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ORIGINAL REPORT

CLINICIANS' PERCEPTIONS OF MANUAL HANDLING POLICIES IN STROKE REHABILITATION: A QUALITATIVE FOCUS GROUP STUDY

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Objectives: **The professional literature guides manual handling in numerous health care settings. The effects of these guidelines on stroke rehabilitation and the clinical communication of health care professionals are unknown. This paper aims to investigate the perspectives of nurses and physiotherapists on handling guidelines in their professions to identify conflicts in opinions to provide optimum care to people with stroke.**

Design: **A qualitative focus group study.**

Methods: **Three focus groups were conducted. The participants were physiotherapists or nurses with 1 year of stroke care experience. The data were thematically analysed.**

Results: **Nineteen participants (12 physiotherapists and 7 nurses) were interviewed. The data analysis revealed 3 themes. First, "The application of handling in stroke rehabilitation" includes clinical reasoning and real-world handling practices. The second theme, "Physical Effects on Therapists," examines the long-term effects of manual handling on therapists, including work-related musculoskeletal disorders. The final theme, "Conflicts among health care professionals," investigates stroke rehabilitation equipment conflicts between nurses and physiotherapists.**

Conclusion: **The study concludes that stroke transfer guidelines in the specialised literature may impact health care professionals' perspectives. Conflicts among health care professionals can impair teamwork. Thus, health care professionals should work together as stroke rehabilitation teams to develop unified transfer guidelines that aid rehabilitation and avoid work-related musculoskeletal disorders.**

Key words: stroke rehabilitation; handling policies; work-related musculoskeletal disorders; physiotherapy; nursing.

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LAY ABSTRACT

Transfer training is a significant part of the care that physiotherapists and nursing professionals provide in stroke rehabilitation. In the context of transferring individuals with strokes, therapists regularly find themselves assuming various physically demanding positions, such as bending and twisting, to provide necessary assistance to the patient. As a consequence of the repetitive and physically demanding nature of this field of rehabilitation, work-related musculoskeletal disorders are common. The professional literature advises professionals to avoid work-related musculoskeletal disorders through manual handling. This study compared nurses' and physiotherapists' opinions on stroke rehabilitation handling guidelines, the "no-lift policy," and equipment utilisation. Three focus groups were held with 12 physiotherapists and 7 nurses. The findings showed high levels of back pain and physiotherapist-nurse conflict. These findings emphasise the need to unify handling guidelines from different professional literature sources to reduce work-related musculoskeletal disorders and resolve health care professionals' conflicts caused by different rules and guidelines in their professional literature.

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Health care professionals (HCPs) often engage in frequent and prolonged physical contact with patients (1–3). This typically leads to unnatural postures that promote work-related musculoskeletal diseases (WRMDs), especially low back pain (LBP) (2–4).

Many studies have investigated the prevalence of WRMDs among HCPs. Vieira et al. examined the prevalence and characteristics of WRMDs in physical therapists (PTs) by specialisation and workplace. The study found that PTs had a high rate of WRMDs in the lumbar back and neck (3). In line with this finding, a recent systematic review and meta-analysis of PTs' prevalence of WRMD showed that the lower back, thumb, neck, and shoulder were the most common areas (4).

The handling of people with stroke is an essential part of PTs' practice (5, 6). The results of systematic reviews show that many PTs with WRMDs suffered these injuries while lifting and transferring patients (7). Additional findings confirm that lifting and transferring patients, repetitive movements, awkward and static postures, physical load, treating a high volume of patients in a day, and working while injured are the main causes of job-related LBP in PTs (4).

In an effort to reduce the prevalence of WRMDs among PTs and nurses, manual handling guidelines have been established (6, 8, 9). However, the literature shows that nurses and PTs remain concerned about WRMDs regardless of these guidelines in their domains (2, 4, 10).

HCPs agree that the utilisation of equipment in stroke rehabilitation is effective for reducing WRMDs (11). However, nurses and PTs disagree on the use of stroke rehabilitation equipment. Nurses follow "no lift policies," while PTs do not (6–9, 12).

