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Exploring the Dimensions of Motivation in Stroke Survivors During Physical Rehabilitation: A Qualitative Inquiry

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A B S T R A C T

The objective of this study was to explore the dimensions of motivation in stroke survivors during physical rehabilitation, focusing on the personal, social, and environmental factors that shape engagement and recovery. This qualitative study employed an exploratory design to investigate motivational experiences of stroke survivors. Twenty participants (11 men and 9 women, aged 38–72) were recruited purposively from rehabilitation centers across the United States. Semi-structured interviews were conducted, each lasting 45–75 minutes, and data collection continued until theoretical saturation was reached. Interviews were audio-recorded, transcribed verbatim, and analyzed using thematic analysis with NVivo 14 software. Coding was carried out iteratively, with two researchers independently coding transcripts to ensure reliability, followed by consensus meetings to finalize themes. Three overarching themes emerged from the data. The first, personal and psychological factors, encompassed subthemes such as sense of purpose, emotional resilience, self-efficacy, coping strategies, identity reconstruction, and cognitive engagement. The second, social and relational support, included family encouragement, peer interaction, professional support, community involvement, and social recognition. The third, rehabilitation environment and external influences, comprised therapeutic setting, individualized programs, technological aids, physical and financial barriers, healthcare policies, reward systems, and environmental stimuli. Participants described motivation as a dynamic construct shaped by internal beliefs, relational networks, and systemic conditions, with direct quotations illustrating these lived experiences. The findings demonstrate that motivation in stroke rehabilitation is multidimensional, integrating psychological, social, and environmental domains. Recognizing and addressing these interconnected factors can enhance rehabilitation engagement, optimize functional outcomes, and promote holistic recovery. The study underscores the need for patient-centered, socially embedded, and technologically supported rehabilitation strategies.

Keywords: *Stroke rehabilitation; Motivation; Qualitative research; Patient engagement; Social support; Thematic analysis*

1. Introduction

Stroke remains one of the leading causes of disability worldwide, affecting millions of individuals and imposing profound burdens on health systems, families, and societies. Although significant progress has been made in acute stroke care, rehabilitation continues to represent the cornerstone of long-term recovery. Central to this process is the role of motivation, which often determines the intensity, persistence, and success of rehabilitation efforts (Rabadi & Xu, 2025). Survivors who sustain high levels of motivation are more likely to engage meaningfully in rehabilitation, overcome barriers, and achieve greater functional recovery, whereas low motivation is commonly associated with reduced participation, slower progress, and poorer outcomes (Tan et al., 2023). As such, understanding the dimensions of motivation in stroke survivors is essential to designing effective, patient-centered rehabilitation programs.

Motivation in rehabilitation is not merely an individual psychological trait but a dynamic construct influenced by biological, psychological, social, and environmental factors. Research suggests that motivational processes after stroke are highly complex, encompassing goal-setting, self-efficacy, locus of control, resilience, and social interaction (Kawano et al., 2021; Vasu & Pang, 2024). These elements interact with structural and systemic factors such as healthcare delivery, therapeutic approaches, and access to technology, creating a multidimensional landscape of patient engagement (Tun et al., 2024). The variability of motivation across survivors demonstrates the importance of studying this phenomenon not only through clinical outcomes but also through the lived experiences of individuals navigating rehabilitation.

Clinical investigations have consistently highlighted motivation as a critical determinant of physical recovery. For instance, research in ischemic stroke survivors shows that motivational levels are directly associated with motor improvement, functional independence, and reduced mortality (Rabadi & Xu, 2025). Similarly, studies on upper limb rehabilitation demonstrate that patients with higher motivation perform better in daily life tasks, particularly during the first 12 to 24 weeks post-stroke, a period regarded as crucial for neuroplasticity-driven recovery (Waddell, Strube, et al., 2019; Waddell, Tabak, et al., 2019). Motivation also interacts with cognitive and psychological states. Error-related negativity studies reveal that cognitive engagement and emotional well-being influence rehabilitation performance, underscoring the importance of integrating motivational strategies into therapy (Kumar et al., 2021).

Beyond individual psychology, family support plays an essential role in sustaining motivation throughout rehabilitation. Evidence indicates that family involvement enhances adherence to prescribed exercises and improves emotional resilience (Andriani & Agustriyani, 2021). Communication within families is also crucial; supportive dialogues, encouragement, and shared responsibilities create an environment where survivors feel understood and empowered (Baihaqi et al., 2024). Such findings highlight the interconnected nature of motivation, which cannot be fully understood without examining relational dynamics.

