 2021); nationwide stroke units; specific training and a need for further research (Eroglu et al., 2025; Feigin et al., 2024). Epidemiological surveillance systems and a wider use of evidence-based mobile and telehealth platforms have also been proposed to address the gaps in stroke service delivery (Feigin et al., 2024). As regards facial paralysis, standardized assessment tools and evidence-based treatment guidelines are lacking despite the prevalence of the symptom. Specific training in FP assessment and management is urgently required (Eroglu, 2025).

As a response to the various development needs, The Stroke Action Plan for Europe 2018–2030 (Norrving et al., 2018) includes the goals of national care pathways; dedicated stroke units as the first level of care for most patients; obligatory assessment of rehabilitation needs three to six months following stroke and annual follow-up thereafter; and extensive patient and carer support. In Finland, the acute care for stroke has developed significantly, including immediate diagnostics, thrombectomy and thrombolytic therapy in dedicated units (National Current Care Guidelines, 2024). In contrast, the follow-up and rehabilitation following discharge from hospital does not meet patient needs adequately, and there are significant geographical disparities (Pitkänen & Jäkälä, 2020).

Nurses, as members of interprofessional teams, contribute substantially to the recovery of patients after stroke (Tanlaka et al., 2023). They can be involved in all aspects of care, including initial assessment, nursing care, rehabilitation and psychological support (Zhao et al., 2024). An integrative literature review revealed that besides direct care, nurses' work can involve teaching of patients and families, coaching, coordination, management, advocacy and collaboration, carried out to promote patients' independence and to prepare them for life after discharge (Tanlaka et al., 2023). Much can be implemented regardless of whether the hospital has a stroke unit status. This is true for example for nurse-initiated protocols to manage fever, hyperglycemia and swallowing (Ding et al., 2024). Task shifting from doctors to nurses has been proposed to reach more effective stroke care (Feignin et al.).

Despite the nurses being involved in all aspects of care, their contributions have been viewed as therapeutically nonspecific and their role has not been well defined (Tanlaka et al., 2023). Only a limited number of nurses globally have received adequate stroke education and training (Zhao et al., 2024). There is, for example, a need for targeted educational interventions and professional development programs to enhance the quality of neurological assessment by nurses (Ibrahim et al., 2025). It is also possible that nurses concentrate too much on patients' physical needs and monitoring. Integrating stroke-specific rehabilitation skills in their practice could improve outcomes for stroke survivors (Clarke, 2014). Therapeutic nursing should also involve education and support to facilitate the development of patients' psycho-social coping strategies (Burton, 2003). This task is frequently complicated by communication problems caused by aphasia or dysarthria. Nursing staff may talk with patients in a functional manner and the conversations may revolve around nursing tasks (Gordon et al., 2009). People with aphasia have described healthcare conversations as one-sided and pointed out the need for education on accessible communicative strategies (Thomas et al., 2025). Training on how to engage more fully with stroke patients has been proposed in earlier research as well (Gordon et al., 2009).

Regarding facial paralysis specifically, research indicates confusion about which professionals should lead its management after stroke (Erogly et al., 2025). To provide examples of the current situation: It has been reported that speech language pathologists often lead the management of FP, but their role is not clearly defined nor well recognized (Vaughan et al., 2022). In the United Kingdom, speech and language therapists and physiotherapists are considered the primary providers of post-stroke FP care, but clarification of professional roles and promotion of interdisciplinary collaboration in FP care is urgently recommended. It was found, for example, that nurses and doctors used different assessment tools, compared to speech and language therapists and physiotherapists (Erogly et al., 2025). The need for new evidence-based treatments for speech and language therapists has been recognized internationally (Balzan et al., 2024).

As a response to these challenges, investigators recommend further research on FP, international efforts to create standardized guidelines and integrating the principles of rehabilitative nursing into the stroke care pathway. Multidisciplinary care and the provision of updated continuing training to healthcare professionals are essential (Tanlaka et al., 2023; Jarva et al., 2020; Butler & Grobbelaar, 2017).

