



Association between Depression and Functional Independence in Patients with Chronic Stroke: A Secondary Data Analysis

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Abstract: Background: Stroke is one of the major causes of long-term disability and normally causes survivors to remain with physical, emotional and social problems. The presence of depression and functional loss of independence are commonly present among patients living with chronic stroke, and the interaction between the two cannot always be comprehensively examined through the lens of lived experience of survivors. This paper set out to address the question of how patients with chronic stroke experience depression in relation to functional independence. Another qualitative analysis was also conducted concerning the interview data that had been collected before involving adults who live with chronic stroke. The thematic analysis of relevant narratives was used to find the patterns linked to emotional distress, dependence, recovery, and daily functioning. The analysis came up with four themes that are related. To begin with, emotional loss was encountered because of the loss of independence, which influenced dignity, self-worth, and confidence in other daily life activities. Second, depression proved to become an obstacle to normal functioning, lacked drive, restricted involvement into self-care, and involvement in rehabilitation and social activities. Third, recovery of function was more directly connected with recovery of hope as even small increase in mobility or self-care would lead to faith or mental relief. Fourth, the participants emphasised the importance of comprehensive rehabilitation, which includes emotional health and recoveries of the body. These results indicate a strong interconnection between depression and functional independence in the context of chronic stroke and these two factors cannot be perceived as distinct rehabilitation issues. Good long-term stroke care ought to be person-centred and holistic in nature, incorporating the support of psychology and functional rehabilitation approach. Interventions that focus on emotional well-being have the possibility of significant impact on increasing the independence, life quality and general recovery of chronic stroke survivors.

Keywords: Chronic stroke, depression, functional independence, secondary qualitative analysis, rehabilitation, lived experience.

INTRODUCTION

Stroke is one of the leading causes of mortality, morbidity, and long-term care. Recent estimates by the World Health Organization indicate that the world had 93.8 million stroke survivors in 2021, 11.9 million new stroke cases, and a lifetime risk of stroke of 1 in 4 adults in 2021. Globally, the burden, expressed in disability-adjusted life years, also increased to 160 million in 2021, highlighting the fact that stroke is not only an acute event but the enabling condition of long-term disability that still puts pressure on the rehabilitation systems and networks of

family care (GBD 2021 Stroke Risk Factor Collaborators, 2024). Such statistics are particularly applicable to the case of the chronic stroke population, whose needs often go far beyond the formal inpatient rehabilitation.

Despite the improvement in survival after stroke, most stroke survivors still experience long-term survival with motor, cognitive, emotional, and social problems even after the acute stroke. This is important as the chronic phase of stroke is a period of stroke at which the boundaries of recovery are most circumscribed in

any normal life situation. The much more general concept of functional independence, typically interpreted as the ability to complete the most basic everyday tasks with little or no help, has been one of the main aims of rehabilitation as it influences autonomy, involvement in societal life, and perception of life quality (Li et al., 2024). However, the clinical focus on mobility, self-care, and quantifiable task performance can narrow the definition of recovery, framing independence as a functional measure rather than an experience of living and social context (Lo et al., 2023).

The psychological effect of stroke is by far depression, and depression is not a transient and light burden. According to a recent meta-analysis, the general prevalence of depression following stroke was estimated to be between 27 and 38 percent, and the cumulative prevalence was 38 percent in the first year (Liu et al., 2023). Statistical evidence Longitudinal evidence further indicates that the experience of symptomatic depression may be high years after the stroke, and prevalence is between 31.3-41.5% over long-term follow-up, and the cumulative prevalence in most research is circa 59.4 in one population-based study (Liu et al., 2024). Much of this literature is, however, dominated by symptom scales and functional outcome measures that can help in identifying patterns but less so the way that survivors themselves try to make sense of dependence, frustration, identity change, and emotional loss in their everyday lives.