In stroke rehabilitation, PTs handle patients as part of their professional job. However, the physiotherapy literature recommends risk assessment before manually handling patients (13, 14). Other research studies suggest that rehabilitative equipment should be an alternative rather than a requirement (15–17). Only patients who cannot comply or provide aid during a transfer or who have substantial cognitive, perceptual, or behavioural problems should be lifted or transferred by PTs (6, 18, 19).

Neuroplasticity occurs after a cerebrovascular accident (CVA), which is why many PTs are reluctant to use equipment for stroke rehabilitation (20, 21). They stress the importance of allowing patients to practise transfers rather than remaining inactive, which increases the risk of learning non-use (22). This may explain why some PTs prefer patient movement during transfers over passive technological interventions.

The divergence of perspectives in this debate may stem from the inherent differences in the tasks and responsibilities of the nursing and physiotherapy professions. While PTs engage in physical patient handling as a crucial aspect of their professional responsibilities within stroke rehabilitation, nurses often focus on transferring patients between locations to facilitate the completion of many different tasks (8, 9, 12). This is not only due to the potential limitations of precise guidelines for neurological rehabilitation but also because physiotherapy is an independent profession that encourages PTs to make decisions based on clinical reasoning when determining their course of action.

The purpose of this study is to examine the perspectives of nurses and PTs on the handling of individuals with stroke with the aim of identifying discrepancies in their opinions to provide optimum care to people with stroke.

METHOD

Design

A qualitative descriptive method was used to study how PTs and nurses handle people with stroke. This study aimed to examine whether these 2 professional groups had different perspectives on how to address the growing problem of WRMDs in stroke rehabilitation (23).

This study utilised focus groups for data collection. This method was chosen because it facilitates the collection of opinions from people with common characteristics, such as people who work in the same institution and those with diverse experiences, such as working with patients at different stages of rehabilitation (24). All focus group participants provided written informed consent before participation. The local research ethics committee of the University of Tabuk, Saudi Arabia, approved the study (UT-81-05-2023).

Participants

The study included a convenience sample of PTs and nurses who were recruited from a local rehabilitation hospital and a neurorehabilitation private practice PT clinic. They worked in inpatient, outpatient, and community rehabilitation settings. The participants were selected after they replied to a recruiting email and met the eligibility requirements. The participants were PTs or nurses with at least 1 year of stroke care experience.

Procedure

Three focus groups were held between August and September 2023. The study included 19 clinicians who held 60–90-min sessions at their workplaces. The first focus group included 4 PTs and 3 nurses, whereas the second focus group included 4 PTs and 4 nurses. The final focus group included only 4 PTs.

Reviewing stroke rehabilitation handling guidelines and physiotherapy and nursing studies led to the development of a group interview guide (Appendix S1). Four stroke rehabilitation physiotherapists and nurses piloted the interview guide, focusing on comprehension with regard to the question style and structure. The final analysis excluded the interview results, and no changes were identified.

The interview guide included open-ended and probing questions. The questions were created to encourage discussion on the following topics: (*i*) the experiences of individuals in stroke rehabilitation; (*ii*) the initial perspectives of nurses and PTs on factors that facilitate or hinder handling in stroke rehabilitation; and (*iii*) the participants' perceptions of each other during stroke handling or transfer. All audio recordings of the focus groups were transcribed verbatim and verified.

To maintain trustworthiness, all focus group participants received electronic conversation summaries. Ten people replied by email. One participant suggested adding a debate topic to the summary, but 9 confirmed the accuracy of the summary without comment. The results remained unchanged regardless of any individual feedback. Warr states that focus groups are not designed to acquire individual viewpoints. Therefore, the participants should be informed during consent (25).