Aim and Research Question

The aim of this study is to describe needs to develop the care and rehabilitation of patients living with stroke-induced facial paralysis. The study seeks to produce information that can be used to tailor continuing education for nurses and physiotherapists working with stroke patients. The research problem is: How should the care and rehabilitation of facial paralysis patients be developed according to healthcare professionals?

THE STUDY

Methods

Design

This is a cross-sectional descriptive study based on statistical analysis of quantitative data and on inductive content analysis of healthcare professionals' responses to an open question on the development of the care and rehabilitation of facial paralysis patients.

Study Setting and Recruitment

Contact persons in 15 hospitals (4 university hospitals and 11 central hospitals) in Finland forwarded an online survey to nurses, public health nurses, practical nurses, physiotherapists, occupational therapists and speech therapists involved in the care of neurological patients. Participation was voluntary and anonymous.

Data Collection

The data was collected using a digital survey called Webropol between January 1 and May 31 in 2025. Nurses, physiotherapists and other healthcare professionals in 15 hospitals, caring for patients with stroke-induced facial paralysis, formed the target group of the study. The questionnaire consisted of background questions on demographic data (n=4), multiple choice questions on neurological training (n=5), Likert scale questions (n=19) and an open question.

The Likert scale questions were worded positively as in the following examples: "The care and rehabilitation of facial paralysis patients is of high quality"; "I am familiar with the essential nursing interventions for patients with facial paralysis", and "I know how to plan nursing goals for patients with facial paralysis". The participants chose one of the following options: fully agree (1); rather agree (2); neither agree nor disagree (3); rather disagree (4); and fully disagree (5). The open question was: How could the care and rehabilitation of FP patients be developed?

Data Analysis

The quantitative data was analyzed using Webropol analytics. The results are reported using percentages, means and medians. The qualitative data was analyzed using inductive content analysis (Elo et al., 2022). The participants' responses to the open question on the development of the care and rehabilitation of facial paralysis patients were first read through several times. Relevant expressions were underlined and similarities discovered. The original clauses and sentences were rewritten in a reduced form and grouped under categories based on similar contents. These categories were ordered into broader higher order categories and collapsed into a final main category.

Ethical Considerations

The study followed the ethical principles for medical research of Helsinki Declaration (1964, last amended 2024) and the basic principles of reliability, honesty, respect and accountability of the Finnish National Board of Research Integrity (2023), in harmony with the European Code of Conduct for Research Integrity. The national guidelines on good scientific practice including research permission, consent and ethical review were observed (Finnish National Board of Research Integrity 2023).

The cover letter, forwarded to the healthcare professionals through contact persons in 15 hospitals, contained information about the research and its purpose. Participation was voluntary, and the participants were told that they could withdraw at any stage of the research process. Their anonymity was secured throughout the process and they or their organizations cannot be identified from the research report. Special attention was paid to the obligations of professional secrecy and confidentiality. Ethical approval was granted by the Ethical Committee of the Wellbeing Services County of Pirkanmaa.

Reliability, Rigor and Reflexivity

The research data and findings are described carefully and openly (Wang & Cheng, 2020). The study participants represent different ages and geographical regions across Finland, which increases the reliability of the study. However, the generalizability of the quantitative results must be assessed critically, since the exact number of the population is not known (Carlson & Morrison, 2009). The online survey may involve some challenges, for example environmental distractions at the workplace, or reduced accountability due to anonymity (Brühlmann et al., 2020). It is also always possible that participants misread questions, provide socially acceptable responses and overuse the middle option of the Likert scale (Piedmont et al., 2020).

To increase the rigor of the qualitative part of the study, the criteria of credibility, transferability, dependability, confirmability and authenticity (Lincoln & Guba,1985) were kept in mind. The investigators discussed the findings of the inductive content analysis and the process is carefully described in the Method section (Elo et al., 2022) to increase credibility and dependability. The results can be transferred to national and international organizations and used to develop the initial and continuing education of healthcare professionals involved in the care of FP patients. The research report includes original participant quotes to increase the authenticity of the findings.