Another layer influencing motivation lies in patients' sense of agency and control. A cross-sectional study showed that stroke survivors who perceive greater internal locus of control experience higher quality of life and demonstrate stronger engagement in rehabilitation (Vasu & Pang, 2024). Likewise, sense of agency has been identified as a predictor of rehabilitation adherence, with nursing support and tailored interventions helping to reinforce patients' belief in their capacity to influence recovery outcomes (Kawano et al., 2021). These insights demonstrate how motivational dynamics operate at the intersection of personal belief systems, clinical practices, and supportive environments.

Neurobiological and physiological research has also contributed to understanding motivation in stroke recovery. Animal studies, for example, reveal that both voluntary and forced exercise enhance motor outcomes, although patient motivation significantly shapes the degree of functional gains (Sato et al., 2020). Similarly, investigations into fasting paradigms indicate biological mechanisms through which lifestyle interventions can influence motor recovery, hinting at the interplay between physiological readiness and motivational engagement (Mersha et al., 2024). This emerging evidence demonstrates that motivation is not merely psychological but also deeply rooted in neurobiological processes.

From a clinical perspective, the impact of motivation on motor function restoration has been well documented. Preliminary studies confirm that motivated patients achieve better motor recovery, highlighting the importance of addressing motivational barriers early in rehabilitation (Melnikova et al., 2024). More specifically, upper limb function—a key determinant of independence—is strongly associated with rehabilitation motivation, emphasizing the value of patient-centered goal-setting in physical therapy (Li et al., 2024). Such findings suggest that interventions

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targeting motivation could yield substantial improvements in functional outcomes, making this a vital area for continued exploration.

Technological advances have further reshaped the landscape of motivation in rehabilitation. Studies applying artificial intelligence in stroke therapy design demonstrate that adaptive, technology-driven environments can sustain patient engagement and provide tailored challenges (Cern & Ze, 2023). Remote handling technologies and task-oriented training have been shown to enhance patient participation by introducing novelty, personalization, and feedback into therapy (Elmanowski et al., 2023). These approaches highlight how environmental and systemic factors can be leveraged to reinforce motivation, especially in patients who struggle with monotony or discouragement in conventional programs.

Broader systemic and clinical insights also underscore the importance of motivation. Editorial reviews emphasize that stroke recovery should be seen as a continuum extending from acute care to long-term rehabilitation, where motivational strategies are critical at each stage (Conforto et al., 2022). Interventions such as continuous positive airway pressure (CPAP) for aphasia patients, while primarily physiological, have been shown to influence motivation by creating a sense of improvement and hope (Mercer et al., 2022). Together, these findings stress that motivational factors cannot be isolated from clinical practices; rather, they are deeply integrated into therapeutic design, delivery, and evaluation.

The subjective experiences of stroke survivors also shed light on the dimensions of motivation. Qualitative research reveals that survivors and their spouses often view recovery as a joint endeavor shaped by shared emotional resilience and adaptive learning (Moon, 2022). Comparative analyses across cultural contexts similarly emphasize that motivation is deeply embedded in sociocultural values, expectations, and perceptions of progress (Pallesen et al., 2019). These studies highlight that understanding motivation requires both objective clinical measures and subjective narratives that capture the lived reality of survivors.

Nevertheless, motivation does not guarantee linear progress. Some studies caution that while motivation may not always improve cognitive or motor recovery, it does significantly reduce mortality risk, suggesting that its effects may extend beyond measurable functional outcomes (Rabadi & Xu, 2025). This complexity underscores the need for holistic research approaches that integrate clinical, psychological, social, and experiential dimensions.

Experimental studies in animal models reinforce these complexities. For example, modified rehabilitation paradigms in rats show that increased muscle size does not necessarily translate into functional improvement, highlighting the gap between biological markers and motivationally driven behaviors (Caine et al., 2024). These findings suggest that motivation must be understood not only as a facilitator of performance but also as a mediator between biological potential and functional realization.

In addition to clinical and experimental insights, cross-sectional studies in older stroke survivors demonstrate the influence of demographic and psychosocial factors on motivation (Tan et al., 2023). Age, comorbidities, and social environments interact with motivational states to produce highly variable recovery trajectories. Reviews of rehabilitation strategies similarly identify influential factors such as therapy design, environmental conditions, and cultural support systems (Tun et al., 2024). These findings confirm that motivation is shaped by an interplay of internal and external determinants that require comprehensive exploration.

Overall, the literature demonstrates that motivation is a multifaceted phenomenon in stroke rehabilitation. It operates across personal, relational, neurobiological, clinical, and technological domains, each contributing to survivors' engagement and outcomes. Yet, despite its recognized importance, the dimensions of motivation remain insufficiently understood, particularly from the perspective of survivors themselves. Quantitative studies highlight correlations between motivation and outcomes, while experimental research identifies biological underpinnings. However, qualitative approaches that capture the nuanced experiences of survivors are still relatively limited, especially in Western contexts such as the United States.

