The Evolution of Self: Identity, Adjustment, and Psychological Flexibility After Stroke

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Thesis Portfolio Abstract

Aim: This thesis aimed to explore the experiences of stroke survivors to better understand the facilitating processes of self-identity reconciliation post-stroke and to assess the relationship between stroke severity, psychological flexibility and adjustment.

Methods: A systematic review and thematic synthesis of qualitative research capturing the subjective experience of stroke survivors regarding processes that support self-identity reconciliation was completed. Additionally, a cross-sectional empirical study examined the relationships between stroke severity, psychological flexibility, and post-stroke adjustment.

Results: The review findings identified five overarching process themes reported by survivors as supporting self-identity reconciliation, namely: Acceptance, Accessing the Known Self, Reinvention, Reclaiming Agency, and Embracing Social Support. These encompassed personal, interpersonal and systemic elements that whilst distinct, were interconnected. The empirical paper found that poorer physical stroke severity was a unique predictor of increased helplessness-hopelessness, anxious preoccupation and fighting spirit, but not cognitive avoidance or fatalism. Cognitive stroke severity did not uniquely predict any indicator of adjustment. Whilst psychological flexibility uniquely predicted better adjustment except for the component indicating cognitive avoidance, it did not moderate the relationship between stroke severity and adjustment. Finally, higher helplessness-hopelessness and anxious preoccupation, and lower fatalism, associated with worse depression and anxiety outcomes.

Conclusions: The identified processes supporting self-identity reconciliation provide insight into the relevance of therapeutic and conceptual approaches. The potential benefit of ACT in facilitating adjustment regardless of physical or cognitive disability is explored. Encouraging the engagement of the survivors' wider social network and ensuring the consideration of

sociodemographic characteristics and intersectionality within the therapeutic context may support self-identity reconciliation and adjustment for survivors of stroke.

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To the ‘Granary Girls’, I will feel forever fortunate that the stars aligned as they did and placed us, as strangers, together. Clarissa and Jason, thank you for the listening ear, logical thoughts and motivating voice, your never-ending willingness to help others is something I strive to achieve. You are all powerful and wise in your own unique ways; I simply do not know what I did to deserve you all.

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Lastly, I must thank my three cats for reminding me to leave my office and feel the sunlight every once in a while, however else would I have survived without being forced to intimidate birds on their behalf.

“At the end of the day, we can endure much more than we think we can” – Frida Kahlo

Chapter 1: Introduction

Background and Rationale

Chronic illness can be defined as enduring in nature, with the potential for a significant and widespread impact on daily experiences (Moss-Morris, 2013). The first to conceptualise this impact in brain injury, Goldstein (1965) coined the term 'catastrophic reaction', capturing the emotional and behavioural fallout individuals experience when unable to interact with their environment as they did pre-injury (Klonoff et al., 2009). This reaction encompasses both a salient emotional response to the recognition of change and the subsequent avoidance of situations that trigger reminders of this loss (Salas, 2012).

Similarly, Kohut's (1972) concept of 'narcissistic rage' refers to the emotional upheaval that arises with the threat or experience of a fragmented self. Similar to the catastrophic reaction, this recognises the function of adaptive avoidance, whereby 'rage' is purported to strengthen a sense of stability in the face of self-discontinuity, minimising the felt disruption (Kohut, 1972; Ornstein, 1998). Both the catastrophic reaction and narcissistic rage describe the engagement with defensive avoidance strategies adopted to protect one from the experience of a disturbed self and the psychological consequences of this experience. Whilst protective in the short term, these behaviours serve to inhibit exposure to discrepancy and the reconciliation process, nullifying the emotional experience and preventing positive adaptation. Critically, both Goldstein and Kohut recognised the detrimental effect that the perception or experience of changed abilities, when interpreted as failure, has on the integrity of the self and the consequential distress experienced (Klonoff et al., 2009).

Indeed, stroke survivors report elements crucial to their self-identity such as personal, social and professional roles, how they perceive themselves as belonging, and beliefs about their abilities, as put into conflict with their altered functional abilities (Hole et al., 2014;

Satink et al., 2013). This incongruence in the conceptualisation of self has been recognised as potentially influencing an individual's ability to adjust post-stroke (Hole et al., 2014; Sarre et al., 2014). Moreover, a recent systematic review emphasised that navigation of the sense of self characterises the process of psychological adjustment following ABI (Vaghela et al., 2023), underscoring the pervasive influence and thus relevance of inconsistencies in self-identity. These findings correspond with models of ABI rehabilitation, whereby the adjustment process is seen as pivotal for recovery and influenced by the self-consolidation process (Gracey et al., 2009; Ownsworth & Gracey, 2017; Taylor et al., 2011). Indeed, a lack of adjustment here is thought to contribute to the experienced discrepancies, which in turn fuels avoidance, thereby inhibiting the integration of updated and realistic perceptions of the post-stroke self.

Consequently, this promotes reduced participation (Hoyle et al., 2023; Nicholas et al., 2020), which further serves to inhibit learning and the adjustment process (Rogers et al., 2018; Saunders et al., 2020). As positive engagement in valued and meaningful activities has been associated with improved wellbeing (Egan et al., 2014), quality of life and resilience (Matérne et al., 2022), while poorer perceived abilities have been linked to increased negative mood symptoms (Wheeler et al., 2023), difficulties in adjustment and thus the challenge of these beliefs appear to perpetuate a cycle of withdrawal and distress.

Thus, rooted in a disrupted self-concept and compounded by the inability to swiftly reconcile the inconsistencies between the pre- and post-injury self, adaptation, acceptance and compromise with previous standards are often rejected. Consequently, this can result in a fractured self, whereby the process of integrating experiences into a coherent identity is disrupted, leading to a discontinuous and fragmented self-perception (Hall, 2021). This narrative corresponds with those capturing themes of grief and loss amongst stroke survivors,

with functional changes and the loss of friendships and roles withholding a profound impact (Hughes & Cummings, 2020).

As a result, psychosocial therapeutic interventions should provide space for and encourage the confrontation, processing and consolidation of the fractured self and the process of adjustment. Indeed, recognising the theoretically underpinned relevance of self-identity and adjustment, and indeed their interaction with elements such as participation and quality of life, highlights the importance of developing a refined conceptualisation of these processes within the post-stroke population.

Portfolio Aims and Structure

Therefore, the aim of this thesis portfolio was to enhance the understanding of self-identity and the adjustment process from the perspective of stroke survivors. Chapter Two encompasses a systematic meta-synthesis conducted to explore the processes that contribute to self-identity reconciliation post-stroke. Chapter Three outlines the rationale for the empirical quantitative study detailed in chapter Four, which in turn explores the associations between stroke severity, post-stroke adjustment and the role of psychological flexibility. Finally, chapter Five offers a critical appraisal and discussion that integrates the findings of the two papers, evaluating the methodological choices, and highlighting recommendations for future research and clinical practice.

Chapter 2: Exploring the Experience of Changed Self-Identity Following Stroke: A Meta-Synthesis of Qualitative Literature

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Keywords: Stroke, Self-Identity, Adjustment, Identity Reconciliation, Meta-Synthesis

Abstract

Stroke often results in significant and widespread consequences that can disrupt self-identity. Evidence suggests that this misalignment negatively influences engagement, mood and adjustment. However, little is known about the processes that support self-identity reconciliation. A meta-synthesis was therefore conducted to identify and analyze the accounts of stroke survivors to establish the processes that contribute to self-identity consolidation. Through a critical realist lens, qualitative research capturing subjective reports was systematically reviewed and thematically synthesized. Four electronic databases were searched with terms identified using the PICO framework, namely: ‘stroke’, ‘qualitative’, and ‘identity’. Twenty-three articles were included for the final synthesis. The experiences of 237 survivors who were at least six months post-stroke were explored in relation to distinct but interconnected processes captured within five overarching themes: Acceptance, Accessing the Known Self, Reinvention, Reclaiming Agency, and Embracing Social Support. Personal, interpersonal and systemic factors were identified as promoting the reconciliation process. Beyond extending the understanding of how survivors can best be supported, these review findings endorse the complex and individualistic nature of self-identity reconciliation post-stroke. The direction of clinical intervention structures is explored, and avenues of future research outlined.

Introduction

Stroke is a chronic illness (Adamson et al., 2004), with a profound and multifaceted impact. For many, experiencing a stroke is sudden and unforeseen (Crowe et al., 2016; Lawrence, 2010). Unlike progressive chronic illnesses where symptom development is typically gradual (Rolland, 2013), the deficits resulting from stroke are generally most severe at onset and followed by a period of recovery (Hillis & Tippett, 2014). Despite the potential for symptom recovery, positive functional progress varies significantly between individuals (Hope et al., 2019). Consequently, chronic disability is common, with stroke representing the leading neurological and the third-leading cardiovascular cause of disability-adjusted life years (Feigin et al., 2017; Feigin et al., 2021, respectively). These impairments can be wide-ranging, non-exhaustively impacting cognition, mood, movement, vision, communication, emotional processing, and lability (Ferro & Santos, 2020; Jacquin et al., 2014; Lee et al., 2023; McAleese et al., 2021; Smith et al., 2018; Stein et al., 2018). Thus, the survivors' view and understanding of themselves, as well as the ability, confidence and desire to reengage across professional, familial, and social facets can be adversely affected, creating discrepancies between one's pre- and post-stroke self-identity (Martin-Saez & James, 2021).

Self-identity, or the sense of self, has been broadly referred to as encompassing an individual's self-perception and understanding, referencing "the unique and persisting qualities that define who we are" (Ownsworth, 2014, p.1). Relating to the personal meaning derived from everyday experiences (Ownsworth, 2014), self-identity is postulated as stemming from one's social experiences in the world (Tajfel & Turner, 1979) and the dynamic and evolving understanding of oneself drawn from memories that integrate past experiences, present self-concept and future aspirations (Conway & Loveday, 2015).

With this said, the often-unanticipated nature of stroke, combined with its more immediate and significant impact, leaves survivors physically and psychologically

unprepared (Crowe et al., 2016). When further accounting for limited recovery from potentially widespread and devastating functional impairments, some survivors find reflected at them a self they do not recognize, fractured and disempowered (Martin-Saez & James, 2021).

Goldstein's (1959) foundational concept of 'catastrophic reactions' sheds light on this phenomenon. More specifically, a 'catastrophic reaction' was theorized as occurring when environmental demands following a brain injury are said to promote the experience of a disorganized inner state, inducing a sense of incoherence and discontinuity that promotes the avoidance of situations that would serve to heighten these discrepancies (Salas, 2012). Consequently, the individual therefore avoids situations that may elicit a catastrophic reaction, thus resulting in isolation and withdrawal from themselves and the world.

Building on Goldstein's 'catastrophic reaction' concept, Gracey et al. (2009) described these discrepancies within the context of rehabilitation in acquired brain injury. As outlined within their 'Y-Shaped model', maladaptive coping strategies inclusive of avoidance and withdrawal are triggered by personal and social discrepancies that represent a threat to a person's sense of self, impacting participation and well-being. Whilst these strategies are protective, moderating the severity of the experienced threat, this ultimately inhibits alternative learning and the challenge of beliefs and experiences driving the discrepancy. However, when attention is brought to the threat in a gradual and controlled way, the individual is supported to incorporate functional behaviors that endorse the consolidation process. An adapted and updated version of the model holding identity at the core of the rehabilitative process highlights these avoidance behaviors as ultimately resulting in the persistence of identity discrepancies, and consequently, impacted wellbeing (Ownsworth & Gracey, 2017).