In their earlier profession, the investigators had worked with neurological patients, but had little experience of patients living with facial paralysis. The investigators were aware of the possibility of potential preconceptions and made an effort to analyze and report the data as neutrally as possible.

FINDINGS

Participant Demographics

The participants were 115 nursing and rehabilitation professionals representing 15 hospitals (4 university hospitals and 11 central hospitals). The majority or 93 % were women. The age distribution was as follows: 25-30 years (17.6%); 31-35 years (14.9%); 36-40 years (14.9%); 41-45 years (7%); 46-50 years (12.3%); 51-55 years (10.5%); 56-60 years (10.5%); and over 60 years (12.3%).

Nearly half of the participants (48.7 %) were nurses. The second largest group consisted of physiotherapists (27.4 %), followed by occupational therapists (9.7 %); practical nurses (9.7%); speech therapists (3.6%) and public health nurses (0.9%). Approximately half of the participants worked in central hospitals (51%) and the other half in university hospitals (49 %). The majority of the professionals (66.4%) had a degree from a university of applied sciences. One fifth (21.2%) reported having a vocational qualification, while 8 % held a senior high school diploma. The greatest group (40.4%, n=36) had a work history of under 5 years, while the second largest group (21.9 %, n=25) had a work history of 5-10 years in health services. The remaining distributions were 11-15 years (14 %, n=16); over 25 years (11.4%, n=13); 16-20 years (8.8 %, n=10); and 21-25 years (3.5 %; n=4) of work experience in health services.

The term participant used in the findings refers to nurses, physiotherapists and other healthcare professionals caring for patients with stroke-induced facial paralysis. Quantitative data is presented first.

Participants’ Current Training and Needs for Training on Facial Paralysis

Nearly half (48 %) of the participants reported that they were familiar with the care and rehabilitation practices for facial paralysis, whereas more than half (52 %) found that they were “not at all” familiar with the care or rehabilitation for FP. Only 10 participants had obtained further training related to the care of neurological patients. Their training had involved the following courses or topics: a neurological guidance course; specialized studies in neurological nursing; a neurological continuing education course; an open university neurology course; training on the peripheral Bell’s palsy; a basic Bobath course; and various electrostimulation therapy courses (VitalStim; neuromuscular electrostimulation therapy). Only one participant had obtained training on the care of patients with FP specifically.

Nearly half (47.8 %, n=54) of the participants found that they required further training on FP and on the care and rehabilitation of FB patients. They especially wished for training on optimal nutrition, mouth care and various rehabilitation methods. Both interprofessional training and specific training for the professional groups were mentioned.

Participants’ Ratings Concerning the Current Care, Rehabilitation and Guidance of Patients with Facial Paralysis

The study participants were asked whether they considered the current care, rehabilitation, guidance and rehabilitation equipment to be of high quality. The greatest group of participants, choosing the neutral option “neither agree nor disagree”, seemed undecided about the quality of care and rehabilitation (50.4%), guidance (46.9%) and equipment (61.3%). In addition, 24.8% rather agreed, but 15.9% rather disagreed that the care and rehabilitation were of high quality (mean 2.8; median 3). Similarly, 27% rather agreed, while 17.1% rather disagreed with the statement that the guidance was of high quality (mean 2.9; median 3). More than fifth (22.1%) rather agreed and 12.4% fully agreed with the statement that the guidance was client-centered, whereas 15.9% rather disagreed (mean 2.7; median 3). In harmony with these findings, more than half of the participants agreed (38 % fully, 14.2% rather) that there was a need to develop the guidance of FB patients. Only 22.1% chose the neutral option “neither agree nor disagree” (mean 2.6; median 2).