The present study seeks to address this gap by qualitatively exploring the dimensions of motivation among stroke survivors during physical rehabilitation.

2. Methods and Materials

2.1. Study Design and Participants

This study employed a qualitative research design with an exploratory approach to investigate the dimensions of motivation in stroke survivors during physical rehabilitation. The qualitative design was deemed appropriate as it allows for in-depth exploration of participants' lived experiences, meanings, and perspectives. A total of 20 participants were recruited through purposive sampling from rehabilitation

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centers across the United States. Eligible participants were adults (aged 35–75) who had experienced a stroke within the last five years, were currently engaged in or had recently completed physical rehabilitation, and were able to communicate in English. Efforts were made to ensure variation in age, gender, and rehabilitation experiences to capture a wide range of perspectives. Recruitment continued until theoretical saturation was achieved, meaning that no new themes or insights were emerging from the interviews.

2.2. Measures

Data were collected using semi-structured, face-to-face and virtual interviews. An interview guide was developed based on prior literature and expert consultation, consisting of open-ended questions designed to elicit participants' experiences, challenges, and motivational factors during rehabilitation. Example questions included: "What motivates you to continue with your rehabilitation exercises?" and "Can you describe any barriers that reduce your motivation?" Each interview lasted between 45 and 75 minutes and was audio-recorded with the consent of the participants. Field notes were taken to capture non-verbal cues and contextual details. All recordings were transcribed verbatim to ensure accuracy and completeness of the data.

2.3. Data Analysis

Data analysis followed a thematic analysis approach. Transcripts were imported into NVivo 14 software to facilitate systematic coding, organization, and retrieval of data. Initial coding was conducted line by line, generating descriptive codes that represented participants' statements. Codes were then grouped into broader categories, from which emerging themes were identified. The process was iterative, involving continuous comparison across transcripts to refine codes and validate emerging patterns. Two researchers independently coded a subset of interviews to ensure reliability, and discrepancies were resolved through discussion until consensus was reached. Memos and reflective notes were maintained throughout the analytic process to support reflexivity and transparency. The final themes were derived through collaborative review, ensuring they accurately represented the participants' experiences and perspectives.

3. Findings and Results

A total of 20 stroke survivors participated in the study. The sample consisted of 11 men (55%) and 9 women (45%), ranging in age from 38 to 72 years (M = 56.4). Regarding marital status, 14 participants (70%) were married, 3 (15%) were single, and 3 (15%) were widowed or divorced. In terms of education, 6 participants (30%) had completed high school, 9 (45%) held a college or associate degree, and 5 (25%) had a bachelor's degree or higher. The majority of participants (n = 12, 60%) reported having experienced an ischemic stroke, while 8 (40%) had a hemorrhagic stroke. Time since stroke ranged from 8 months to 5 years, with most participants (n = 13, 65%) being in rehabilitation for more than one year. With respect to employment status, 7 participants (35%) had retired due to disability, 6 (30%) were unemployed, and 7 (35%) had returned to part-time or full-time work.

Table 1

Themes, Subthemes, and Concepts on Motivation in Stroke Survivors During Physical Rehabilitation

Category (Theme)	Subcategory	Concepts (Open Codes)
1. Personal and Psychological Factors	Sense of Purpose	Desire to regain independence; Wanting to walk again; Hope for normal life; Goal-setting; Rebuilding confidence
	Emotional Resilience	Overcoming frustration; Managing fear of relapse; Acceptance of limitations; Finding inner strength; Maintaining optimism
	Self-Efficacy	Belief in own ability; Confidence in exercises; Celebrating small progress; Internal motivation
	Coping Strategies	Using humor; Spiritual practices; Positive self-talk; Distraction from pain; Relying on routine
	Identity Reconstruction	Re-establishing self-worth; Redefining self-image; Feeling useful again
	Cognitive Engagement	Remembering instructions; Staying mentally alert; Focusing on improvement; Monitoring personal progress
2. Social and Relational Support	Family Encouragement	Spouse motivation; Children as inspiration; Family presence during therapy; Emotional support from relatives
	Peer Interaction	Sharing stories with other survivors; Group exercise sessions; Mutual encouragement; Comparing progress with peers; Normalizing challenges