In tandem with these conceptualizations and therapeutic applications within the wider scope of ABI, the process of discrepancy resolution post-stroke is evidenced as being supported by experiences which in turn guide adaptation and further practice, eventually contributing to an evolved identity (Hole et al., 2014). Thus, it seems critical that stroke survivors are supported in a way that promotes harmony between pre- and post-stroke identities, or identity reconciliation, and facilitates the adjustment process. Despite this, the development of interventions specifically targeting these areas is limited, and findings report mixed outcomes (Sathananthan et al., 2022).

To the best of our knowledge, no systematic review has been conducted with the scope of exploring the facilitators of self-identity consolidation within the post-acute stroke population. The focus on those in the post-acute stage reflects the desire to capture processes that may inform psychosocial rehabilitation, and the knowledge that post-stroke functioning is typically considered post-acute or ‘chronic’ from six-months onwards (Bernhardt et al., 2017). Although a previous doctoral thesis reporting the systematic meta-synthesis of the processes contributing to positive identity experiences post-ABI contained stroke literature, it was recognized that the synthesis across ABIs may have served to mask distinguishing factors between ABI type (Burchill, 2018). The relevance of these differences was highlighted within a meta-synthesis of qualitative research reviewing experiences that challenge self-identity following traumatic brain injury, where the authors outlined the value in individually synthesizing identity experiences between the forms of ABI (Villa et al., 2021). This review therefore asks: what are the processes that support self-identity reconciliation after stroke?

Methods

The systematic literature search was conducted on 5th November 2024, and the protocol for this systematic review was pre-registered on the PROSPERO database (ID:

CRD603692). The Enhancing Transparency in Reporting the Synthesis of Qualitative Research (ENTREQ) statement was used to guide the reporting of the review methodology and synthesis (Tong et al., 2012; Appendix B), alongside the Preferred Reporting Items for Systematic reviews and Meta-Analyses (PRISMA; Page et al., 2021; Appendix C).

Eligibility Criteria

Studies were eligible for inclusion if they: (1) focused on adults in the (2) post-acute phase of stroke (at least six months post-stroke), (3) contained the accounts of processes contributing to self-identity reconciliation post-stroke, (4) reported an empirical qualitative study, (5) included the perspective of survivors, (6) were published in a peer-reviewed journal, and (7) were published in English. Where the population of interest (stroke survivors) was reported alongside alternative ABI or TBI populations, or included the reports of proxies and non-adults, studies were included if the data could be clearly differentiated.

Studies were excluded if they: (1) were secondary research (systematic, literature, and scoping reviews), (2) studied transient ischemic attacks singularly, (3) were not peer reviewed research (e.g., abstracts from scientific meetings, conference proceedings, editorials, articles, unpublished dissertations or theses), or (4) did not contain accounts of processes contributing to self-identity reconciliation post-stroke.

Search Strategy

Keywords were developed using the PICO framework (Richardson et al., 1995) as recommended for the inclusive capture of qualitative literature within systematic searches (Methley et al., 2014). Search terms employed within previous reviews with a similar scope were further consulted for guidance (Burchill, 2018; Villa et al., 2021). Synonyms for the keywords were employed as follows: stroke survivors (Population), qualitative explorations (Context), and identity reconciliation (Outcome). As the use of the framework element

'Intervention' was not relevant to this review, it was not employed within the search criteria. Four electronic databases were searched from inception. The initial search strategy, inclusive of MeSH terms and keywords, was developed for MEDLINE and adapted for CINAHL Ultimate (Cumulative Index to Nursing and Allied Health Literature), APA PsycINFO and Web of Science. The search for the first three databases was completed on EBSCOhost; Web of Science was searched on Clarivate (see Appendix D for individual search strategies). The following limits were applied to the searches conducted on EBSCOhost: English language, human, and peer-reviewed research. English language was the only search limit applied when using Clarivate due to database restrictions. Further to the database searches, review of the reference lists for the identified full-text papers was completed.

Screening and Selection

Following the database and reference list searches, the identified studies were first imported to Endnote for initial deduplication, before being imported to Rayyan (Ouzzani et al., 2016). After further deduplication, the title and abstract of each record were screened, followed by the full-text review of the remaining studies of interest.

The primary screening of all title and abstracts and identified full-texts was completed by AC. Secondary screenings were conducted by an additional reviewer (CO) for 10% of the title and abstract results, and 20% of the full-text records. There was a high degree of inter-rater agreement regarding the title and abstract ($\kappa = .84$) and full-text reviews ($\kappa = .81$; Cohen, 1960).

Quality Appraisal

Criteria developed by Whiffin et al. (2021), encompassing the assessment of relevance, resonance and rigor, were employed to assess the value of the included studies in aligning with their proposed purpose and aims. Relevance was based on the applicability of

the individual research aims and participants, while resonance included a judgement of the wealth and depth of study findings.

The Critical Appraisal Skills Programme (CASP) checklist for qualitative research was employed in the assessment of rigor (CASP, 2024). The CASP checklist encourages the consideration of factors pertaining to three overarching domains: (a) result validity, (b) findings and (c) utilization of the results within the wider context. The first addresses the clarity of research aims, the appropriateness of the methodology, design, and recruitment, data collection and factors relating to researcher-participant interactions. The latter two sections consider ethical factors, the rigor of data analysis, the clarity of findings and the value of the research.

Whilst the CASP checklist was not originally designed to be translated into scores, the use of scoring criteria reported by Duggleby et al. (2010) were employed to aid with comparisons, as reported by Whiffin et al. (2021; see Table 1). These assessments were used to classify the papers as either core, central, or peripheral. No papers were excluded based on these findings, as the nuances captured within the individual narratives contributed valuably to reported synthesis insights. Corresponding CASP scores and comparison classifications can be found in Table 2.

Table 1

Criteria for the Classifications of Core, Central and Peripheral

Core	Relevance	Complete alignment of empirical and review questions
	Resonance	Evidence base enhanced by innovative, detailed and complex findings
	Rigor	The relevant use of appropriate methodology
Central		Aligns less stringently with the criteria for 'Core'
Peripheral	Relevance	Relevant findings but empirical and review questions are not aligned
	Resonance	Findings do not impactfully contribute are limited in scope and quality
	Rigor	Queries relating to the appropriate use or application of methodology

Studies were independently appraised by the primary author, with 30% (n = 7) of the studies that met the inclusion criteria reviewed by a secondary author (CO) to establish robustness in the appraisal process.

Positionality

A critical realist perspective was adopted for the data synthesis process. Critical realism emphasizes that ontology cannot be reduced to epistemology, recognizing the existence of a 'true' reality whilst appreciating the subjective perception and experience of this reality (Fletcher, 2017). Consequently, this approach proposes that the exploration and understanding of causal mechanisms can be informed by reviewing empirical level experiences and interpretations (Danermark et al., 2019). Thus, this approach enables meaningful exploration that extends beyond descriptive accounts, thereby endorsing the deeper understanding of the processes that are perceived by survivors to contribute to the reconciliation of identity post-stroke. As such, the positionality of authors is inherently relevant within the synthesis process.

The research team consisted of four members. The primary author AC and additional author CO are trainee clinical psychologists with personal and professional experiences with stroke. JB is a clinical psychologist and researcher specialising in stroke, with extensive

inpatient and community experience shaping his understanding of life after stroke. JO is a clinical psychologist and research fellow with expertise in stroke rehabilitation and supporting those with acute and long-term physical health conditions. All authors critically reviewed the manuscript.

Trustworthiness

Lincoln and Guba (1985) outlined four domains associated with trustworthiness in qualitative research: credibility, dependability, confirmability and transferability. Given the nature of a narrative synthesis, typical methods of achieving credibility, such as the testing of interview protocol or prolonged engagement, were not achievable. With this said, the analytical interpretations of the primary author were explored with two additional authors during the analysis process (CO, JB), whilst peer debriefing and reflexive journaling were also employed. A bridling approach (Dahlberg, 2006) was taken within these explorations, throughout which the authors maintained a stance of openness and critical self-awareness toward their preunderstandings of stroke, adjustment, and psychological flexibility, thus encouraging a more curious interpretation of the data. To ensure dependability, a clear, consistent and replicable approach was adopted for the systematic searching, screening, appraisal and analysis completed within the review. To achieve confirmability, establishing findings were derived from the data rather than the preferences of the reviewers (Tobin & Begley, 2004) and clear analytical processes were enhanced by detailed and thoroughly reported analytical findings (Morrow, 2005). Finally, transferability was enabled with the well-evidenced and detailed exploration of interpretations within both the clinical and wider context.

Thematic Synthesis

Thomas and Harden's (2008) thematic synthesis approach to analysis was employed across three stages. Specifically, (1) the extracted findings were read repeatedly and coded for

meaning on a line-by-line basis, before (2) the coded material was used in the formation of themes and finally (3) interpretative analytical themes extending beyond the originally developed themes were created. A written reflective account was kept throughout the analytical and reporting process by AC, further facilitated by discussions with the wider research team.

Data Extraction

Data extraction of study characteristics and outcomes was conducted and reported by AC. This was completed as a two-stage process, the first of which involves the capture of contextual details highlighted as critical in the review and interpretation of individual study findings (Noyes et al., 2018). Thus, data pertaining to the general characteristics of each study were extracted, namely: relevant aims, sample characteristics, study context and setting, and methodological aspects pertaining to recruitment, data collection and analytical approach.

Secondly, to avoid the unintentional omission of key concepts or findings resulting from limited analytical descriptions and to ensure the equal value of quotations and researcher interpretations, sections labelled ‘results’ or ‘findings’ were viewed as relevant to the analysis and therefore extracted in their entirety (Thomas & Harden, 2008). Where the inclusion criteria were met but segments of the findings were clearly not applicable to the current review (e.g., those relating to other types of ABI singularly), only the relevant results were extracted. All extracted data was first collated within individual Microsoft Word documents, before being imported to NVivo for analysis.

Coding and Descriptive Theme Development

The included studies were repeatedly read by AC, and the extracted content was reviewed for applicable concepts on a line-by-line basis. Sematic codes, capturing explicit

meanings, and latent codes, representing underlying ideas and assumptions (Byrne, 2022), were both applied line-by-line throughout. The thematic codes and corresponding quotes and author context were reviewed and organized into descriptive themes. The coding process was organized in a way that accounted for the applicability of study relevance and the quantity of extracted data. To achieve this, order was dictated by the assigned quality appraisal classification, whereby core studies were coded first, followed by central, and finally peripheral. Pre-existing codes were applied to successive studies where appropriate; new codes were developed when necessary. An iterative approach was employed throughout the coding and theme development process, and the applicability of the codebook was ensured through the re-review of each individual study following the initial coding process.