To give a specific example, two questions related to mouth care revealed that the study participants mostly found that the current nursing care of FP patients included guidance on cleaning the mouth after meals (neither agree nor disagree 32.1%, rather agree 22.9, fully agree 21.1%) and, especially guidance on removing medicine residues (rather agree 33%, neither agree nor disagree 22%, fully agree 21.1%).

Participants’ Self-Rated Care, Rehabilitation and Guidance Competencies

When asked to rate their personal competencies in the care, rehabilitation and guidance of FP patients, a considerable proportion of the participants were insecure about their skills and abilities. Almost half of the participants seemed uncertain if they could plan nursing goals for patients with FP (fully disagree 24.6%; and rather disagree 22.8%). Another 29% chose the option “neither agree nor disagree” (mean 3.4, median 3.0). The participants were slightly more confident about being familiar with the relevant nursing interventions, and their responses were more evenly distributed across the scale. Starting with the largest proportion, their responses were: neither agree nor disagree 25.4%; rather agree 23.7%; rather disagree 21.9%; fully disagree 20.2% and fully agree 8.8.% (mean 3.2, median 3).

As regards the participants’ self-rated ability to plan rehabilitation goals for FP patients, the participants were divided into three major groups. The largest group (30.7%) felt rather insecure about their ability to plan rehabilitation goals, whereas 21% felt rather secure and 19.3% chose the middle option (mean 3.3, median 4.0). Assessing familiarity with the essential rehabilitative interventions for FP, the participants in almost equal distributions either rather agreed (25.4%), rather disagreed (23.7%), fully disagreed (20.3%) or neither agreed nor disagreed (26.4%) with the statement. A clear majority were not confident users of rehabilitative equipment for FP. The responses to the statement “I know how to use various equipment in the rehabilitation of FP patients” were concentrated around the options rather disagree (31.3%), fully disagree (23.5%) and rather agree (23.5%). The participants’ ratings were higher for the self-perceived ability to monitor the implementation of the rehabilitation plan (rather agree 28.7%, neither agree nor disagree 28.7%, fully agree 13%; mean 2.9; median 3), and, especially, for their ability to document changes in the patient’s rehabilitation process (rather agree 27.2%, neither agree nor disagree 24.6%, fully agree 18.4%; mean 2.9; median 3).

The questionnaire also contained statements on guiding and teaching patients and colleagues. The study participants’ responses to the statement ”I know how to guide patients with facial paralysis” were centered around two polarities: rather agree (34.8 %) and rather disagree (26.9%), with a relatively low proportion of 19.1 % choosing the option “neither agree nor disagree (mean 3.0, median 3.0). The participants’ responses to the three statements covering ability to teach rehabilitation goals, care and rehabilitation contents and essential nursing and rehabilitation interventions to new colleagues were rather evenly distributed across the four options “rather agree, neither agree nor disagree, rather disagree and fully disagree”, with the two first options always accounting for 23.5-25.2% of the responses. Nearly half of the participants trusted their ability to refer patients to other professionals, when necessary (rather agree 27.1%, neither agree nor disagree 21.6%, fully agree 20.7%).

Participants' Proposals for the Development of Care, Rehabilitation and Guidance of Patients with Facial Paralysis

The participants' proposals for the development of the care, rehabilitation of guidance of patients with facial paralysis are presented in Table 1. Representative participant quotes are provided in the text.

As is clear from Table 1, the participants missed a clear, evidence based care and rehabilitation pathway for patients with facial paralysis. Not all hospital departments had a standardized protocol for the care and rehabilitation of patients with FP. This was reflected in problems in transitions from the public to the private sector and from hospital to home. To quote a participant, what was needed was to "use research evidence to update the care practices." (P16) Further comments from the participants were, for example,