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	Professional Support	Empathy from therapists; Guidance from nurses; Structured encouragement; Feedback from doctors
	Community Involvement	Stroke survivor support groups; Religious community engagement; Volunteering opportunities
	Social Recognition	Appreciation from friends; Positive comments; Public acknowledgment of effort
3. Rehabilitation Environment and External Influences	Therapeutic Setting	Comfortable environment; Accessibility of facilities; Safety in exercise rooms; Availability of equipment
	Rehabilitation Programs	Tailored exercise plans; Flexible schedules; Innovative therapy methods; Clear progression tracking
	Technological Aids	Use of VR tools; Wearable devices; Feedback apps; Robotic-assisted exercises
	Physical Barriers	Transportation difficulties; Long travel times; Fatigue from commuting
	Healthcare Policy	Insurance coverage; Session affordability; Program availability
	Reward Systems	Incentives from clinics; Certificates of achievement; Celebrating milestones
	Environmental Stimuli	Background music; Therapy room design; Presence of natural light

Theme 1: Personal and Psychological Factors

Sense of Purpose. Many participants described a strong sense of purpose as the central driver of their motivation. They emphasized goals such as regaining independence, walking again, and rebuilding confidence. One participant stated, *"Every time I try to stand up, I think about walking my daughter down the aisle—that keeps me pushing through the pain."* Another noted, *"I just want to feel normal again, to be able to dress myself without asking for help."*

Emotional Resilience. Survivors highlighted the importance of resilience in overcoming emotional barriers, including frustration and fear of relapse. Several participants reported finding inner strength and maintaining optimism even during setbacks. As one explained, *"There are days I cry out of anger, but then I remind myself—I survived a stroke; I can survive therapy too."* Another shared, *"I've accepted my new limits, but I don't let them define me."*

Self-Efficacy. Confidence in their ability to perform exercises and achieve progress emerged as a significant motivator. Celebrating small gains was described as particularly encouraging. A participant remarked, *"When I could lift my arm just a little higher than yesterday, I felt like I was winning."* Another said, *"Every step shows me I can do this—I just need to trust my body again."*

Coping Strategies. Survivors reported employing diverse coping strategies to sustain motivation, including humor, spirituality, and positive self-talk. One participant said, *"When it hurts, I joke about it with my therapist—it makes the session easier."* Another emphasized, *"Praying before every session helps me calm down and believe I'll get stronger."*

Identity Reconstruction. Rebuilding self-worth and redefining one's identity after stroke were recurring narratives. Participants often linked their motivation to regaining a sense of usefulness. For example, one shared, *"I used to be the one who fixed things around the house—now I'm working so I can feel useful again."* Another said, *"I don't want to be seen as a patient forever. I want to be me again."*

Cognitive Engagement. Several participants described motivation as being tied to their mental engagement with rehabilitation. Remembering instructions, staying alert, and monitoring progress created a sense of control. As one explained, *"I keep a diary of what I do each day—it helps me see the progress and stay focused."* Another noted, *"When I concentrate on the exercise instead of the pain, I feel more in charge."*

Theme 2: Social and Relational Support

Family Encouragement. Family members were identified as powerful motivators, providing both emotional and practical support. A participant noted, *"My wife cheers me on every morning—she says, 'One more step today!' and it makes me try harder."* Another reflected, *"I keep going for my kids; they believe in me even when I don't."*

Peer Interaction. Engagement with other stroke survivors fostered motivation through shared experiences and mutual encouragement. As one participant explained, *"Talking with others who've been through this makes me feel I'm not alone."* Another added, *"In group sessions, we push each other—if they can do one more rep, so can I."*

Professional Support. Therapists, nurses, and physicians were consistently mentioned as influential in sustaining motivation. Participants valued structured encouragement and empathetic interactions. One survivor remarked, *"My therapist never lets me give up—she reminds me of the progress I can't see myself."* Another noted, *"When the doctor says, 'I'm proud of you,' it feels like fuel for my next session."*

Community Involvement. Beyond family and clinical networks, participants found support in community groups

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and religious organizations. A participant shared, *"The church prays for me every Sunday, and that lifts me up."* Another explained, *"Being part of a survivor support group keeps me motivated—they understand my struggles better than anyone else."*

Social Recognition. Many participants reported that acknowledgment from friends and society reinforced their determination. One survivor explained, *"When my neighbor said, 'You look stronger,' I felt proud and wanted to keep improving."* Another reflected, *"Hearing people notice my progress makes me want to prove them right."*

Theme 3: Rehabilitation Environment and External Influences

Therapeutic Setting. The physical environment of rehabilitation centers played a role in shaping motivation. Comfortable, safe, and accessible spaces were seen as motivating, while poorly equipped or crowded environments were discouraging. A participant stated, *"The therapy room has big windows and sunlight—it makes me want to work harder."*