Analytical Theme Development

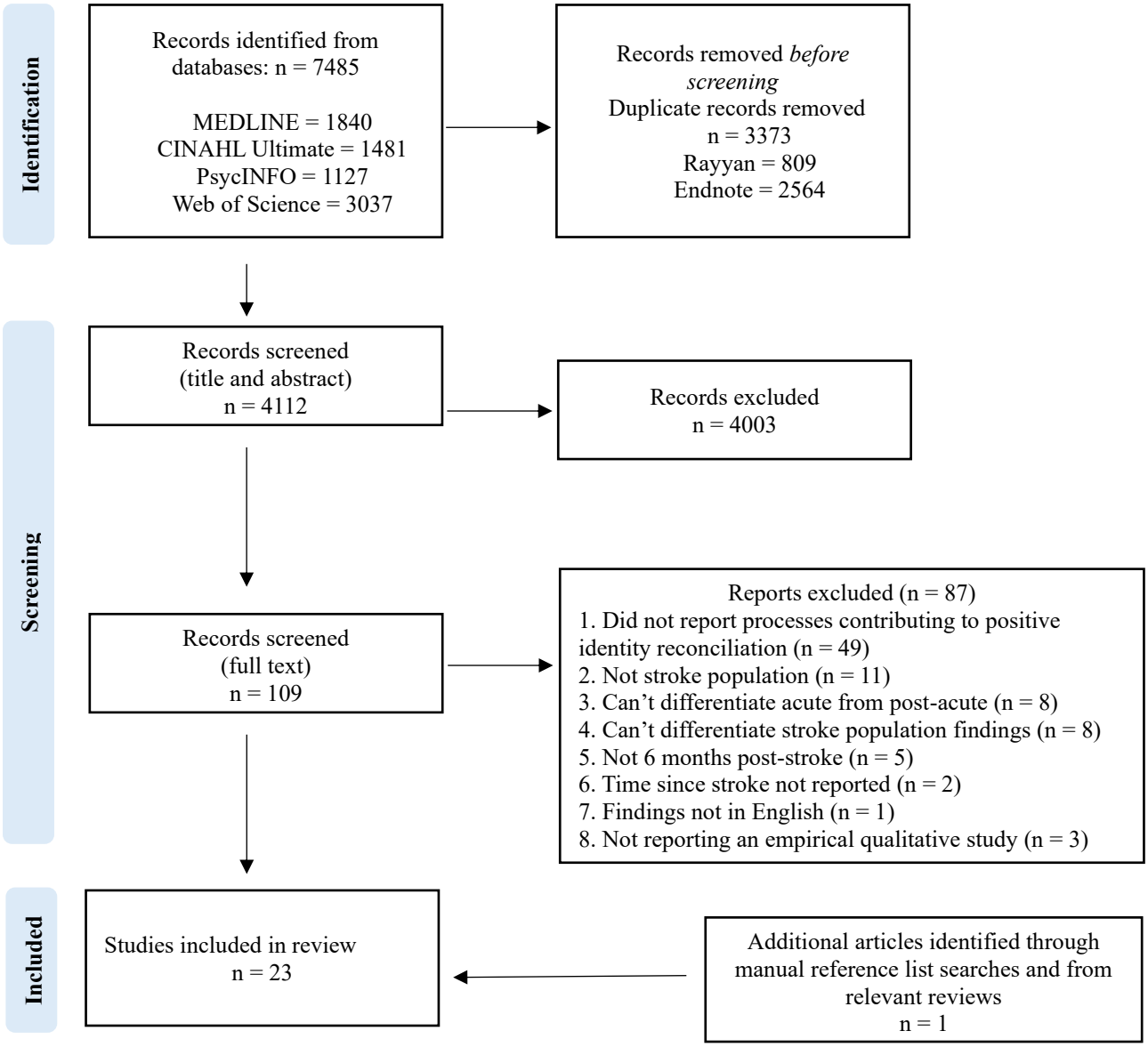
Proposed themes and potential interpretations were reviewed collaboratively by the authors. Theme organization highlighted complexities regarding overlapping constructs; thus, caution was taken with delineating boundaries and ensuring the capture of processes distinct from one another. Whilst distinct, these processes were recognized as interacting. A sense-check of narrative interpretations was reviewed critically between authors to verify the coherence of interpretations.

Results

A PRISMA diagram (Figure 1; Page et al., 2021) details the results identified during the search, the total papers included and excluded at each stage of review, and the reasons for exclusion after full-text review.

Figure 1

A PRISMA Diagram Outlining the Search Strategy and Screening Outcome



Study Characteristics

Twenty-three studies were included for thematic synthesis. Of those included, four were published between 2000 and 2010, 13 between 2011 and 2020, and six between 2021 and 2024. Papers varied in country of origin, including: Australia (n = 4), Norway (n = 4) Canada (n = 3), United Kingdom (n = 3), Sweden (n = 2), United States of America (USA; n = 2), New Zealand (n = 1), Denmark (n = 1), Hong Kong (n = 1), Czech Republic (n = 1) and

Italy (n = 1). All aside from one study utilized individual interviews as a singular method of data collection (n = 22); Hawkins et al., (2017) analyzed written and audio diaries to supplement interview findings. Of the 237 individuals included within the collated studies, 119 were female (50.2%). Time since stroke ranged between six months and 33 years. Quality appraisal identified four core, sixteen central, and three peripheral studies (see appendix E for quality rating by study). A breakdown of study characteristics and quality ratings can be found in Table 2.

Table 2

Study Characteristics and Classification of Included Articles Based on the Proposed Criteria by Whiffin et al., (2021)

Study	Research aim	Methodological/ Research design	Data analysis Method	Data collection method	Sex	Age at: Stroke; Data collection	Time since stroke	Geographical location (setting). Additional context	QA
Anderson & Whitfield 2013	Facilitators and barriers to resuming activities post-stroke	Grounded theory (Glaser & Strauss, 1967)	Situational analysis (Clarke, 2005), Coding guide (Scott & Howell, 2008)	1 semi-structured interview (1 hour)	6 M, 3 F	NR; 53-64	1-6 years	Canada (pt home/ choice)	Central (17)
Arntzen et al. 2015	Negotiation between body, participation and self post-stroke	Longitudinal Qualitative	Phenomenological hermeneutical analysis (Lindseth, A., & Norberg, 2004)	Repeated interviews	6 M, 3 F	NR; 39-72	6 months to 12 years	Norway (NR)	Core (20)
Becker et al. 2022	Exploring community integration for survivors	Grounded theory	General Inductive Approach (Thomas, 2006)	1 semi-structured interview	6 M, 2 F	NR; 50-80	6.5 years	New Zealand (pt home)	Central (22)
Brunborg et al. 2014	Factors promoting subjective well-being 10+ years post-stroke	Phenomenological hermeneutical approach	Qualitative study design	1 in-depth Interview	4 M, 5 F	NR; 60-95	>10 years post-stroke	Norway (pt home/ telephone) 1 pt passed away pre-interview	Peripheral (14)
Clarke & Black 2005	Factors influencing subjective quality of life	Qualitative methods (Clarke, 2003)	Qualitative study analysis method	1 focused interview	3 M, 5 F	NR; 60-81	7 months – 9 years	USA (pt home)	Peripheral (14)

Cregan et al. 2022	Experiences of fatherhood pre- and post-ABI	Qualitative idiographic	Interpretative phenomenological analysis	1 semi-structured interview (guide used)	1 M	NR; 35	4 years	UK (pt home/ charity center) 7 total pts - data extracted for only stroke pt	Central (24)
Erikson et al. 2016	Understand the impact of stroke on everyday life	Longitudinal, qualitative, descriptive and interpretative	Empirical Phenomenological Psychological (Karlsson, 1993)	1 interview (guide used)	6 M, 5 F	NR; 50-67	11-13 years	Sweden (pt home/ workplace/ pt preference)	Central (17)
Eriksson & Tham 2010	Exploring how survivors experience challenges in daily activities during first year of recovery	Qualitative, descriptive, and interpretative	Empirical Phenomenological Psychological method (Karlsson, 1993)	2 interviews (guide used)	3 M, 1 F	NR; 50-61	6-12 months	Sweden (pt home/ rehabilitation clinic/ university) Data for interviews completed at the 1- and 3-month time point not included.	Central (19)
Faccio et al. 2023	Exploring subjective perspectives of narrative processes of identity reconstruction	Qualitative methods	Positioning Theory	1 semi-structured narrative interview	18 M, 12 F	NR; 18-61<	1 year – 5< years	Italy (association headquarters, telephone, videocall)	Central (21)
Fraas & Calvert 2009	Factors supporting successful stroke recovery and productive lifestyle	Qualitative narrative life stories design	Seidman's phenomenological approach (Seidman, 2006)	1 semi-structured interview (list of questions offered).	1 M, 1 F	25 & 55; NR	≥22 months	USA (NR) 31 pts interviewed initially, 4 case studies reported. Two not reported as not stroke population.	Central (18)

Glintborg 2015	Exploring identity re-construction post-stroke	Qualitative narrative	Narrative identity analysis (Lucius-Hoene & Deppermann, 2000)	1 semi-structured interview (guide used)	1 M	NR; 66	1 year	Denmark (home)	Peripheral (13)
Hawkins et al. 2017	Exploring recovery trajectory influences in long-term stroke survivors	Qualitative methods (interviews, solicited diaries, network mapping)	Longitudinal grounded theory approach (Charmaz, 2006)	2 in-depth interviews (topic guide developed from initial interview) Written or audio diary	14 M, 8 F	50-89; NR	14-24 months	United Kingdom (NR)	Central (16)
Hutton & Ownsworth 2019	Explore impact of stroke on sense of self and continuity for younger adults	Qualitative methods	Interpretative Phenomenological Analysis (Smith et al., 2009)	1 semi-structured interview (schedule guide used)	3 M, 7 F	20-55; 26-70	6 months to 19 years	Australia (pt home/ community rehabilitation service) 1 pt had first stroke 31 years ago	Core (22)
Kouwenhoven et al. 2011	Explore lived experience of depression post-stroke	Longitudinal qualitative study grounded in hermeneutic phenomenology (Van Manen, 1997)	Phenomenological hermeneutical analysis (Lindseth & Norberg, 2004)	Repeated in-depth interviews (thematic interview guide)	3 M, 6 F	NR; 30-85	6, 12, 18 months	Norway (pt home, workplace, telephone) Age at interview recorded at 18 months interview	Central (23)
Kuluski et al. 2014	Experience of disability and recovery/ coping strategies of	Qualitative method	Directed content analysis	1 semi-structured interview	6 M, 11 F	21-53; 23-55	1-12 years	Canada (NR)	Central (19)

	young stroke survivors								
Lo et al. 2021	Exploring how stroke survivors adapt and manage life	Qualitative method	Thematic analysis (Braun & Clarke, 2006)	1 semi-structured interview (guide used)	18 M, 12 F	NR; 35-80	2-25 years post first-stroke	Hong Kong (university/ community rehabilitation center)	Central (16)
Pedersen et al. 2019	Explore quality of life in the first-year post stroke	Interpretative inductive	Systematic text condensation (Malterud, 2012)	1 semi-structured interview (guide used)	7 M, 4 F	NR; 35-66	1 year	Norway and Denmark (pt home/ pt workplace)	Central (19)
Šaňáková et al. 2024	Explore lived experiences of young stroke survivors 12-24 months after their first stroke	Interpretative	Interpretative phenomenological analysis (Smith et al., 2021)	1 in-depth semi-structured interview (guide used)	5 M, 4 F	NR; 41-50	12-24 months	Czech Republic (pt home/ ward)	Central (23)
Stagg et al. 2023	Exploring one individual's experience of adjustment to stroke	Instrumental case study	Grounded theory-based analysis (Charmaz, 2014)	2 in-depth interviews (guide used)	1 M	NR; 74*	6 months and 12 months	Australia (phone) Data not included for interview 1 as not 6< months post-stroke.	Central (23)
Stone 2005	Exploring survivor's understanding of stroke impact on their lives.	Qualitative study design	Open coding	1 in-depth semi-structured interview	19 F	19-49; 30-57	3-33 years	Canada, USA, Scotland and England (pt home/ restaurant) Data for 4 not included due to being under 18 at the time of stroke	Central (19)
Swart et al. 2015	Experiences of post-stroke aphasia trainers	Qualitative study design; critical realist	Inductive thematic analysis (Braun & Clarke, 2006;	1 semi-structured interview (schedule guide used)	4 M, 3 F	38-66; NR	≥ 1 year	UK (pt home) Data for 1 female pt not included due to being under 18 at the time of stroke	Central (21)

			Yardley & Joffe, 2004)						
Walder et al. 2017	Exploring how stroke survivors adjust to life post-stroke	Constructivist grounded theory (Charmaz, 2014)	Grounded theory-based analysis (Charmaz, 2014)	1 in-depth interview (guide used)	2 M, 3 F	NR; 34-76	7 months - 3 years	Australia (pt home) Data for 1 female excluded due to being less than 6 months post-stroke	Core (19)
Wolfenden et al. 2012	Experience of young stroke survivors in re-establishing identity	Critical interpretivist approach (Sarantakos, 2005)	Coding and theme creation	1 in-depth semi-structured interview	5 F	NR; 34-44	12 months to 9 years	Australia (NR)	Core (16)

Note. M = Male, F = Female, NR = Not Reported, pt = Participant, * = Derived from participant quote

Analytical Findings

The positive processes identified as contributing to self-identity consolidation post-stroke were synthesized into five main themes encompassing eight subthemes. The five main themes were: (1) Acceptance, (2) Accessing the Known Self, (3) Reinvention, (4) Reclaiming Agency, and (5) Embracing Social Support.