> *"The care and rehabilitation pathway from hospital to the private sector is not seamless. Hospitals should make a phone call to ensure that, before discharge, clients are referred to their own therapists or to home rehabilitation, to prevent breaks lasting for months when the rehabilitation window is optimal (P25).*
>
> *It would be important to create uniform practices, in which you could make use of evidence-based research knowledge and make sure that the care of stroke-induced facial paralysis patients is consistent. The uniform practices could help ensure safe continuity of patient care as well (P43)."*

Secondly, the study participants were concerned about the need to increase training and information on FP and to embed guidelines into practice. Many of the participants reported needs to learn more about the symptoms of FP and of the methods and equipment used in the care and rehabilitation of FP patients. To quote a few participants, "I quite seldom see patients with facial paralysis and the practices are not so well known to many of us" (P3); "No knowledge about the rehabilitation" (P17); "Increasing information would be good. I don't know what I should be able to do" (P32); and "More education. In my training they didn't teach us about the rehabilitation for facial paralysis at all" (P34).

Due to the experienced lack of competencies, the study participants suggested increasing training and bringing uniform guidelines to hospital departments. Facial paralysis should be included in healthcare studies, both during initial vocational education and later as part of continuing education programs. To quote, "Systematic training and written guidelines for the department" (P14). The study participants would appreciate further training on rehabilitation methods and equipment, as well as on nutrition, eating and mouth care of patients living with FP. They further suggested that the orientation of new employees working with neurological patients should include the basics of FP. Expertise of other professionals should be sought in this context. For example, "Adequate orientation for new employees, training given by physiotherapist, e.g. during the regular staff meetings" (P48); "More education for nurses on the degrees and symptoms of facial paralysis. We could have a speech therapist talking about their work, or a dietitian to deepen our knowledge of nutrition" (P19); "Training on the effects and potential rehabilitation interventions for different professional groups" (P22).

Increasing interprofessional collaboration was another development proposal put forward by the participants. Their suggestions involved meetings and more effective documentation to share information and work together to care for the patients. To give a few examples of participant contributions, "More information about the care and rehabilitation of facial paralysis patients interprofessionally and specifically involving different professional groups" (P30); "Sharing information and rehabilitation interventions among different professionals" (P34); "Developing the documentation on interprofessional mouth care" (P32), and:

> *"In our department, it is the speech therapists who are in charge of the rehabilitation in question, but I guess the system could be developed to involve other professional groups. Perhaps the nurses and physiotherapists and occupational therapists contribute too little. It would be more effective if everybody was somehow involved in training the facial muscles (P22)."*

Last, the study participants emphasized the importance of encouraging self-care and self-rehabilitation, and involving family members in the care and rehabilitation process. A rehabilitative approach should be adopted at the very onset of acute care and patients should be guided on how to perform facial exercises. To quote, "Videos for staff and patients to watch together in the guidance situation" (P8); "Starting self-care exercises already in the acute phase" (P32); and "Handing out information leaflets or giving instructions through videos on the net" (P34). According to the study participants, the role of family members or other support persons was significant after the patient's discharge, so hospital professionals should invest in informing and guiding families and other relevant people. The participants said, "It is important to guide and inform the family members. For example, they often bring patients food or tasty items of unsuitable texture" (P52), and "Paying attention to families' need for guidance and information at every stage of the rehabilitation process" (P54).

DISCUSSION

This article reports the experiences and development proposals of 115 nursing and rehabilitation professionals working with stroke patients exhibiting facial paralysis. The findings are based on statistical analysis of quantitative data and on inductive content analysis of healthcare professionals' responses to an open question on the development of the care and rehabilitation of facial paralysis patients. Nearly half of the study participants were nurses.

To sum up some of the main findings: More than half of the participants found that they were not familiar with the care or rehabilitation for FP. A minority of all participants had obtained any further training on the care of neurological patients after their initial education. Approximately half or more of the participants seemed undecided about the quality of current care and rehabilitation, guidance and equipment. A significant proportion of the participants acknowledged a lack of competencies in various relevant areas. Almost half of the participants reported that they could not confidently plan nursing goals for patients with FP or use relevant rehabilitative equipment. The participants proposed (1) a clear, evidence based care and rehabilitation pathway for patients with facial paralysis; (2) interprofessional and profession-specific training on FP to embed guidelines into practice; (3) Interprofessional collaboration; and (4) effective self-care and self-rehabilitation with the assistance of families and support persons.