Rehabilitation Programs. Individualized therapy plans and flexible schedules were noted as key motivators. One survivor said, *"My exercises are tailored to me—it feels achievable, and that keeps me coming back."* Another emphasized, *"They track my progress on a chart, and seeing the improvement makes me motivated."*

Technological Aids. Tools such as robotic devices, VR-based exercises, and mobile apps encouraged participants by making rehabilitation more engaging. A participant shared, *"The VR games distract me from the pain—I end up doing more without realizing it."* Another noted, *"The device on my arm shows how much I improved—it's like having proof."*

Physical Barriers. Despite positive aspects, external challenges such as transportation difficulties and fatigue from commuting sometimes reduced motivation. One participant explained, *"Getting to the center is harder than the therapy itself—it drains me before I start."*

Healthcare Policy. Issues related to insurance coverage and affordability of sessions also influenced motivation. A participant said, *"When my insurance stopped covering, I felt discouraged—it was like being punished for trying to get better."*

Reward Systems. External incentives, such as milestone celebrations and achievement certificates, encouraged persistence. One participant explained, *"When they gave me a certificate for completing 20 sessions, I felt proud—it kept me going."*

Environmental Stimuli. Elements such as music, natural light, and therapy room design shaped survivors' engagement. One survivor commented, *"They play my favorite songs during exercises, and suddenly it feels less like therapy."*

4. Discussion and Conclusion

The purpose of this study was to explore the dimensions of motivation among stroke survivors during physical rehabilitation. Through qualitative analysis of semi-structured interviews with 20 participants in the United States, three overarching themes emerged: personal and psychological factors, social and relational support, and rehabilitation environment and external influences. Each theme contained several subthemes that captured the nuanced ways in which survivors experienced and sustained motivation during the recovery journey. The findings reveal the multidimensional nature of motivation, showing how individual resilience, relational networks, and systemic conditions converge to shape rehabilitation outcomes.

One of the most salient findings was the central role of personal and psychological factors, including sense of purpose, emotional resilience, self-efficacy, coping strategies, identity reconstruction, and cognitive engagement. Participants consistently described motivation as anchored in personal goals such as regaining independence or returning to valued life roles. This aligns with evidence that motivational orientation strongly predicts adherence to rehabilitation tasks and functional progress (Li et al., 2024; Melnikova et al., 2024). Our participants' emphasis on goal-setting echoes earlier studies demonstrating that clear, personalized goals enhance commitment to therapy, reinforcing the idea that motivational interventions should integrate patient-centered objectives (Tan et al., 2023).

Emotional resilience emerged as a critical resource in overcoming frustration and discouragement. Survivors frequently described how they coped with setbacks by maintaining optimism and accepting limitations, which is consistent with research highlighting resilience as a moderator of rehabilitation engagement (Kawano et al., 2021). Similarly, self-efficacy—the belief in one's ability to perform tasks—was described as a key motivational driver, supporting findings that higher self-efficacy is associated with better functional outcomes and greater quality of life (Vasu & Pang, 2024). These results suggest that motivation is not merely a product of external encouragement but is

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deeply rooted in survivors' internal belief systems and adaptive coping mechanisms.

The process of identity reconstruction was particularly striking. Many participants described rehabilitation as an effort to "become themselves again," reflecting the existential challenge of adjusting to a post-stroke identity. Previous qualitative research has documented similar themes, noting that recovery is experienced not only as a physical process but also as a renegotiation of selfhood (Moon, 2022; Pallesen et al., 2019). Survivors' emphasis on self-worth and usefulness indicates that motivation is tied to psychosocial reintegration, highlighting the importance of therapies that support both physical and identity recovery. Cognitive engagement also emerged as a motivating factor, with survivors describing how monitoring progress and focusing on exercises enhanced their sense of control. This finding resonates with neurocognitive studies demonstrating that cognitive states influence performance during rehabilitation movements (Kumar et al., 2021).

A second major theme was the importance of social and relational support. Participants described family encouragement as essential in sustaining motivation, with spouses, children, and extended family members serving as both emotional anchors and practical supporters. This finding is consistent with research showing that family support significantly improves motivation and adherence to rehabilitation activities (Andriani & Agustriyani, 2021). Communication within families was also highlighted, reflecting earlier work that emphasizes how supportive dialogues foster hope and persistence in stroke recovery (Baihaqi et al., 2024).