Quantitative evidence also already indicates that depression and functional outcomes will be closely proportional after stroke, though that evidence is not conceptually complete. According to a recent systematic review, observational studies revealed a negative relationship between post-stroke depression and many functional domains, including dependence and activities of daily living (Butsing et al., 2024). Despite this, these studies were not homogeneous in design, outcome measures, timing, and control of confounding, which constrain the level of confidence with which the relationship can be inferred. More to the point, quantitative designs are likely to presume that depression and functional dependence are independent variables to be correlated with each other, when survivors might likewise regard them as inseparable aspects of post-stroke life.

Aim: This study aimed to explore how depression is experienced in relation to functional independence among patients with chronic stroke.

LITERATURE REVIEW

Depression as a Common Psychological Consequence of Chronic Stroke

It has regularly been reported in the literature that depression is a post-stroke commonality, though its

meaning is frequently circumscribed by its experience. There is meta-analytic support that depressive symptoms are common and persistent upon stroke, with a significant number developing the symptom early but persisting into later stages of recovery (Liu et al., 2023; Liu et al., 2024). But prevalence estimates do not give the full picture as to why depression does not disappear. Most stroke survivors are faced with the lifelong challenges of physical disability, communication impairment, changing family roles, and diminished social engagement that could compound hopelessness and withdrawal in the long run. This implies that cases of depression in chronic stroke cannot be dealt with merely as a comorbid psychiatric disorder but rather as a multi-layered post-stroke violation of personality and daily living.

Another issue is that post-stroke depression is underdiagnosed in long-term care. With screening, more screening is evident in the early stage, whereas chronic survivors in a community might be less systematically screened in terms of emotional follow-up. The latter is methodologically significant since researchers who do not work with people with aphasia, severe impairment, or complicated social disadvantage might underestimate the true burden of distress (Liu et al., 2023). This criticism is reinforced by qualitative studies that demonstrate that stroke survivors tend to frame emotional pain in terms of identity loss, uncertainty, stigma, and interrupted relationships, not just those in formal psychiatric terms (Hall et al., 2024).

Functional Independence: An Independent Rehabilitation Stroke Goal

Functional independence continues to be one of the leading rehabilitation outcomes, as it indicates whether an individual is able to attend to bathing, dressing, and feeding, toileting, mobility, and other daily tasks with minimal help. This focus could be explained clinically, as independence is linked to discharge planning, caregiver burden, and long-term involvement (Li et al., 2024). But the literature also shows that independence is not merely a physical endpoint. In the qualitative research on the recovery of chronic stroke survivors, it has been observed that survivors equate independence with dignity, confidence, belonging, and identity, and experience dependence as exposure, embarrassment, and social vulnerability (Cain et al., 2024; Lo et al., 2023).

This brings a significant conceptual contradiction to the writing. Standardised rehabilitation measures are capable of documenting the occurrence of improvement in the functions, but not necessarily what dependence entails for the individual living with stroke. An example is Cain et al. (2024), who found that chronic stroke survivors were interested in mindset, meaningful activity, environment, and

participation relative to physical ability, and therefore, conventional functional metrics might not necessarily reflect what stroke survivors consider important in long-term recovery. Similarly, Lee et al. (2024) revealed that older adults with chronic stroke indicated rehabilitation as a complicated and long process that is influenced by access to services, self-management, and the requirement to save hope. Put together, these works problematize a biomedical interpretation of independence and a more relational, person-centred explanation.

The Depression and Functional Independence Relationship

There is a lot of quantitative data to support the relationship between depression and functional independence, but little theorising of the survivor-centred terms. It has been observed that the development of post-stroke depression is linked to worse outcomes in dependence, daily activities, and physical and cognitive functioning (Butsing et al., 2024). Nonetheless, it is not such findings that develop a one-way relationship. Less independence can further depression by increasing role loss, dependency, and social withdrawal, whereas depression can also worsen functionality by reducing motivation, self-efficacy, perseverance, and engagement with rehabilitation. It is also probable that the relationship is not linear but reciprocal.