The findings are in harmony with earlier research (Erogly et al., 2025; Tanlaka et al., 2023; Butler & Grobbelaar, 2017). It would seem that the knowledge base on the care and rehabilitation for stroke-induced facial paralysis is still fragmented. An effort should be made to bring together existing good practices and to establish evidence-based standardized guidelines internationally and nationally. This could be followed by a creation of care and rehabilitation pathways adapted to local and regional needs and resources, and by providing continuing education programs for professionals involved in the care of patients with FP. Interprofessional teamwork including joint training sessions, regular meetings, clarification of role ambiguities and more effective documentation is also necessary according to the findings of this study. Finally, an effort should be made to help patients and their support persons to become active participants in the recovery process. A rehabilitative approach should be adopted at the very beginning of acute care. All these actions can contribute to patient safety and ensure more equal health outcomes.

This study presents important information from the perspectives of nurses, practical nurses, public health nurses, physiotherapists, occupational therapists and speech therapists about the current level of care and rehabilitation of patients with stroke-induced facial paralysis. Despite the increasing prevalence of stroke and FP, the body of research on the topic is limited nationally and internationally, which makes this study relevant from the viewpoint of both citizens and research community. The generalizability of the quantitative results may be limited since the exact number of the target population is not known. Despite this, the study can provide important insights into the management of stroke-induced facial paralysis.

Further research is required to pinpoint the exact educational contents for interprofessional and profession-specific continuing education and to explore FP patients' and their families' expectations for their care, rehabilitation and guidance.

CONCLUSION

Healthcare professionals involved in the care and rehabilitation of patients with facial paralysis lack adequate knowledge of effective interventions and equipment. The creation of evidence-based standardized guidelines followed by interprofessional and profession-specific continuing education programs on the planning, implementation and evaluation of effective interventions is necessary.

- **Data Availability Statement:** Data (in the Finnish language) available on request from the authors.

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1. Healthcare professionals' development proposals for the care and rehabilitation of patients with facial paralysis

Reduced expressions	**Sub-categories**	**Generic categories**	**Main category**
Wish for uniform practices	Standardized uniform care protocol	Functional and clear care and rehabilitation pathway based on research evidence	Evidence-based development of the care, rehabilitation and guidance of FP patients and their families
Need to provide consistent care			
Need to use of evidence-based research			
No seamless care and rehabilitation pathways between public and private sector	Safe continuity of care and rehabilitation		
No phone contacts from hospital to ensure home rehabilitation			
Low-threshold approach to increasing knowledge and skills	Increasing information and training and embedding guidelines into practice	Improving competencies for various professionals caring for FP patients	
Learning care practices			
Information on the topic included in vocational qualification and Bachelor degree			
Continuing education			
Clear, uniform, written instructions/guidelines			
Adequate orientation for new staff			
Training for nurses and physiotherapists			
Eating and nutritional guidance			
Training on the degrees and symptoms of FP			
Training on the effects of FB and on rehabilitation options			
Learning about facial muscle training			
Training by speech therapists			
Training for occupational health services on FP			
Online courses			
Collaboration	Sharing information and practices	Increasing multiprofessional collaboration	
Discussion on care plans			
More multiprofessional and specific information about the care and rehabilitation			
Development of documentation			

Encouraging patients to undertake facial exercises	Encouraging self-care and self-rehabilitation	Guidance of patients and families to ensure high quality self-care and self-rehabilitation	
Videos watched with patients			
Information leaflets			
Videos on the net for patients			
Stressing the importance of independent training			
Guiding family members	Involving family members and other support persons		
Paying attention to families' needs for guidance and information			