Theme 1: Acceptance

Narratives reflected the importance of accepting, internalizing and acknowledging one's experience, and understanding its significance in the present. Enabling the embrace of flexibility, the reality of past events is understood as fixed and unchangeable. Encompassing a process identified as acceptance, these reflections emerged as integral to reconciling self-identity.

Adopting change and accepting the integration of altered functional ability encouraged a sense of cohesion. Acceptance reduced the fracturing impact of these changes on the perception of the self, "now, I think I feel confident in myself at least, and making a mistake isn't so bad" (Eriksson & Tham, 2010, p. 190). This empowered the assimilation of these changes into daily life, reducing discrepancies between the pre-and post-stroke selves and thus, distress, "everything has done an about-face. And part of my changing has been accepting the fact that I do have a disability and what that means in my life" (Fraas & Calvert, 2009, p. 322). Accepting change enabled the exploration of perceived purpose and meaning, encouraging a positive and realistic view of the future, "as good as it was then, there is another life which could still be as good. It's going to be nothing like your old life probably but it can still be as good" (Walder & Molineux, 2017, p. 624).

Survivors were able to begin recognizing the 'changed self', as simply the 'self'. Despite significant and persistent life changes, discrepancies between who they were before

and who they were after the stroke were muted, allowing for a sense of harmony, "previously, I could not accept that I had to let go of my regular work. Right now, I do not feel that I had to let go of anything" (Pedersen et al., 2019, p. 6).

Embracing the Now. Detaching oneself from the past and embracing a lack of control over their own current narratives was highlighted as positively influencing perceptions of loss, thereby decreasing the disconnect between the pre- and post-stroke self.

> I told myself and reminded myself to live in the moment, that you cannot get back to the past and cannot predict what will happen next. The best way is to concentrate on the present moment, this is the real thing you are dealing with. (Lo et al., 2021, p. 6)

For some, this may have facilitated the reclaim of agency in the recovery journey, reinforcing a sense of control (Walder & Molineux, 2017). This in turn allowed for connotations of pride in recognizing what was overcome, and that they did, in fact, survive, "just take each day as it comes, and progress with it, and be proud that you're still alive and ...you're still with us for a reason" (Walder & Molineux, 2017, p. 624). Whilst endorsing the release of the past, survivors also outlined the benefit of existing in the present rather than engaging with the uncertainties of the future.

> There's the phrase: There's light at the end of the tunnel, but I'm saying that there's more road at the end of the tunnel. It will get better but life keeps on moving. So it's not the be all and end all. (Hutton & Ownsworth, 2019, p. 281)

Theme 2: Accessing the Known Self

The process of preserving the self emerged as a central component, reflecting recognized aspects of the participants' lives that remained unchanged and thus, recognizable.

Normalizing the Narrative of Stroke. For some, integrating stroke into the narrative of their life served to portray the continuity of the self as unchanged.

> ...I'm such an easy-going guy, so I don't even acknowledge these illnesses. It's like it never happened, it's just part of life, one time you have this, the next time you have that. I see it as something fated, so it happened, life goes on and everything is fine... (Šaňáková et al., 2024, p. 6)

Survivors emphasized stroke as a life experience contributing to their life story, rather than an identity-defining event, "it doesn't have to define who you are…You can be someone who had had a stroke and still be who you were before that" (Hutton & Ownsworth, 2019, p. 282).

This process removed the power from functional changes, allowing stroke to be viewed through the lens of normality. This consequently mitigated the perceived impact on their life and sense of self, facilitating continuity, "I haven't quite got the stamina I had before. I tend to fall asleep in the evenings, but I mean, I suppose for 60 I'm not too bad" (Hawkins et al., 2017, p. 7).

> There's no question in my mind that I'm still on the journey to be what I was before...An even better me...A me that's learnt from the wisdom of the experience … I've not sat and thought I need to make an adjustment and accept the new me as being as good as the old me, because it's the same me. (Wolfenden & Grace, 2012, p. 208)

Adaptive Engagement. Accessing known roles was portrayed as integral by many, withholding a profound impact on how they conceptualized themselves. The ability to return to previous roles provided structure and meaning that granted an avenue of familiarity.

Re-engaging with facets of previous occupations enabled the use of maintained skills in a way that complemented those of their pre-stroke self. It appeared easier for survivors to recognize themselves when "everyday life regained a rhythm they felt familiar with, they reacquired their natural flow in being" (Eriksson & Tham, 2010, p.188).

> I do notice that I became very happy and very ... I changed a lot when I started working. It's just so lovely getting out-away! And to know that I'm useful. Doing something positive or productive, or anything, yeah. Just staying around here at home, that's not me! (Kouwenhoven et al., 2011, p.6)

Indeed, for some, accessing previous roles was imperative for their perception of themselves within society as valuable, useful and productive individuals. Re-training the conceptualization of how a role could be engaged with therefore enabled access to the known self, preserving their sense of agency and contribution, "Well I [was] nonsociety and now I'm contributing to society. I feel like I'm using my expertise to some degree and contributing because for the first couple of years, I wasn't feeling useful" (Anderson & Whitfield, 2013, p.825). Flexibility and realistic self-expectations were integral to this process.

> … because it gives me a link back to my past what I used to be able to do. Because, when you have what I had, and you've gone through it, you think there's absolutely nothing that you can contribute, everything, all your experience is just gone, and being a conversation partner, it gives me some link to what I used to do. (Swart & Horton, 2015, p. 204)

For others, the conceptual redefinition of what it meant to fulfil a role facilitated access of elements critical to core values of their pre-stroke self-identities. This process was often complex, involving the challenge of deeply ingrained norms and the modification of

pre-existing role definitions. This reconceptualization allowed for the continuity of long-standing roles and values (Hutton & Ownsworth, 2019).

> ... you have this ideal picture in your head about what a dad does and what he can do […] I can get my electric wheelchair, zoom after them chase him around the park. […] I do remind myself, but you do have this ideal picture of what a dad should be. I remind myself, and I'm reminded by others constantly I'm a good dad, and I still am able to do that, so I don't have any issue so much anymore. (Cregan et al., 2022, p. 2277)

Identifying and endorsing diverse and meaningful ways to engage with roles and values, despite limitations, served to facilitate access to components thought of as critical to the self and thus, the consolidation of self-identity.

Accessing Competence. These narratives captured the perception of retained aspects of their identity thought of as critical to how the individual defines themselves. In this case, how they identify themselves lay within their values, and who they perceive themselves to be. This served to facilitate the reconciliation of identity by providing an avenue of consistency.

> Like, who am I?...I was something more than this body on the trestle table...That's probably one reason why I wasn't upset at all by the changes that had come, that's not the sum total of me. That's not how I was identifying myself. (Wolfenden & Grace, 2012, p. 206)

> I: ... How…would you describe yourself as different today? Would you use other words about yourself?
>
> E: No, I do not think so. I do not think that I have changed. I have always felt that… my heart beats for volunteer work. And it still does. (Glintborg, 2015, p. 14)

For others, successfully interacting with daily activities or hobbies elicited a sense of normality that mitigated the influence of change, thereby encouraging the increased importance of these retained abilities. Despite persisting functional difficulties, the self was viewed as enduring in an almost entirely recognizable way.

> I believe that it is important that one tries to get out a little, like before, to the cinema and to restaurants and maybe go shopping and try on clothes. So you don't get scared. The first time I thought, how's this going to work, if I can't do it. But it felt really good. So, I'm not *that* much different. It's almost like it was before, even if it's hard to try on clothes, of course. (Eriksson & Tham, 2010, p. 188)

A sense of competence was emphasized by these retained abilities, further allowing the view of the self as maintained externally from impacted factors. This appeared motivating, reinforcing access to the recognized self and in turn increasing self-efficacy.

> One of the best pieces of advice I've ever been given, ever, was when I came out of hospital and the wife of one of the other stroke survivors said "before you were taken ill there was probably 1000 things you could do, as a result of your stroke you can only do 700 of them. You can add that and make yourself miserable by dwelling on the 300 things you can no longer do, or make yourself content by thinking 'well, I'm still alive and I'm still able to do 700 things'". (Swart & Horton, 2015, p. 207)

> That was good practice for me; I could get the text together so it was coherent. I like it when people listen to me, when you can make some kind of a speech. And it feels so right, so meaningful, so close to reality. And it felt like I was on the road to recovery again. Otherwise, I have felt out of things. (Eriksson & Tham, 2010, p. 188)

Theme 3: Reinvention

The process of reinvention required a significant personal transformation, involving shifts in values and beliefs, which ultimately led to a renewed sense of self and purpose.

Discovering a New Self. Personal development was a key facet of the reinvention process, within which some individuals experienced profound shifts in their values and priorities. These internal shifts represented a transformative element of self-identity reconciliation, driven by the recognition that their identity had to evolve to incorporate both the challenges and lessons of life post-stroke.

> I had long hair [...] I had all my hair cut off. Right off, while staying with a friend. I mean, really, really short. The hairdresser said, "Are you sure about this?", but it was because in a way I thought, "Well, this hair is the hair of her, it's the hair of the woman, that could, that walked and was well and wasn't, you know, and, wasn't disabled and I don't want her hair anymore because I'm not her now. I'm somebody new". (Kuluski et al., 2014, p. 7)

Narratives emerged that outlined this re-evaluation of identity as accompanied by a change in priorities. External achievements became less important, and a focus on intrinsic values emerged. This development encouraged newfound clarity, reflecting a deeper understanding of what truly mattered in life, contributing to a more authentic and fulfilled sense of self.

> I'm not going to kill myself to do anything anymore. You know, I - I basically live for the day because I am the first one who can experience that you never know if you're going to be here tomorrow… I don't care about being a, you know, that career woman, I just care about living a happy normal life. Doing the things I enjoy doing and having that little bit of money to enjoy with my family as well. And that's it,

> that's all that matters to me.… To me I'm happy with the basics in life. So, yeah, it has changed me. (Stone, 2005, p. 22)

The stroke served as a catalyst for the reinvention of a 'new self', where survivors adapted to their new realities whilst redefining their self-identities with the things that they value the most. By incorporating their values with the impact of their stroke experience, this process thereby reduced self-identity discrepancy, serving as an agent of reconciliation.

Finding a New Purpose. For many survivors, finding purpose represented an integral process in the development of a meaningful life post-stroke and the consolidation of self-identity. Encompassing feelings of being valued and appreciated, belonging and contributing to something beyond themselves appeared a natural development.

Volunteering, contributing socially and advocating within the stroke community was found to be empowering, "that is what made me tell it because I thought it may help" (Becker et al., 2022, p. 2819). This represented a new life meaning, often resulting in the provision of support and education that facilitated a sense of giving back and being there for others, "I was helped by many people as I was recovering from stroke. I tell myself if anybody needs my help, I must help if I can" (Lo et al., 2021, p. 6).

Exploring alternative paths of purpose allowed for the integration of new competencies and abilities, while emphasis was placed on the purpose of expanding relationships with family and friends. This paved the way for reinvention within integral levels of the self, fostering a renewed sense of self-efficacy. Central to an ongoing recovery and the negotiation of identity, a newfound value and purpose was elicited, shaped actively by the integration of past and present selves, "learn from the past to relieve concerns, worries, pain, regret, and find new meaning" (Lo et al., 2021, p. 6).