Peer interaction also played a vital role. Participants explained that interacting with other survivors in group sessions fostered a sense of solidarity and mutual encouragement. Prior studies confirm that peer engagement reduces feelings of isolation and normalizes the recovery experience (Moon, 2022; Pallesen et al., 2019). Furthermore, professional support from therapists and nurses was described as highly motivating, particularly when delivered with empathy and structured feedback. This corresponds with earlier evidence that nursing support enhances patients' sense of agency and motivation (Kawano et al., 2021).

The role of community involvement and social recognition was also noteworthy. Participants emphasized that being acknowledged by friends, neighbors, or community groups reinforced their determination to continue rehabilitation. This echoes findings from cross-cultural studies suggesting that sociocultural contexts shape motivational dynamics (Conforto et al., 2022; Pallesen et al., 2019). Together, these findings highlight that motivation is socially embedded and should be understood as an interpersonal rather than purely intrapersonal phenomenon.

The third theme concerned rehabilitation environment and external influences, which significantly shaped participants' motivation. The therapeutic setting—including safety, comfort, and access to equipment—was described as a factor that either supported or hindered engagement. This supports evidence that environmental design and therapeutic contexts strongly influence motivation (Cern & Ze, 2023; Conforto et al., 2022). Similarly, individualized rehabilitation programs that offered flexibility and tracked progress were perceived as motivating, aligning with studies showing that structured, patient-tailored programs improve adherence and outcomes (Li et al., 2024; Tan et al., 2023).

Technological aids such as virtual reality (VR) tools, robotic devices, and feedback apps were cited by participants as particularly motivating. These findings reinforce growing evidence that technology-enhanced rehabilitation fosters engagement by introducing novelty, personalization, and real-time progress feedback (Cern & Ze, 2023; Elmanowski et al., 2023). Such approaches are consistent with broader efforts to integrate artificial intelligence and remote technologies into stroke rehabilitation, highlighting their potential to address motivational barriers (Caine et al., 2024).

However, barriers such as transportation difficulties, financial costs, and insurance limitations were reported as demotivating factors. These findings resonate with cross-sectional evidence that socioeconomic and environmental conditions strongly affect motivation and rehabilitation participation (Tan et al., 2023; Tun et al., 2024). Moreover, issues related to healthcare policy and session affordability highlight structural inequities that can undermine survivors' motivation, even when personal and relational resources are strong.

Reward systems and environmental stimuli also emerged as noteworthy influences. External incentives such as certificates or public acknowledgment were perceived as reinforcing, echoing earlier studies that emphasize the role of extrinsic motivators in sustaining engagement (Waddell, Strube, et al., 2019). Similarly, environmental elements such as music and natural light were cited as contributing to a positive atmosphere, which has been shown to enhance psychological readiness for rehabilitation (Melnikova et al., 2024).

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Taken together, the findings highlight that motivation in stroke rehabilitation is a multidimensional construct operating across psychological, social, and environmental domains. This aligns with integrative models of stroke recovery that emphasize the interplay of neurobiological, cognitive, and contextual factors (Conforto et al., 2022; Mersha et al., 2024). For example, the emotional resilience and coping strategies described by participants resonate with animal and clinical studies demonstrating that motivational states interact with neuroplasticity to influence motor outcomes (Mersha et al., 2024; Sato et al., 2020). Similarly, the emphasis on self-efficacy and locus of control reflects broader psychological research linking these constructs to improved rehabilitation outcomes (Kawano et al., 2021; Vasu & Pang, 2024).

The findings also extend previous work by showing how identity reconstruction and social recognition contribute to motivation, dimensions that are less frequently addressed in quantitative studies. Qualitative evidence has underscored the relational and cultural aspects of motivation, and our study reinforces these insights while adding new perspectives from U.S. survivors (Moon, 2022; Pallesen et al., 2019). By highlighting how survivors negotiate self-worth and community acknowledgment, this study broadens the conceptualization of motivation beyond clinical adherence to encompass psychosocial reintegration.

Furthermore, the role of technology in shaping motivation adds to a growing body of literature on digital and AI-driven rehabilitation. Our findings demonstrate that survivors perceive technology not merely as a clinical tool but as a motivational catalyst, supporting evidence that innovative platforms increase engagement and reduce dropout rates (Caine et al., 2024; Cern & Ze, 2023; Elmanowski et al., 2023). This underscores the potential of integrating technology into motivational frameworks, particularly for survivors who face monotony or discouragement in conventional programs.

In summary, the results of this study confirm and expand existing evidence by demonstrating that motivation in stroke rehabilitation is shaped by interdependent personal, social, and environmental factors. The findings highlight the need for holistic approaches that address psychological resilience, family and professional support, therapeutic environment, and systemic conditions to maximize rehabilitation outcomes.