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Research team and reflexivity

The author (SA) was a licenced male physiotherapist consultant and associate professor in neurorehabilitation with a background in stroke rehabilitation and qualitative research. This background helped him connect with participants to facilitate and analyse the focus group discussion. AA was a female clinical nurse and held a PhD in nursing with experience in qualitative research. FA was a male clinical nurse and PhD student in community nursing.

SA and AA actively participated in discussions concerning individual assumptions and reflections, both prior to and during the stages of data collection and analysis. SA moderated all the focus groups, and FA acted as an assistant note-taker during the focus groups.

The author conducted the initial analysis, which was discussed with the observers and refined through continuous discussion and contributions. The trustworthiness of the study was strengthened by obtaining actual quotations from the participants.

Data analysis

Braun and Clarke's theme analysis was performed manually (26). Braun and Clarke recommended 6 phases: (*i*) familiarisation, including active reading to assess the depth and breadth of the data; (*ii*) coding, in which the researcher identified intriguing and relevant data for themes; (*iii*) linking the themes with all coded data; (*iv*) examining the coded data for cohesive and refined themes; (*v*) identifying topic titles and data; and (*vi*) reporting, including writing the final analysis and data themes.

The researcher initially reviewed the transcriptions of the focus group and then converted them into Excel spreadsheets for coding. The author (SA) and an assistant in data analysis (AA) independently coded the first focus group. This coding procedure labelled data segments in Excel spreadsheet cells. The authors then collaborated on the final code. The remaining 2 focus groups used this final coding. Table SI presents the final coding.

To generate initial themes and subthemes, it was necessary to first identify patterns of meaning within the codes to establish subthemes, identify patterns of meaning across the subthemes to establish themes, and finally verify the potential themes against the dataset to determine how accurately they described the data. To protect their anonymity, the participants were allocated a participant number code (P#).

To enhance research trustworthiness, participant checks, triangulation, and reflexivity were used. Participant checks were conducted by distributing summaries of the focus group conversations to all participants. Clinicians from the public and private sectors who worked with patients in inpatient rehabilitation and chronic care were recruited for participant triangulation. Each session ended with debriefings to encourage reflexivity.

Table I. Overview of the demographic and professional characteristics of the 19 clinicians who actively engaged in the focus group sessions

Characteristic	Number	Total (%)
Gender		
Male	11	57.89
Female	8	42.11
Total	19	100
Profession		
Physical therapists	12	63.16
Nurses	7	36.84
Total	19	100
Primary setting		
Inpatient rehabilitation	9	47.37
Outpatient rehabilitation	7	36.84
Both	3	15.79
Total	19	100
Number of individuals with stroke/day (Mean)	4.53/day	

RESULTS

Table I provides an overview of the demographic and professional characteristics of the 19 clinicians who actively engaged in the focus group sessions. Examination of the 3 focus group sessions yielded the identification of 3 overarching themes and 4 subthemes, as presented in Table II.

Theme 1: Identifying patterns of practice

Transferring training in stroke rehabilitation is essential for diverse patients. Many participants consistently utilised the transfer approach in stroke rehabilitation. Every member of the group hoped to integrate skills in handling and transferring into stroke rehabilitation. The participants agreed that this approach would require continuous practice to achieve success.

> I can say that about one-third of the duration of my treatment sessions with stroke patients is dedicated to transfer training. (P3, focus group1, female nurse)

The need to comprehend the logic behind this particular approach led to the emergence of the subtheme of clinical reasoning. The participants indicated that transfer and handling could have a significant impact on the physical benefits of stroke rehabilitation. For instance, enhancing functional independence could increase patients' motivation, self-esteem, and social participation outside of rehabilitation.