Theme 4: Reclaiming Agency

Rejecting Disability. The process of internal motivation represented an inner drive that propelled survivors to both pursue recovery and overcome adversity. Encompassing traits of determination and stubbornness, survivors outlined this mindset as manifesting in a conscious decision to reject disability, adapt to challenges and engage in rehabilitation. For some, this rested on their refusal to integrate disability into their narrative, "the thought process inside my head was, 'Disability is other people and disability isn't me. I'm not disabled and I'm not going to be disabled'" (Wolfenden & Grace, 2012, p. 206).

In doing so, survivors were empowered to view challenges as surmountable, and therefore recovery as achievable. The persisting belief in the possibility of progress functioned as a source of motivation, fostering enduring hope. This encouraged a continued persistence that served to facilitate therapeutic engagement, "I'm a very stubborn person. I started to work with myself in order to be more verbal, I began to communicate more and stand up for myself, speak in the company of others, I started over from the beginning" (Erikson et al., 2016, p. 850).

Self-efficacy and self-identity were mutually reinforcing, with the confidence to circumvent obstacles shaped by personal traits, and successful engagement enhancing belief in one's abilities. Thus, self-confidence and persistence, despite the fear of failure, further enabled survivors.

> I've had that strategy all along, and then I say to myself that I should just dare to do it, and then you can do it. You've been able to take the train, take the bus, get your connections, you get there. (Eriksson & Tham, 2010, p. 190)

Others emphasized the critical role of a positive and optimistic outlook in sustaining a fighting spirit. Approaching recovery with the embrace of optimism appeared to nurture both persisting hope in the face of adversity and the resilience to overcome setbacks.

At the core of this fighting spirit, an internal drive reflected a deeply ingrained belief in the individual's strength and ability to overcome. Many reported their recovery as fueled by their own personal determination to succeed: "I wouldn't be as far along the recovery process if I hadn't been determined. So I thank myself for being dogged" (Hutton & Ownsworth, 2019, p. 280). In some cases, extending beyond trait determination, an unwavering belief in themselves and their recovery in spite of the challenge posited anything as achievable.

> Always positive. I want to do something then I *do* it. A willpower…When I had a stroke at 48, it took me seven months to get out of hospital. I knew straight away, I have to give all I got, positive. (Hutton & Ownsworth, 2019, p. 280)

Re-accessing Responsibility. Narratives emphasized how survivors found strength and purpose through their sense of duty and commitment. The acknowledgement of responsibility as extending beyond themselves served as a driver of progress. Whilst existing as an external facilitator, this in turn created an internally held accountability, supporting persistence in the recovery journey and thereby contributing to self-identity reconciliation.

Individual roles within family dynamics emerged centrally, with interpersonal partnerships and parenting responsibilities providing a sense of direction and purpose. Meaningful engagement with others became more profound, further motivated by the desire to successfully meet the needs of others (Šaňáková et al., 2024). For those within parental roles this was particularly evident, whereby successfully interacting with parenthood represented achievement and thus, something to strive for, "... looking after my two kids and

being a mother to them, being a mum, doing what mums do, that's an achievement to me" (Kuluski et al., 2014, p. 8). This seemed to both motivate persistence in recovery, as well as integrating changed abilities as part of the self, "then I remind myself that to be a good dad, I've got to do these things [rest and pace myself] in order to be ready and fit and awake to do things later. It's about balancing again" (Cregan et al., 2022, p. 2278).

Externalizing the responsibility of recovery integrated the understanding of the stroke as influencing the wider system, as opposed to the individual singularly. In doing so, the impact of stroke extended beyond the quality of life of the survivor, motivating engagement with recovery. This related in part to the unburdening of loved ones, articulated to "not just be a useless blob around this house that can't do anything" (Kuluski et al., 2014, p. 8). In other ways, this motivation reflected a shared responsibility to adhere to mutual plans and commitments, reaffirming the importance of life beyond stroke, "after all, she and I were supposed to have a life, too" (Arntzen et al., 2015, p. 1632).

Theme 5: Embracing Social Support

For some survivors, the role of others in the promotion of self-identity reconciliation was integral. This was inclusive of family and friends extending the perception of 'sameness', as well as other survivors who projected a reciprocal understanding of disability as 'normal' and provided a collective belonging (Pedersen et al., 2019). This emphasized the portrayal of continuity irrespective of functional changes (Glintborg, 2015).

> Ah, but you know it's my friends. They don't look at me like there's something different. When I complained about, you know, not being able to hit the [golf] ball, she says, 'Boy, you're just like the rest of us'. You know so they, they're very encouraging, but they don't make me feel like there's something wrong with me. (Anderson & Whitfield, 2013, p. 826)

In the same vein, being positioned as capable was further normalizing, incorporating both the belief of unchanged abilities and active encouragement in rehabilitation. This was demonstrated within narratives capturing personal, professional and healthcare networks as actively encouraging access to hobbies, roles and recovery pursuits in a way that affirmed belief and optimism. For survivors this was empowering, strengthening self-esteem and self-efficacy. Together, these elements reaffirmed continuity, reinvention and acceptance.

> I have had the most tremendous support from my family and friends and I think that has just made the biggest difference to me. Everybody around me has just been so good I think. That's really helped me with my overall outlook on things that I've just kind of just got to get on with it. (Kuluski et al., 2014, p. 7)

Rather than existing separately, the included narratives captured the coexisting nature of these processes, interwoven with one another to reflect the individuality of survivors and their experiences. For some, balancing the processes of accessing the known self and reinvention enabled the development of a cohesive and adapted sense of self. For others, finding purpose post-stroke and engaging in the process of acceptance contributed to self-consolidation. The adoption of these processes transcended the management of functional challenges, incorporating the importance of individually valued psychosocial elements.

Discussion

The narrative synthesis of 23 primary qualitative research papers explored the processes that appear to contribute to identity reconciliation from the experience of post-acute stroke survivors. The included data was synthesized into five themes: (1) Acceptance, (2) Accessing the Known Self, (3) Reinvention, (4) Reclaiming Agency, and (5) Embracing Social Support.

Acceptance was outlined as a crucial process in enabling the integration of changes and loss of normality resulting from stroke. These findings align with survivors reporting the acceptance process as necessary in moving on from their stroke (Mac Conaill et al., 2024), and those highlighting acceptance as negatively correlating with anxiety and depression symptomology (Crowley & Andrews, 2018). Moreover, a Social Cognitive Transition Model for Stroke (SCoTS; Taylor et al., 2011) recognizes the relevance of gradual acceptance in the development of a changed sense of self and subsequent adjustment. Thus, where challenging experiences disrupt self-identity or the sense of self, the process of acceptance may be crucial in allowing movement beyond disruption towards reconciliation. Additionally, acceptance for some seemed to enable the action of additional processes contributing to identity reconciliation. This corresponds with findings outlining acceptance as important to progressing beyond reacquiring the 'old normal', leading to increased motivation and positive adjustment (Lim et al., 2024). It therefore seems that in some cases, the process of acceptance is integral to either negate the negative influence of stroke on the coherence of self-identity, or to enable alternate processes of reconciliation.

Within the theme of acceptance, the process of embracing the current self irrespective of the past was highlighted, encouraging the encompass of the self-as-is. This reflects concepts outlined within the Y-shaped process model of rehabilitation (Gracey et al., 2009), whereby the pre-injury or 'ideal' self contributes to the experience of discrepancy. Thought to relate to the often sudden and severe nature of stroke, the ideal of the past-self has been tied to profound feelings of loss, uncertainty and social isolation (Salter et al., 2008). As explored within an identity focused derivation of the model (Ownsworth & Gracey, 2017), the process of 'moving beyond' discrepancy encourages exploration of the current and aspired to self, supporting reflection, learning and reconnection with the self.

On the other hand, this synthesis identified the processes of rejecting disability and an optimistically persistent determination as motivating for some, aligning with findings from a similar unpublished thesis synthesis for the ABI population (Burchill, 2018). Within the context of this synthesis, this seemed to relate to denial coping, encompassing the rejection of discrepancies to self-identity, but with key differences. The theme suggested that the rejection is associated with a determination and energy to engage in valued actions, as opposed to de-energized denial. It appears that in some cases, this rejection therefore facilitates motivated engagement and successful adaptation. Nonetheless, although identified as a process contributing to self-identity reconciliation for some, a lower quality of life and higher risk of depression is shown for survivors with avoidance or denial coping styles than those with adaptive, flexible styles (Dewilde et al., 2019). Whilst outlining the complexity of self-identity reconciliation post-stroke, this highlights the need for an individualized approach to understanding and therefore supporting the consolidation process.

The process of accessing social support encouraged the continuance of normality, whereby others positioned survivors as capable or unchanged despite physical limitations, therefore serving to promote a sense of the 'known' self. For stroke survivors, the grounding of self-concept has been inherently tied to their social experiences (Ellis-Hill et al., 2008), with external support increasing self-efficacy and identity reconciliation (Hole et al., 2014). Our findings further outlined the value of others in positively influencing access to therapy and the learning and adjustment process by reinforcing and encouraging engagement. Similar findings identified that family support contributes positively to increased independence (Setyoadi et al., 2018), participation (Elloker & Rhoda, 2018) and the accelerated recovery of survivors (Kosasih et al., 2020).

For some, accessing the known self through processes such as engaging with competence supported the integration of stroke into the life narrative, whilst adaptive engagement facilitated the understanding of self-identity as unchanged. In doing so, the influence of functional changes was minimized and a recognized self accessed. For others, these discrepancies were challenged with the reinvention of self and the integration of a new purpose. This allowed for increased value to be placed on the things that are accessible to the survivor, such as family and friends, whilst encouraging a renewed sense of self-efficacy in the creation of a new life meaning. The processes of accessing the known self and reinvention may therefore both represent protective processes, as lower mood, self-esteem and quality of life have been noted in survivors who evaluated more pre- to post-stroke self-discrepancies (Lapadatu & Morris, 2019).

Collectively, this synthesis indicates alignment between the processes purported to support self-identity reconciliation and those of the Hexaflex model of psychological flexibility (Hayes et al., 1999; 2011). For example, our process 'Embracing the Now' encompasses living in the current, flexibly endorsing the release of the past to reduce distress with pre-stroke comparisons. This closely corresponds with the Hexaflex process 'Contact with the Present Movement'. Our conceptualization of 'Reclaiming Agency', pertaining to actively fighting against the narrative of disability and the conscious reengagement with responsibilities, both of which reflect persistent actions driven by personal values, correspond with the Hexaflex process of 'Committed Action'. Whilst non-exhaustive, this provides insight into how these findings relate to and thus may be utilized in the directed application of Acceptance and Commitment Therapy (ACT; Hayes et al., 2006) when supporting stroke survivors with self-identity reconciliation.

Limitations

The lack of alignment between many of the included empirical studies and the review aims is demonstrated in the rating of most of those included as central, three as peripheral and only four as core served as a restricting factor of this synthesis. Furthermore, the scarcity of literature specifically exploring positive self-identity reconciliation post-stroke resulted in the limited extraction of appropriate findings for some studies. Consequently, this may therefore have encouraged more significant interpretations by the reviewer. With this said, steps were taken to ensure that the final themes were based upon several studies, were agreed between authors, and that none were based singularly on the findings of papers classified as peripheral.

It should also be noted that many of the included studies either did not report or partially explored author reflexivity. This is particularly important when recognizing the impact of social experiences on self-identity (Ownsworth, 2014) and thus represents a notable limitation of this review. Whilst the adoption of a critical realist paradigm facilitated a pragmatic approach within this review, this served to minimize the often relevant methodological and theoretical differences between qualitative studies. Additionally, by singularly synthesizing positive processes, this approach may have additionally overlooked those inhibiting or maladaptive in nature, thereby outlining an incomplete understanding of the complexities of self-identity reconciliation post-stroke.