This study has several limitations that should be acknowledged. First, the sample size, while sufficient for qualitative saturation, was limited to 20 participants from the United States, which may restrict the transferability of findings to other cultural or healthcare contexts. Second, data were based on self-reported experiences during interviews, which may be subject to recall bias or social desirability effects. Third, while the use of NVivo 14 enhanced systematic analysis, the interpretive nature of qualitative research means that researcher subjectivity may have influenced coding and theme development. Additionally, the study did not differentiate findings based on stroke type, severity, or stage of rehabilitation, which may limit insights into subgroup-specific motivational factors.

Future research should aim to expand these findings by including more diverse populations across different cultural and healthcare settings to examine how sociocultural factors influence motivation. Mixed-methods approaches could integrate qualitative insights with quantitative measures of motivation, self-efficacy, and functional outcomes, providing a more comprehensive understanding. Longitudinal studies are also needed to explore how motivation evolves across different phases of recovery, from acute rehabilitation to long-term community reintegration. Furthermore, experimental research could investigate the effectiveness of specific motivational interventions—such as technology-based feedback systems, family education programs, or identity-focused therapies—on functional outcomes.

The findings suggest several practical implications for clinicians and rehabilitation programs. Rehabilitation professionals should prioritize patient-centered goal-setting to strengthen survivors' sense of purpose and agency. Incorporating psychological support strategies such as resilience training and self-efficacy enhancement could foster sustained motivation. Family education and involvement should be emphasized, ensuring that relatives are equipped to provide constructive encouragement and communication. Technological innovations such as VR, robotic devices, and feedback apps should be integrated into rehabilitation programs to enhance engagement. Finally, healthcare policymakers should address structural barriers such as affordability and accessibility to ensure that survivors remain motivated throughout their recovery journey.

Authors' Contributions

Authors contributed equally to this article.

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Declaration

In order to correct and improve the academic writing of our paper, we have used the language model ChatGPT.

Transparency Statement

Data are available for research purposes upon reasonable request to the corresponding author.

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Declaration of Interest

The authors report no conflict of interest.

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Ethical Considerations

The study protocol adhered to the principles outlined in the Helsinki Declaration, which provides guidelines for ethical research involving human participants.

References

Andriani, M., & Agustriyani, F. (2021). Hubungan Dukungan Keluarga Dengan Motivasi Pasien Pasca Stroke Melakukan ROM Aktif Di RSUD DR. A Dadi Tjokrodipo. *Journal of Current Health Sciences*, *1*(1), 7-12. https://doi.org/10.47679/jchs.v1i1.2

Baihaqi, M. N., Suminar, J. R., & Prasanti, D. (2024). Pola Komunikasi Anggota Keluarga Dengan Penyandang Stroke Iskemik Sebagai Upaya Pemulihan. *Humanus*, *1*(3), 444-458. https://doi.org/10.62180/185q3872

Caine, S., Alaverdashvili, M., Colbourne, F., Muir, G. D., & Paterson, P. G. (2024). A Modified Rehabilitation Paradigm Bilaterally Increased Rat Extensor Digitorum Communis Muscle Size but Did Not Improve Forelimb Function After Stroke. *PLoS One*, *19*(4), e0302008. https://doi.org/10.1371/journal.pone.0302008

Cern, Y. S., & Ze, Y. S. (2023). The Design of Stroke Rehabilitation Using Artificial Intelligence K.A.K.I (Kinesthetic Augmented Kinematic Inference). *Jurnal Kejuruteraan*, *35*(6), 1383-1391. https://doi.org/10.17576/jkukm-2023-35(6)-11

Conforto, A. B., Liew, S. L., Luft, A. R., Kitago, T., Bernhardt, J., & Arenillas, J. F. (2022). Editorial: Understanding Stroke Recovery to Improve Outcomes: From Acute Care to Chronic Rehabilitation. *Frontiers in Neurology*, *13*. https://doi.org/10.3389/fneur.2022.1021033

Elmanowski, J., Kleynen, M., Geers, R., Rovelo-Ruiz, G., Geurts, E., Coninx, K., Verbunt, J., & Seelen, H. A. (2023). Task-Oriented Arm Training for Stroke Patients Based on Remote Handling Technology Concepts: A Feasibility Study. *Technology and Health Care*, *31*(5), 1593-1605. https://doi.org/10.3233/thc-220465

Kawano, M., Takamura, Y., Tachihara, M., Yokota, K., & Yozu, A. (2021). The Relationship Between Motivation for Rehabilitation and Sense of Agency in Patients With Cerebrovascular Disease, and Nurse Support for Patient Agency. *International Journal of Affective Engineering*, *20*(3), 143-151. https://doi.org/10.5057/ijae.ijae-d-20-00029