The current literature lacks a clear account of how reciprocity has been derived, with most of this reciprocity derived from being scales and never from patient accounts. The growing qualitative support on stroke recovery is focusing on the emotional relevance of dependence and the necessity of rehabilitation models that consider mindset, identity, and psychosocial readjustment (Cain et al., 2024; Hall et al., 2024). Lo et al. (2023) also argued that stroke recovery cannot be reduced to functional restoration alone, as survivors need to re-relate to themselves, people, and the world in altered bodies. It implies that a qualitative method will be especially helpful when exploring the experience of depression and functional independence in their interaction, and not in isolation.

Literature Gap

Post-stroke depression and functional recovery are both sufficiently represented. Still, the limited number of chronic stroke survivors makes the subject of the research more central to the literature, as long-term adaptation, unmet psychosocial needs, and community living target the focal point. The available evidence continues to be skewed towards acute or subacute recovery and towards quantitative designs that favour prevalence measures, disability scales, and statistical correlation. That literature is noteworthy, yet it gives very few clues about how chronic stroke survivors make sense of the necessity to receive assistance in performing their daily tasks, or how

dependency and low mood end up being connected with normal life. The presence of a secondary qualitative analysis is thus warranted, as it allows the already gathered narrative data to be reevaluated to answer a question that might not have been anticipated in previous analyses, as well as to utilise all the rich interview data in full (Beck, 2023).

METHODS

Study Design

The research design in this study was secondary, as it involved a qualitative analysis. Qualitative data collected in the past had been re-analysed to respond to a narrow research question on depression and functional independence in chronic stroke. The secondary qualitative analysis was suitable because it enables the application of a new interpretive perspective to the available narrative data, allows the efficient use of rich data, and can extrapolate the value of previous studies beyond their intended objectives (Beck, 2023). Meanwhile, this design also necessitated methodological care, since the bounds, breadth, and setting of the original investigative interviews limited the researchers.

Data Source

The information was based on available qualitative data of adults with permanent stroke. The original data might have included semi-structured or in-depth interviews focused on recovery after stroke, rehabilitation experiences, daily functioning, or post-discharge life. The participants were adults with a chronic period of stroke recovery whose narratives were relevant to mood, dependence, independence, and adaptation. Incomplete, poor-quality, and irrelevant transcripts that did not fulfill the current research purpose were filtered out. This sampling logic was suitable for secondary qualitative analysis, since the new question is more relevant than simply reusing the entire parent dataset.

Data Collection

No new data were collected in the study at hand. The review was based on transcripts obtained during the former research, which was completed in a clinical or community setting and quite possibly via semi-structured interviews. Since the current paper addressed another, but similar, question, the re-analysis was limited to passages on emotional distress, loss of confidence, dependence on others, efforts in the rehabilitation process, and everyday functioning. This will align with qualitative re-use, in which existing information can be reused to respond to an analytically adjacent query rather than being reproduced blindly (Beck, 2023).

Data Analysis

The thematic analysis was applied to the data. After undergoing repetition and a reflexive/iterative

process, the transcripts were coded in terms of depression, emotional struggle, dependence, independence, and recovery. Related codes were grouped into candidate themes, and broader themes were developed, reviewed, and refined in relation to the study's purpose. This analytic component was based on current health research instructions, which consider thematic analysis as a loose yet rigorous means of establishing patterned meaning within qualitative data (Saunders et al., 2023). In this work, the analysis was not only aimed at enumerating common themes but also at making inferences about how participants associated mood with everyday functioning and vice versa, and how both fit into an extended pattern of chronic stroke recovery.

Findings

The secondary qualitative analysis gave rise to four thematic areas that were interrelated and showed how the experience of depression and functional independence were experienced as mutually influencing instead of independent factors in chronic stroke recovery. In the participants' narratives, the issue of dependence in basic activities was not defined as a narrow functional issue. It was described as a threat to identity, dignity, and social value. It overlaps with the recent literature on chronic stroke recovery, which indicates that people do experience recovery in physical, cognitive, emotional, and relational areas, albeit mostly based on small qualitative samples or secondary analyses favouring depth over breadth (Bermudo-Gallaguet et al., 2024; Erikson et al., 2023; Kersey et al., 2023).