It is relevant to recognize that most of the studies included represent research conducted within Western and thus individualistic cultures. Given our finding of the identified relevance of family and social support in the process of self-identity reconciliation, it seems pertinent to acknowledge that this may have consequently led to a narrower range of perspectives, with less focus on family and the wider social context. Nonetheless, our

findings remain valuable in the developed understanding and management of post-stroke adjustment.

Clinical Implications and Future Research

This synthesis highlights the importance of incorporating the wider social system into the recovery process. Whilst facilitating meaningful and therapeutic engagement, the importance of social factors further extended to encompass motivation, normalization and felt continuity. Importantly however, incorrect assumptions of ability and negative behaviors from others have been found to weaken an individual's self-concept, resulting in a threat to identity continuity and subsequent social isolation (Martin-Saez & James, 2021). Similarly, although internalizing narratives can reinforce the known self and support positive adaptation and engagement in some cases, this may depend on how the social environment positions the survivor. Therefore, actively integrating the social system within this process may encourage active engagement beyond the clinical setting, while fostering a shared understanding of the values and goals of survivors.

Our findings also emphasize the need for a flexible and personalized approach to post-stroke therapeutic support, particularly when addressing self-identity. Given that processes encouraging motivational engagement for some may, for others, inhibit recovery and promote avoidance, an open and adaptable approach may allow for both the capture and incorporation of these individual differences. Further research is needed to better understand the complexity and nuance of self-identity reconciliation after stroke. This would inform the flexible perspective of these processes, challenging the use of blanket assumptions and guidance that overlooks variation between individuals. Future studies employing longitudinal designs may elicit the dynamic nature of these processes over time, whilst the explicit

exploration of sociocultural context and intersectionality may support the sensitive and adaptive understanding of identity reconciliation after stroke.

Importantly, the identified processes provide insight into the clinical utility of varying therapeutic approaches. For example, encouraging the deconstruction of the illness narrative, increasing control and identity reconstruction with hope, Narrative Therapy has been suggested as having utility in the reconstruction of identity post-stroke (Chow, 2015), and has been shown to support increased mastery, hope and meaning in life (Chow, 2018). Moreover, Compassion-Focused Therapy has been suggested as having potential utility where self-concept discrepancies result in self-criticism (Ashworth, 2018; Robinson et al., 2019). The effectiveness of second-wave CBT approaches including the cognitive restructuring of maladaptive self-beliefs, behavioural experiments to test and rebuild self-efficacy and goal setting to re-engage valued activities also aligns with these processes, suggesting potential for the support of self-identity reconstruction. (Ahrens et al., 2023; Choi & Kim, 2024). In addition, occupational therapy interventions that facilitate re-engagement with roles, including community-based rehabilitation involving social, cultural, or leisure activities (Norlander et al., 2022; Proffitt et al., 2022), address identity by enabling participation in meaningful roles and contexts. Furthermore, group-based self-management and psychoeducation interventions, working to increasing knowledge, collaboration, communication, and access to resources, have been shown to promote problem-solving, vicarious learning, and the normalisation of the post-stroke experience (Clark et al., 2020).Clinically, this synthesis further indicates the potential therapeutic utility of approaches aimed at improving psychological flexibility, such as ACT (Hayes et al., 1999). Indeed, recent advances in the development and assessment of therapeutic interventions to support psychological adjustment post-stroke have included the exploration of ACT-informed interventions. Whilst preliminary feasibility stage (WAterS: Wellbeing After Stroke, Foote et

al., 2024; Patchwood et al., 2024) and pilot trial stage (VaLiANT: Valued Living after Neurological Trauma, Sathananthan et al., 2022) findings indicate the acceptability of these approaches, further explorations are required better understand the individualized contributory mechanisms shaping post-stroke adjustment.

However, although this synthesis provides insight into how psychological flexibility, and thus ACT-informed approaches, may be leveraged clinically to contribute to a reconsolidated sense of self, our findings underscore the need for further research to refine and apply these concepts. Therefore, conceptually mapping processes contributing to and inhibiting self-identity consolidation post-stroke within the framework of psychological flexibility could valuably inform service support and the individualized application of therapeutic approaches.

Conclusion

The current study reviewed and synthesized the processes reported by stroke survivors as supporting self-identity reconciliation. The analysis and findings highlighted themes with distinct, interacting processes that align conceptually with theoretical models of reconstruction and adjustment in ABI. The individualized experience of the reconciliation process was captured. These findings inform clinical directions and identity areas for future research.

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Chapter 3: Bridging Chapter

The meta-synthesis of qualitative literature exploring stroke survivors' perspectives on processes that contribute to the reconciliation of self-identity post-stroke identified several key areas of interest. Survivors described acceptance as supporting discrepancy reduction, thereby eliciting harmony between the pre- and post-stroke self. Accessing known competencies and roles enabled continuity of identity while reinvention fostered the meaningful evaluation and manipulation of priorities, facilitating the discovery of a new purpose. Reclaiming agency through determination and responsibility encouraged motivation and therapeutic engagement whilst reinforcing self-efficacy; social support enabled the access of external encouragement, validation and normality. These processes were identified as facilitating the reconciliation and redefinition of self-identity after a stroke, fostering a sense of cohesion and adjustment.

Whilst distinct, the explored narratives emphasised the interconnecting and co-occurring nature of these processes. Indeed, when reviewed conceptually, similarities were recognised between these processes and those denoted as increasing psychological flexibility. Defined by six separate but interlinked processes, the Hexaflex model of psychological flexibility theoretically informs acceptance and commitment therapy (ACT; Hayes et al., 1999; 2011). Together, this proposes the potential utility of ACT-informed approaches in the support of self-identity reconciliation and adjustment difficulties for the stroke population.

Recent literature has highlighted the acceptability of an ACT-informed intervention (Patchwood et al., 2024) and the association between greater psychological flexibility and ACT-informed intervention use on positive adjustment outcomes with the stroke population (e.g., Large et al., 2020; Majumdar & Morris, 2018; Ooi & Steverson, 2023). However, a

detailed understanding of these associations and the evidence-based tailoring of such interventions remains limited.

Quantitative exploration of this relationship would allow for the analysis of measurable, objective data that may in turn facilitate the exploration of patterns, relationships and generalisable trends. This would thereby function to inform the clinical utility and practical implementation of associated approaches. The empirical study captured within chapter 3 therefore aimed to explore the relationships between stroke severity, post-stroke adjustment, and the role of psychological flexibility, as well as how adjustment associates with mood, clarifying their therapeutic associations.

Chapter 4: Exploring Predictors of Post-Stroke Adjustment: Psychological Flexibility and Stroke Characteristics

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Keywords: Stroke, Adjustment, Psychological Flexibility, Mood, Empirical Research

Abstract

The often sudden and significant impact of stroke can create discrepancies between the pre- and post-stroke self. Consequently, survivors face difficulties in adjusting, encompassing challenges reconciling identity and adapting to change. Psychological flexibility, the ability to remain open to experiences and engage in value-driven behaviors, has been suggested to facilitate adaptive post-stroke adjustment. This cross-sectional study therefore aimed to investigate the relationship between stroke severity, psychological flexibility and adjustment, as well as capturing the association between poor adjustment and mood outcomes. Analyses of self-report measures for 95 stroke survivors revealed that significant physical stroke severity predicted poorer adjustment for some components, whereas cognitive stroke severity did not. Psychological flexibility was a significant independent predictor of better adjustment outcomes regardless of physical or cognitive stroke severity; it did not moderate the relationship between stroke severity and adjustment. These findings indicate that whilst flexibility may not alter the impact of stroke severity on adjustment, it may relate independently relate to better outcomes. Lower depression and anxiety symptomology was inconsistently associated with better adjustment. These findings endorse the capture and integration of psychosocial and clinical stroke variables when supporting survivors with adjustment. Clinical implications and directions for future research are discussed.

Introduction

Stroke occurs when the blood supply to the brain is interrupted or reduced by a blockage or rupture (National Institute of Neurological Disorders and Stroke, 2024). It is the second leading cause of death worldwide and the third leading cause of death and disability (Feigin et al., 2021). Post-stroke consequences are wide-ranging, negatively impacting the quality of life of both survivors (Singh et al., 2018) and caregivers (Moura et al., 2022). Their impact is furthered by the sudden and unpredictable nature of stroke, as well as the occurrence of deficits that are typically more significant in the immediacy (Hilis & Tippett, 2014).

Cognitive impairment is common post-stroke (Sun et al., 2014), has been closely linked to poorer functional outcomes (Jokinen et al., 2015) and is an important determinant of both general and health-related quality of life (Cumming et al., 2014; Park et al., 2013). Similarly, persistent physical impairments are prevalent (Carmo et al., 2015) and have been shown to directly predict quality-of-life post-stroke (Ramos-Lima et al., 2018). Moreover, both have been found to negatively influence participation and reintegration with community and social factors (Cawood et al., 2016; Wynja et al., 2024). Thus, it is unsurprising that many report these changes, and their difficulty in accepting them, as major barriers to adjustment (Sarre et al., 2014).

Broadly defined as understanding and adapting to changes in life circumstance and individual functioning (Ownsworth, 2014), adjustment following brain injury has been suggested to involve progression through distinct phases, contingent on contextual barriers and facilitators (Kirkevold, 2002). Indeed, a recent exploration of the adjustment to life changes following acquired brain injury (ABI) rejected the notion of a binary ‘adjusted/ not adjusted’ perspective, conceptualizing the adjustment process as multifactorial, and impacted by complex and diverse experiences (Buckland et al., 2025).

A key factor in this process is a survivor's perception of their own capabilities, which shapes their tendency to evaluate and subsequently avoid risk, ultimately inhibiting adaptation and adjustment. For example, higher threat appraisal and reduced participation in physically and cognitively demanding activities have been associated with poorer self-perceived abilities (Hoyle et al., 2023; Nicholas et al., 2020). Similarly, increased symptoms of depression and anxiety have been linked to the subjective awareness of impaired abilities (Wheeler et al., 2023), both of which can negatively impact recovery, as well as stroke-specific and overall quality of life (Kusec et al., 2023; Williams & Demeyere, 2021).

By highlighting the role of perceived disability in activity avoidance, these findings underscore how negative self-evaluations work to prevent survivors from challenging these beliefs. This self-reinforcing cycle aligns with the Y-Shaped Model (Gracey et al., 2009), whereby perceived incompetence leads to avoidance, restricting opportunities for rehabilitation, the disconfirmation of negative beliefs, and the affirmation of ability (Rogers et al., 2018; Saunders et al., 2020). Further consistency is recognized with the modified Social Cognitive Transition Model for Stroke (SCoTS; Taylor et al., 2011), which elaborates on the role of dysfunctional assumptions and interpersonal responses in the post-stroke adjustment process. As participation in personally meaningful experiences is associated with improvement in emotional well-being and quality of life post-stroke (Egan et al., 2014; Matérne et al., 2022), survivors' perceptions of their ability to engage, and indeed their adjustment to change, appears critical.

Conceptually, this focus on re-engagement with meaningful activities within adjustment literature parallels the core tenets of Acceptance and Commitment Therapy (Hayes et al., 1988, 1993). Specifically, ACT aims to reduce the impact of rigid thinking patterns that promote avoidance in the face of threat, instead fostering engagement in value-driven, meaningful behaviors (Hayes, 2004). This approach is theoretically informed by six

interrelated processes that foster adaptability or, when absent, rigidity and maladaptive functioning (Hayes et al., 2012). These processes are conceptualized as contributing to 'psychological flexibility', described as the ability to consciously engage with the present, and the maintenance or adjustment of behaviors to be in line with one's values (Hayes et al., 2004). Thus ultimately, ACT encourages individuals to respond to challenging situations with greater flexibility, promoting adaptive functioning and adjustment.