> In my opinion, transfer and handling enable the consideration and implementation of approaches to help people with stroke dress, toilet, relieve pressure, and function independently. (P1, focus group 2, male PT)

> I guess what I've always believed is that the ability to transfer frequently motivates further rehabilitation, frequently leading to sit-to-stand training and gait re-education. (P4, focus group 3, female PT)

Theme 2: Physical effects on therapists

It is obvious that people who have experienced strokes require the assistance of therapists who can effectively perform transfers. This intervention encourages regular movement, body segment alignment, and muscle tone and prevents abnormal postures. However, repetitive assistance and therapists' physical changes during manual handling may cause WRMDs over time. The participants

Table II. Main themes and subthemes

Theme	Subtheme
Theme 1: Identifying pattern of practice	Subtheme 1: Clinical reasoning.
Theme 2: Physical effects on the therapists.	Subtheme 1: Incidence of WRMDs.
	Subtheme 2: Risk factors.
Theme 3: HCPs' conflicts on manual handling guidelines.	Subtheme 1: Using equipment.

also identified patient factors such as muscle weakness, decreased balance, aphasia or dysphasia, and physical changes following stroke. The participants discussed WRMDs in the first subtheme.

> One of the problems associated with implementing the transfer of individuals is the strain placed on the lumbar spine, which increases the risk of developing LBP. This pain can occur as a consequence of sudden trauma or as a cumulative impact over time. (P7, focus group 1, female nurse)

> In my case, patient-related issues, such as impaired balance, may necessitate assuming uncomfortable positions throughout the process of transferring patients. (P4, focus group 3, male PT)

The discussion of the most significant risk factors associated with the development of WRMDs during patient transfers gave rise to subtheme 2, which focuses on the risk factors associated with WRMDs. One of the participants provided a comment on the common risk factors associated with patient transfer:

> From my perspective, the improper positioning of therapists, the imposition of large loads on the therapists' spines, and patient-related issues, such as impaired balance, are significant contributors to the identified risks. (P8, focus group 2, male PT)

Theme 3: HCP conflicts about manual handling guidelines

The final theme involved the use of manual handling guidelines in the nursing and physiotherapy professions. All participants, including nurses and PTs, highlighted the advantageous effects of these recommendations in their field. They also explained how these guidelines might impact approaches to stroke rehabilitation.

> In my view, guidance about how to handle stroke patients takes precedence over personal opinions with the objective of integrating many perspectives to enhance the organised transportation of stroke patients. (P1, focus group 2, male nurse)

The use of appropriate equipment is one of the most beneficial aspects of manual handling guidelines. Many participants, especially nurses, note that hoists, sliding aids, and other specialty devices substitute for personal handling. They assert that handling aids should be employed wherever possible to reduce injury. The participants supported the use of stroke rehabilitation equipment because it may help address workplace challenges such as staff shortages, injuries, and dysfunctional teamwork:

> When checking my patient workload, I would use various patient transfer devices to minimise spinal column strain, ensure safe transfer procedures, and provide enough attention to numerous patients. (P6, focus group 2, female nurse)

> The utilisation of equipment during patient transportation can effectively address several challenges within the working environment. (P5, focus group 1, male nurse)

While many participants acknowledged the importance and benefits of using equipment in stroke rehabilitation, physiotherapy participants' attitudes towards equipment should be considered an option of last resort rather than an essential part of the rehabilitation process. Furthermore, other physiotherapists in different focus groups consistently stated their reluctance to employ equipment in stroke rehabilitation because neuroplasticity begins quickly after a stroke. The participants preferred active patient interaction during transfers over passive techniques such as equipment.

> As a physiotherapist, I find that patients who cannot actively participate in or contribute to any component of a transfer or who have major cognitive, perceptual, or behavioural impairments are suitable for hoisting. (P1, focus group 1, female PT).

> Lifting equipment does not provide any form of motor, cognitive, or perceptual stimulation to the patient. Early physical activity assists [the patient] in regaining voluntary motor control. (P7, focus group 2, female PT).

DISCUSSION

This study revealed a divergence of opinions between nurses and PTs on manual handling. This study is the first investigation of stroke handling approaches employed by nurses and PTs.