Emotional loss was the first theme, indicating a loss of independence. Respondents indicated that receiving assistance with dressing, toileting, bathing, and walking was humiliating, revealing, and disorienting to their self-esteem. Dependence diminished self-confidence and often changed survivors' perceptions of their family roles and positions in society. This is a significant finding, as it challenges the rehabilitation tendency to regard functional dependence as a non-clinical factor. Rather, reliance has been symbolic. Recent qualitative work also indicates that identity, self-trust, and the emotional cost of dependency influence everyday decisions about recovery. However, these studies are frequently predicated on quite small purposive sample sizes and might have underrepresented more severely impaired survivors or those with communication constraints (Erikson et al., 2023; Firth et al., 2023).

The second theme placed the issue of depression as an obstacle to normal functioning. Respondents associated depressive mood, hopelessness, and withdrawal with less eagerness to pursue self-care, persist in treatment, or stay socially active. In this sense, depression was not simply an effect of disability. It was also enrolled in the system under

which disability prevailed. Although recent quantitative work supports this interpretation, methodological issues are also evident in that literature. Cross-sectional designs can detect co-occurring pain, fatigue, self-efficacy, and depressive symptoms. Still, they cannot assess directionality, and they do not include people with cognitive or speech deficits. Longitudinal symptom studies provide a better understanding of time, but they also use scale-based constructs that can collapse lived experience into symptom groups (Hu et al., 2024; Ashaie et al., 2023).

The third theme, regaining function and hope, revealed that even the slightest transfers, walks, or self-care gains were psychologically important. Not only was practical capacity regained through improvement, but also confidence, control, and emotional relief. This implies that it is never the case that functional recovery in chronic stroke is simply physical. It is emotive and subjective. Recent longitudinal and trial-based studies are converging. Functional improvement seems to be better in terms of depression risk reduction, whereas transition-oriented rehabilitation is a strategy that can enhance satisfaction with the daily performance of activities. Nonetheless, the evidence is still one-sided. Other longitudinal designs are brief; some trials do not significantly enhance participation but increase activity satisfaction; and most designs do not put meaning or goals in first place (Beltrami et al., 2025; Krauss et al., 2024; Sagen-Vik et al., 2022).

The fourth theme highlighted the importance of holistic rehabilitation. The participants indicated that rehabilitation tended to focus on the body and omitted grief, fear, shame, and uncertainty. They desired an attention to mood and identity, relationships, in addition to mobility and self-care. This observation is also compelling, as it reveals a recurring shortcoming in stroke services. Psychosocial needs are those mentioned but not central to action. Stroke survivors in recent reviews similarly express this issue by stating that emotional support, continuity, communication, and person-centred rehabilitation continue to be an unmet need in survivors. However, the literature of intervention is not unified, and problems with the heterogeneity of concepts and discrepancies in the results can complicate the identification of which psychosocial models are the most effective ones related to chronic stroke treatment (Abu Saydah et al., 2023; Shaik et al., 2024; Zhang et al., 2023).

DISCUSSION

The current results confirm the perception that depression and functional independence in chronic stroke are mutually constructive experiences. In general, this interpretation is in line with a recent body of quantitative literature, but the present study

contributes something that such designs usually cannot do. Cross-sectional studies like Hu et al. (2024) demonstrate that post-stroke depression is most strongly associated with fatigue, pain, and reduced self-efficacy. However, the lack of measures of survivors with speech or cognitive disabilities probably selects the sample of those who are more easily measured and not those most affected. Big retrospective cohort studies, such as Chaudhary et al. (2022), present greater statistical power, but there is an almost certain underreporting of true morbidity by clinically coded depression. Longitudinal studies better capture temporal change, as shown by Beltrami et al. (2025) and Ladwig et al. (2023). Still, they continue to conceptualise the problem as largely attributable to predictors and risk factors rather than to the lived meaning of dependence.