Importantly, stroke survivors have reported finding ACT helpful when adjusting to post-stroke limitations (Large et al., 2020). Moreover, greater psychological flexibility has also been related to better mood outcomes and more positive physical experiences post-stroke (Crowley & Andrews, 2018; Gandolfi et al., 2021). While these findings reinforce ACT's relevance and effectiveness, the specific mechanisms through which psychological flexibility facilitates adjustment remain unclear, warranting further investigation. Indeed, preliminary explorations endorse the feasibility, acceptability and varying efficacy of ACT-informed interventions in facilitating post-stroke psychological adjustment (Foote et al., 2024; Patchwood et al., 2024; Sathananthan et al., 2022), with further explorations noted as required to better understand their application and effect.

It therefore seems congruent that increased psychological flexibility, and thus the therapeutic application of ACT, may function to interrupt the cycle of avoidance behaviors that arise from negative self-perceptions and distress triggered by the realization of present-past discrepancies, shifting the narrative from one of avoidance to that of engagement and adjustment. Thus, we propose that higher psychological flexibility actively facilitates adjustment post-stroke. We also propose that innate psychological flexibility may lessen the impact of stroke severity on adjustment, by minimizing the impact of distress associated with more severe strokes on behavior that may disrupt adjustment.

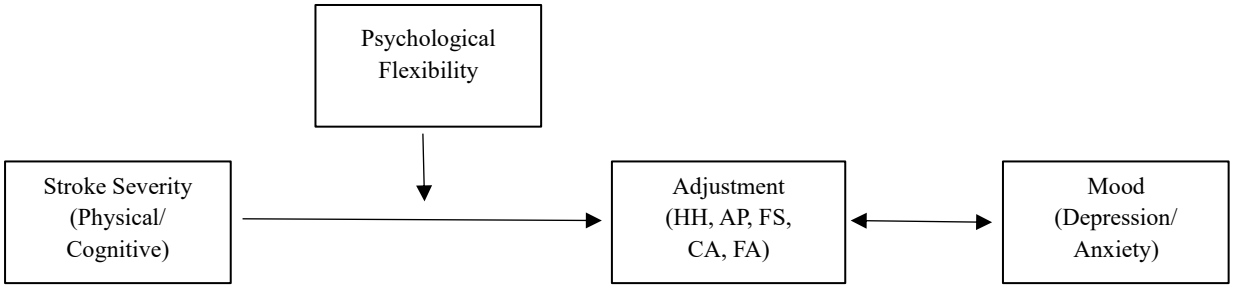
Currently, our understanding of this mechanism is limited. Indeed, better understanding the post-stroke adjustment process may pave the way for more effective, tailored interventions, and improved outcomes. Aligning with the NHS long-term plan, this would subsequently inform stroke rehabilitation that can work to reduce ongoing healthcare provision and lower patient-care costs (NHS England, 2019). Moreover, approaches utilizing corresponding process principles (e.g., Hexaflex of Psychological Flexibility) to assess the applicability of therapeutic methods (e.g., ACT) aligns with current recommendations for progress-based approaches (Hofmann & Hayes, 2019).

This empirical research therefore aims to understand the associations between stroke severity factors, post-stroke adjustment, and the impact of psychological flexibility on this association. It is hoped that this will clarify the interactions between these elements, thereby enhancing our understanding of their therapeutic dynamics. It was therefore hypothesized that:

1. Higher levels of physical (a) and cognitive (b) stroke severity would significantly predict poorer adjustment
2. Greater psychological flexibility would significantly predict better adjustment
3. Psychological flexibility would play a significant moderating role in the association between stroke severity factors and adjustment
4. Poorer adjustment would be significantly correlated with (a) higher depression and (b) anxiety.

Figure 2

Hypothesized Relationships Between Stroke Severity, Adjustment, Flexibility, and Mood



Note. HH = Helplessness-Hopelessness, AP = Anxious Preoccupation, FS = Fighting Spirit, CA = Cognitive Avoidance, FA = Fatalism

Methods

Participants

Participants were English-speaking adults (≥18 years old), who had experienced a stroke at least six months prior, and were at least 18 years old at the time of their first stroke. Those who had a traumatic brain injury (TBI), cognitive difficulties that inhibited their participation, or other neurological conditions aside from stroke were excluded from the study.

Study Design and Procedure

The study employed a cross-sectional survey design; the empirical report was informed by the STROBE guidelines for cross-sectional research (von Elm et al., 2007; see appendix F). Participants were recruited through dissemination of the study poster by the stroke charity Different Strokes and posts on relevant social media group pages (see Appendix G). The online survey, hosted on the JISC Online Surveys platform, was accessible through a QR code or direct link.

Upon access, participants reviewed the study information sheet (See Appendix H) and provided informed consent (See Appendix I). A demand and fatigue break encouragement

reminder was presented (See Appendix J), acknowledging the potential demand of completing the measures and informing the participants that they could pause and return to the survey if needed. This was followed by a demographic and stroke specific information questionnaire and the study measures. Participants who met exclusion criteria (e.g., never having had a stroke) were redirected to an early debrief form (Appendix K). Upon completion, all participants received a debrief form (Appendix L), summarizing the study and providing crisis and support contacts (UK, USA, Australia). Researcher details were available for inquiries or complaints.

A Patient and Public Involvement (PPI) group, consisting of two White female stroke survivors, reviewed the research protocol and assessment battery for appropriateness. Their feedback was integrated into the final study design and materials (See Appendix M for further details). Ethical approval was granted by the University of East Anglia Faculty of Medicine and Health Sciences Research Ethics Committee (identifier ETH2425-1364; Appendix N). Data collection took place between May and December 2024.

Measures

The survey featured seven questionnaires, collecting data relating to participant demographics, clinical stroke information, physical and cognitive function, adjustment, psychological flexibility, depression and anxiety.

Demographics and Characteristics

A demographic and stroke characteristics questionnaire collected information pertaining to participant demographics, namely: age, gender, ethnicity, and current residence by country/ continent. Questions regarding clinical aspects of the individuals' stroke included the experience of and number of strokes, time since the most recent stroke, age of first stroke, and the side of the brain involved. Further queries included the experience of a TBI or

alternative neurological condition, and if the survey was completed alone. A final question, included to inhibit bot survey completion (Storozuk et al., 2020) asked the individual to confirm that they were human.

Physical Stroke Severity

The Stroke Impact Scale-16 (SIS-16; Duncan et al., 2003) is a 16-item subjective measure of post-stroke physical function, scored from one to five, with lower scores indicating greater impairment. The total raw score ranges from 16 to 80, which is then standardized to a scale of 0–100. When compared with the Barthel Index, an alternative measure of post-stroke disability (Mahoney & Barthel, 1965), the SIS-16 was more sensitive to change (Duncan et al., 2003). The measure has demonstrated excellent internal consistency (α = 0.92), emphasizing validation for use in stroke (Edwards & O'Connell, 2003). The internal consistency for the current sample was α = .94.

Cognitive Stroke Severity

The Memory and Thinking Subscale of the SIS 3.0 (Duncan et al., 2003) assesses self-reported cognitive abilities across facets of memory, concentration, processing speed, and problem-solving. The measure features 7-items scored one to five, where lower scores indicate greater impairment. The total raw score ranges from 7 to 35, which is then standardized to a scale of 0–100. The subscale has demonstrated strong reliability (α = .97) and good concurrent validity (r = .69) with the Mini-Mental State Examination (MMSE; Folstein et al., 1975) a widely used cognitive assessment tool (Vellone et al., 2015). Internal consistency in the current sample was α = .93.

Adjustment

The Mini Mental Adjustment to Cancer Scale (Mini-MAC; Watson et al., 1994), a refined version of the original 40-item Mental Adjustment to Cancer Scale (MAC; Watson et

al., 1988), is a measure of adjustment through coping strategy use. Consisting of 29 items, the Mini-MAC is categorized into five subscales: anxious preoccupation, fatalism, cognitive avoidance, helplessness-hopelessness and fighting spirit. In the current study, those reporting helplessness-hopelessness experience overwhelm, despair and loss of hope, whilst those with anxious preoccupation face persistent emotional distress and fear related to stroke. Survivors with a fighting spirit show determination and optimism in facing stroke, those with cognitive avoidance actively avoid stroke-related thoughts, and those with fatalistic coping experience acceptance, spiritual faith, and gratitude. For all subscales except fighting spirit and fatalism, a higher score represents a more negative attitude. As the directionality of adjustment varies between subscales, the use of a total score would obscure the distinct meaning captured by each. The MAC has previously been adapted for use in stroke, replacing the word 'cancer' with 'stroke' where relevant, referred to as the Mental Adjustment to Stroke Scale (MASS; Lewis et al., 2001). The MASS has demonstrated reasonable internal consistency (α = 0.62-0.83; Lewis et al., 2001) and has been used successfully within stroke populations (Mahmoud & Nahla Abd Elaziz., 2016; Dodakian et al., 2017).

Whilst the Mini-MAC has not been validated for use in stroke, Wichowicz et al. (2017) identified significance changes when the measure was completed by stroke survivors between different time-points, suggesting a sensitivity to change when used with a stroke population. Permission was obtained from the author (Watson et al., 1994) to adapt the measure by replacing the word 'cancer' with 'stroke' as completed for the MASS. Internal consistency in the current study varied with scores ranging between α = .38-.94 (helplessness-hopelessness, α = .94; anxious preoccupation, α = .87; cognitive avoidance, α = .74; fatalism, α = .66; and fighting spirit, α = .38).

Psychological Flexibility

The Multidimensional Psychological Flexibility Inventory (MPFI; Rolffs et al., 2018) assesses the six dimensions of psychological flexibility (Hayes et al., 1999; 2011). The 30-items are split equally between six categories and scored between one and six. Global flexibility is represented by the totaling of the average score across these categories. The MPFI has demonstrated excellent internal consistency (Rolffs et al., 2018; Seidler et al., 2020) and was recorded as $\alpha = .96$ in the current study.

Notably, the MPFI has not yet been validated for use with stroke populations. Indeed, the Acceptance and Action Questionnaire-II (AAQ-II; Bond et al., 2011) is often employed in research on psychological flexibility in individuals with ABI's (Whiting et al., 2015). Despite this, evidence suggests the concept measured by the AAQ-II as associating more closely with global distress than psychological flexibility (Landi et al., 2021; Rochefort et al., 2018; Tyndall et al., 2019). Importantly, the MPFI has demonstrated good discriminant and construct validity (Landi et al., 2021), indicating that it represents a suitable tool for assessing psychological flexibility in this context.

Depression

The Patient Health Questionnaire 2 (PHQ-2; Kroenke et al., 2003) is a 2-item screening tool assessing the depression symptoms low mood and anhedonia over the past two weeks. Each item is scored 0-3, with higher scores indicating greater symptom severity. Validated for use in stroke populations (de Man-van Ginkel et al., 2012; Prisnie et al., 2016), the PHQ-2 demonstrates good sensitivity (75.0%) and excellent specificity (96.3%; Prisnie et al., 2016). The internal consistency in the current sample was $\alpha = .88$.

Anxiety

The Generalised Anxiety Disorder Questionnaire-2 (GAD-2; Kroenke et al., 2007) consists of two items that screen for anxiety symptomology. Items are scored from 0 to 3,

with higher scores indicating a greater severity and persistence of symptoms. When compared with the Hospital Anxiety and Depression Scale (HADS-A), a validated screening tool for anxiety in stroke patients (McCrory et al., 2023), the GAD-2 has demonstrated strong convergent validity, as well as good sensitivity and specificity (McCrory et al., 2023). The internal consistency in the current sample was $\alpha = .90$.