The handling of people in stroke rehabilitation and its implications for HCPs

All participants in stroke rehabilitation considered patient handling crucial (5, 6, 8, 9). Further investigation is needed to investigate the efficacy of the approach used for stroke rehabilitation. If sufficient data are available to formulate standardised guidelines for manual handling, this may decrease variation among HCPs (2, 4, 10). This study revealed a divergence of opinions between nurses and PTs about the impact of manual handling on stroke rehabilitation.

The significant frequency of WRMDs, particularly LBP, in all focus groups was expected. Due to the frequent need to bend and twist while helping a person with a stroke, HCPs often develop WRMDs (1, 2, 4, 6, 7, 10). This study found that HCPs often experience WRMDs, especially LBP. This suggests that manual handling guidelines may not reduce WRMDs or that HCPs may not be able to comply with these guidelines. Both possibilities justify further research on the best approaches to reduce WRMDs while focusing on rehabilitation.

The conflict between HCPs

Research in physiotherapy and nursing has found variations in the way professionals handle people with stroke (6, 8, 9). This study found that PTs and nurses transferred people with stroke differently. Diversity in a stroke rehabilitation team may cause team members to prioritise the maintenance of their own dignity over patient care. Furthermore, during periods of conflict, professionals may be motivated to safeguard their respective domains, which can lead to breakdowns in collaborative efforts (6, 8, 19).

To reduce the potential for WRMDs during the handling of a person with stroke, it is recommended that rehabilitation staff consider the use of hoists, sliding aids, and other specialised equipment as potential substitutes for manual handling (6, 9, 11, 12). However, members of the nursing and physiotherapy professions have quite different views concerning the use of equipment (6, 9).

The focus group participants had differing views on the use of equipment to replace manual handling in their practice. For instance, many nurses support the use of equipment to handle a person with stroke. They suggest that using equipment instead of physical handling can protect rehabilitation staff from WRMDs. In contrast, PTs remark that increased equipment use slows stroke recovery. They believe this because their job requires manual patient transfers to help patients become functionally independent. Consequently, PTs contend that manual transfers yield superior outcomes compared to the outcomes achieved through the use of equipment (6). One possible explanation for the divergence in opinions between nurses and PTs may be the contrasting guidance provided in their respective professional publications pertaining to transfers (6, 8, 9, 12). While nurses are strongly recommended to utilise equipment (8, 9, 12), PTs are urged to facilitate patient activity during transfers without relying on equipment (6).

The findings of this study can be transferred to different scenarios despite the lack of qualitative studies on this topic. This work may also inspire qualitative stroke rehabilitation research in numerous professions to develop uniform manual handling guidelines to prevent WRMDs and address inconsistencies among handling guidelines in the professional literature.

Limitations

A major limitation of this study is the exclusion of some HCPs involved in stroke rehabilitation. However, this study operationalised the richness of the data by providing details about the volume of data supplied by participants from 2 separate professions, namely, physiotherapy and nursing, in the focus groups. Furthermore, the inclusion of nurses and PTs in this study is justified due to their significant involvement in the transfer of people with stroke. This involvement forms a primary component of their professional responsibilities. Therefore, future research should investigate the approaches used to transfer people with stroke from the perspective of other staff members.

Another limitation is that each focus group included physiotherapists and nurses from the same workplace. Although the participants were invited to think differently, this issue may have affected the results by preventing them from doing so. Therapists from different practices may have missed an opportunity to engage in conversation.

Finally, it would have been interesting to examine the relationship between the time spent working with people with stroke and the prevalence of LBP as well as the effects of LBP on participants' perspectives and professional ranks.

Conlusion

Significant discrepancies were identified in the perspectives of nurses and PTs regarding the influence of equipment on stroke rehabilitation and approaches to mitigate LBP among HCPs. Further investigation is warranted to explore the possible adverse consequences of the increased utilisation of equipment and other forms of help in the context of stroke rehabilitation. In addition, it is crucial to explore efficacious strategies for mitigating WRMDs.

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The transcripts and audio files of the focus groups are not publicly accessible to reduce the potential risk of identifying individuals involved in the study.

The author has no conflicts of interest to declare.

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