Kumar, A., Fang, Q., & Pirogova, E. (2021). The Influence of Psychological and Cognitive States on Error-Related Negativity Evoked During Post-Stroke Rehabilitation Movements. *Biomedical Engineering Online*, *20*(1). https://doi.org/10.1186/s12938-021-00850-2

Li, W., Zhu, G., Lu, Y., Wu, J., Fu, Z., Tang, J., Zhang, G., & Xu, D. (2024). The Relationship Between Rehabilitation Motivation and Upper Limb Motor Function in Stroke Patients. *Frontiers in Neurology*, *15*. https://doi.org/10.3389/fneur.2024.1390811

Melnikova, E. A., Ткаченко, Г. А., Tsvetkova, E. M., Starkova, E. Y., Vladimirova, N. N., & Litau, V. Y. (2024). The Influence of Patient Motivation on the Motor Function Restoration During Stroke Recovery. Preliminary Results of a Clinical Study. *Physical and Rehabilitation Medicine Medical Rehabilitation*, *6*(2), 122-130. https://doi.org/10.36425/rehab629104

Mercer, E., Sherfey, E., Ogbu, C., & Riley, E. A. (2022). Effects of CPAP on Language Recovery in Post-Stroke Aphasia: A Review of Recent Literature. *Brain Sciences*, *12*(3), 379. https://doi.org/10.3390/brainsci12030379

Mersha, M. D., Hubbard, R., & Zeiler, S. R. (2024). Alternate Day Fasting Leads to Improved Post-Stroke Motor Recovery in Mice. *Neurorehabilitation and Neural Repair*, *38*(3), 187-196. https://doi.org/10.1177/15459683241232680

Moon, K. J. (2022). A Qualitative Study on the Rehabilitation Recovery Experience of Stroke Patients and Spouses. *Korean Society for Rehabilitation of Persons With Disabilities*, *26*(3), 51-72. https://doi.org/10.16884/jrr.2022.26.3.51

Pallesen, H., Aadal, L., Moe, S., & Arntzen, C. (2019). Gateway to Recovery: A Comparative Analysis of Stroke Patients' Experiences of Change and Learning in Norway and Denmark. *Rehabilitation Research and Practice*, *2019*, 1-14. https://doi.org/10.1155/2019/1726964

Rabadi, M. H., & Xu, C. (2025). Motivation in Veterans With an Acute/Subacute Ischemic Stroke Did Not Improve Cognition and Functional Motor Recovery but Reduced Deaths. *European Journal of Physical and Rehabilitation Medicine*, *61*(1). https://doi.org/10.23736/s1973-9087.24.08563-0

Sato, C., Tanji, K., Shimoyama, S., Chiba, M., Misaki, M., Koeda, S., Koshi, S., Akahira, K., & Yamada, J. (2020). Effects of Voluntary and Forced Exercises on Motor Function Recovery in Intracerebral Hemorrhage Rats. *NeuroReport*, *31*(2), 189-196. https://doi.org/10.1097/wnr.0000000000001396

Tan, M., Li, H., & Wang, X. (2023). Analysis of the Current Status of Rehabilitation Motivation and Its Influencing Factors in Older Adults With Stroke: A Cross-Sectional Study. *Frontiers in Aging Neuroscience*, *15*. https://doi.org/10.3389/fnagi.2023.1186681

Tun, S. S. H., Wanpen, S., & Nualnetr, N. (2024). Influential Factors Contributing to Stroke Recovery: A Review. *Iseth*, 1282-1287. https://doi.org/10.23917/iseth.4222

Vasu, D. T., & Pang, Y. G. (2024). Relationship Between Locus of Control and Health-Related Quality of Life in Chronic Stroke

Patients: A Cross-Sectional Study. *Bulletin of Faculty of Physical Therapy*, *29*(1). https://doi.org/10.1186/s43161-024-00241-3

Waddell, K. J., Strube, M., Tabak, R. G., Haire-Joshu, D., & Lang, C. E. (2019). Upper Limb Performance in Daily Life Improves Over the First 12 Weeks Poststroke. *Neurorehabilitation and Neural Repair*, *33*(10), 836-847. https://doi.org/10.1177/1545968319868716

Waddell, K. J., Tabak, R. G., Strube, M., Haire-Joshu, D., & Lang, C. E. (2019). Belief, Confidence, and Motivation to Use the Paretic Upper Limb in Daily Life Over the First 24 Weeks After Stroke. *Journal of Neurologic Physical Therapy*, *43*(4), 197-203. https://doi.org/10.1097/npt.0000000000000287

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