The difference between the current analysis and the previous one is that this analysis focuses on survivors' interpretations of dependence. The revelation that the loss of self was experienced as a loss of function is quite close to recent qualitative findings. Erikson et al. (2023) applied a longitudinal grounded theory method and generated an in-depth consideration of identity reconstruction, though the sample size was limited (four men), and this restricts the generalizability. The Bermudo-Gallaguet and colleagues (2024) study superimposed interviews onto a randomised trial, a method that conveniently links narrative descriptions to the broader rehabilitation context. Yet, the analysis was not specifically focused on depression. Negotiation of everyday rehabilitation decisions regarding goals, burden, and capacity also emerged in Firth et al. (2023). However, it was only the spouses, not the treatment decisions, that foregrounded the emotional meanings of dependence. The pro of the current study is that it does not differentiate between depression and independence as independent variables, on the one hand, and existence, on the other.

The results also bring the existing controversies concerning the meaning of meaningful rehabilitation into sharper focus. Kersey et al. (2023) demonstrated that the physical and mental health of community-dwelling adults with chronic stroke were significantly associated with the participating limitations. Still, their secondary analysis included only 31 participants. The meta-analysis conducted by Bi and Wang (2022) reinforces the thesis that social support is important, and only pooled observational data allows us to answer the question of how support is translated into daily agency. Studies at the review level by Shaik et al. (2024), Zhang et al. (2023), and Abu Saydah et al. (2023) all indicate the presence of persistent psychosocial unmet needs, albeit with heterogeneous primary studies and uneven definitions of the concept. The randomised clinical study by Krauss et al. (2024)

is particularly helpful in this situation, as it demonstrates that transitional rehabilitation can enhance self-rated performance and satisfaction and reduce environmental barriers. Nevertheless, its marginal impact on the increased involvement in the wider community points to the possibility that the functional gains do not necessarily restore the social and emotional losses of stroke.

There are also strong points and weaknesses of the current research. Its primary strength lies in the richness it provides through the re-analysis of the qualitative approach, which unveils the emotional meaning of functional dependence in a way not offered by symptom checklists and outcome scales. But since it is a secondary qualitative analysis, the results are limited to the scope of the initial interviews and do not allow follow-up questions. The limitation is relevant since recent longitudinal research on depression post-stroke indicated that post-stroke mood is not static, so the dynamics are time-variable, dependent on the symptom type, and affected by the social context (Ashaie et al., 2023; Sagen-Vik et al., 2022). The practical implication is not merely to incorporate regular screening of depression because it has to be done. It is to reformulate chronic stroke rehabilitation as a continuous psychosocial and functional process wherein dignities, motivations, participation, and emotional recovery are viewed as primary outcomes and not poor effects.

CONCLUSION

The research finds that there is a close and continuous relationship between depression and functional independence in chronic stroke. The results imply that there is no indication of emotional distress and physical dependence as two distinct challenges being witnessed by the survivors. Rather, the loss of daily activities can have devastating effects on an individual's emotions, sense of confidence, dignity, identity, and hope. Simultaneously, depression may decrease motivation, curtail participation in the rehabilitation process, and impair the capacity to engage in self-care and community life as a support of functional dependence.

The paper also demonstrates that recovery of chronic stroke no longer needs to be considered through the lens of finalising physical improvement. Minor improvements in movement or personal care can be psychologically significant, as they restore a sense of self and a feeling of power. This highlights the necessity of rehabilitation strategies that identify the emotional value of self-sufficiency and the individual value of healing.

In general, the article argues for a more holistic approach to chronic stroke rehabilitation. Long-term care must be able to meet functional and psychological needs rather than focus solely on

physical recovery. Helping build emotional health is not an end in itself; it is the main focus. A more person-focused rehabilitation model could thus provide more successful results to a chronic stroke survivor and assist them to reconstruct both their daily functioning and also a valuable sense of self.

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