Power Analysis

A-priori power analyses were conducted prior to data collection to determine the sample size required. Following a conservative assumption of a medium effect size ($f = 0.15$; Cohen, 1992), consistent with prior research using similar variables (Crowley & Andrews, 2018; Majumdar & Morris, 2018), sample targets were estimated using G*Power (Faul et al., 2007).

For a multiple regression model with seven predictor variables, a significance level of $p = 0.05$, and 80% power, the analysis indicated a required sample size of $N = 103$ (see Figure O1, Appendix O). For a two-tailed correlation with a medium effect size ($f = 0.15$) and a significance level of $p = 0.05$, a sample size of $N = 84$ was required for 80% power (see Figure O2, Appendix O).

Analysis Plan

Data analysis was completed using the Statistical Package for the Social Sciences (SPSS; version 29). The dataset was manually reviewed to identify and exclude facetious (e.g., an excessively unrealistic current age such as 150 years old) or satisficing responses (e.g., selecting the same options across all items of a measure despite conflicting responses). Descriptive statistics were calculated to explore the sample's sociodemographic and stroke-specific characteristics. Missing data were managed using pair-wise deletion.

Participant demographics (age, gender, ethnicity), the clinical outcome time since stroke, and their relationship to the components of adjustment were assessed to identify relevant covariates for the regression analyses. This method was chosen to maximize the power of the models and reduce the inclusion of non-influential variables, thereby encouraging a more parsimonious approach and subsequently reducing the risk of a type II error.

To assess the predictive relationships between physical stroke severity or cognitive stroke severity and adjustment (hypothesis 1a & 1b), psychological flexibility and adjustment (hypothesis 2), and to explore the moderating role of psychological flexibility (hypothesis 3), ten moderation models were tested using the PROCESS macro (Hayes, 2022, Model 1). Each model included either physical or cognitive stroke severity as the independent variable, one of the five adjustment components as the dependent variable, and psychological flexibility as the moderator. Demographic and clinical outcome variables were included only if significantly associated with the dependent variable. All continuous predictor variables were centered for the moderation analyses. The reported coefficients are unstandardized.

Finally, to assess the relationship between adjustment components and mood outcomes (hypothesis 4), Pearson's correlations were conducted between each adjustment component (helplessness-hopelessness, anxious preoccupation, fighting spirit, cognitive avoidance, and fatalism) and depression and anxiety. Figure 2 outlines the hypothesized interactions between the study variables.

To control for multiple comparisons, the Bonferroni-Holm method for family-wise error correction was employed (Holm, 1979). This was applied to the 5 moderation analyses where physical stroke severity was the independent variable and to the 5 moderation analyses where cognitive stroke severity was the independent variable. This was further applied to the

5 correlations between depression and the components of adjustment, and the 5 correlations between anxiety and the components of adjustment.

Results

Participants

A total of 109 individuals completed the survey, with 14 cases removed due to ineligibility: three were under 18 at the time of their first stroke, nine were within six months post-stroke, and two had extreme values for time since stroke. The final analytical sample included 95 stroke survivors.

Due to the study design, missing or inapplicable data were only identified within the free text portions of the demographics and stroke specific questionnaire. Two participants did not specify how old they were at their first and only stroke, instead repeating their current age or time since stroke. For both, this information was estimated and populated using their age at time of survey completion and the time since their most recent stroke. One individual chose to not disclose their ethnicity; their data were managed per analysis using pair-wise deletion.

Descriptive Data

Participant characteristics can be found in Table 3. Participants ranged in age from 27 to 82 years (M = 52.3, SD = 12.3) and were predominantly women. Over two-thirds resided in the United Kingdom or the United States, while the remaining participants were from Asia, Canada, Europe, Australia, Africa, New Zealand, Puerto Rico, and Switzerland. Most identified as White.

The majority had experienced a single stroke, with age at first stroke ranging from 24 to 79 years (M = 48.4, SD = 12.3). Time since stroke varied between six and 185 months (M = 43.4, SD = 42.7). Most reported experiencing either a left or right hemisphere stroke and as completing the survey independently.

Table 3

Descriptives Statistics of Demographic and Clinical Variables

Variable	*N*	*%*
Gender		
Female	68	71.6
Male	27	28.4
Ethnicity		
White	73	76.8
Asian or Asian British	12	12.6
Mixed or multiple ethnic groups	3	3.2
Black/ African/ Caribbean	6	6.3
Undisclosed	1	1.1
Continent/ Country		
UK	31	32.6
USA	34	35.8
Canada	7	7.4
Asia	8	8.4
Europe	4	4.2
Australia	3	3.2
Africa	2	2.1
Other	6	6.3
Previous history of stroke		
Yes	13	13.7
No	82	86.3
Side of brain impacted		
Left	38	40.0
Right	43	45.3
Both	8	8.4
Unknown	6	6.3
Survey completion		
Alone	93	97.9
With support	2	2.1

Normality Testing

Histograms and Q-Q plots (see Figures W1-10, Appendix P), as well as Z-scores for skewness and kurtosis were reviewed to assess data normality. Whilst histograms indicated skew for age, SIS, MPFI, the five adjustment components (helplessness-hopelessness, anxious preoccupation, fighting spirit, cognitive avoidance, and fatalism), PHQ and GAD, Q-Q plots and Z-scores indicated approximate normality (violated if Z-score > 3.29; Kim,

2013). Z-score review indicated skew for time since stroke and SIS.C, with time since stroke further violating kurtosis normality (Z = 11.38). A review of the data identified two extreme outliers (296- and 243-months post-stroke) for time since stroke. To preserve clinical relevance and reduce outlier influence, these cases were removed, resulting in improvement to approximate normal distribution (Kurtosis Z-score = 2.17). All assumptions for multiple linear regression were met.

Exploratory Analyses

The associations of demographics of interest (gender, age and ethnicity) and time since stroke with the dependent variables (component of adjustment) were explored. An independent samples t-test revealed that males (M = 8.4, SD = 2.3) scored significantly lower than females (M = 10.4, SD = 2.5) for cognitive avoidance, $t(93) = -3.62$, $p < .001$. No significant gender differences were found for the other components of adjustment. Group comparisons using one-way ANOVAs identified a significant difference between ethnicity groups on helplessness-hopelessness scores, F (3, 90) = 3.00, p = .035. Post hoc analyses employing Tukey's Honestly Significant Difference (HSD) test found significantly higher helplessness-hopelessness scores for those identifying as Asian or Asian British (M = 19.4, SD = 5.4) compared to those identifying as Black, Caribbean or African (M = 11.7, SD = 6.1; p = .038). No further significant differences were identified between ethnicity groups on the components of adjustment. Pearson's correlational analyses indicated that older participants scored significantly lower on the adjustment component anxious preoccupation, $r(93) = -0.28$, p = .006. Those who were further post-stroke scored significantly lower on anxious preoccupation than those who had experienced a stroke more recently, $r(93) = -0.33$, p = .001. No significant correlations were identified for the other components of adjustment and either age or time since stroke.

A Pearson's correlation matrix was conducted to examine associations between the stroke severity, psychological flexibility and the components of adjustment (see Table 4). Better physical function was moderately negatively associated with helplessness-hopelessness, anxious preoccupation and weakly negatively associated with fighting spirit. Better cognitive function was moderately negatively associated with helplessness-hopelessness and anxious preoccupation. Higher psychological flexibility was strongly negatively associated with helplessness-hopelessness and anxious preoccupation and moderately positively associated with fighting spirit and fatalism.

Table 4

Pearson's Correlations Matrix Between Variables and Descriptive Statistics

Variable	*M*	SD	1	2	3	4	5	6	7	8
1.SIS	73.6	19.8	--							
2.SIS.C	75.3	21.2	.41**	--						
3.MPFI	3.9	0.9	.23 *	.32**	--					
4.HH	15.4	5.8	-.34**	-.30**	-.69**	--				
5.AP	20.6	5.6	-.31**	-.32**	-.59**	.74**	--			
6.FS	12.2	2.0	-.21*	-.24	.41**	-.33**	-.12	--		
7.CA	9.9	2.6	-.15	-.19	-.10	.21*	.29**	.18	--	
8.FA	14.4	3.0	.03	.06	.42**	-.39**	-.26*	.42**	.27**	--

Note: SIS = Stroke Impact Scale, SIS.C = Stroke Impact Scale Cognitive Subscale, MPFI = Multidimensional Psychological Flexibility Inventory, HH = Helplessness-Hopelessness, AP = Anxious Preoccupation, FS = Fighting Spirit, CA = Cognitive Avoidance, FA = Fatalism
*p<.05; **p<.01

The Relationship Between Stroke Severity, Psychological Flexibility and Adjustment

To examine the predictive relationship between physical/ cognitive stroke severity, psychological flexibility and adjustment (hypothesis 1 & 2), and to explore the potential moderating role of psychological flexibility on the relationship between stroke severity and adjustment (hypothesis 3), ten moderation models were created (see Table 5; see Table 6).

Helplessness-Hopelessness

A model predicting helplessness-hopelessness from physical stroke severity and psychological flexibility, with ethnicity as a covariate, explained 57.0% of the variance in helplessness-hopelessness, F (4, 89) = 29.54, p <.001. Physical stroke severity and psychological flexibility explained significant variance in helplessness-hopelessness scores respectively, however their interaction term was non-significant, F (1, 89) = .14, p = .714, ΔR^2 = .001.

A model predicting helplessness-hopelessness from cognitive stroke severity and psychological flexibility, with ethnicity as a covariate, explained 54.0% of the variance, F (4, 89) = 26.10, p < .001. Psychological flexibility was a significant predictor; cognitive stroke severity was not. Their interaction was non-significant, F (1, 89) = .20, p = .652, ΔR^2 = .001.

Anxious Preoccupation

A model predicting anxious preoccupation from physical stroke severity and psychological flexibility, with age and time since stroke as covariates, explained 50.8% of the variance in anxious preoccupation scores, F (5, 89) = 18.35, p <.001. Both physical severity and psychological flexibility were significant predictors; their interaction was non-significant, F (1, 89) = .24, p = .626, ΔR2 = .001.

A model predicting anxious preoccupation from cognitive stroke severity and psychological flexibility, with age and time since stroke as covariates, explained 50.4% of the variance, F (5, 89) = 18.06, p < .001. Initially, both psychological flexibility and cognitive stroke severity were significant predictors, however cognitive severity was no longer significant after controlling for multiple testing. Whilst their interaction was initially significant, explaining 2.2% of variance, F (1, 89) = 3.95, p = .050, correction for multiple testing resulted in a non-significant interaction.

Fighting Spirit

A model predicting fighting spirit from physical stroke severity and psychological flexibility explained 26.6% of the variance in fighting spirit, F (3, 91) = 10.98, p <.001. Both independent variables were significant predictors, however their interaction was non-significant (F (1, 91) = .65, p = .423, ΔR2 = .005).

A model predicting fighting spirit from cognitive stroke severity and psychological flexibility explained 19.4% of the variance, F (3, 91) = 7.32, p < .001. Psychological flexibility was a significant predictor, whereas cognitive stroke severity was not. Their interaction was non-significant, F (1, 91) = 0.25, p = .619, ΔR^2 = .002.

Cognitive Avoidance

A model predicting cognitive avoidance from physical stroke severity and psychological flexibility, with gender as a covariate, explained 19.0% of the variance, F (4, 90) = 5.28, p = .001. Neither physical severity nor psychological flexibility was a significant predictor. Whilst initially significant, the interaction term (F (1, 90) = 5.01, p = .028, ΔR^2 = .045) was non-significant following correction for multiple testing.

A model predicting cognitive avoidance from cognitive stroke severity and psychological flexibility, with gender as a covariate, explained 14.3% of the variance, F (4, 90) = 3.75, p = .007. Neither cognitive severity, psychological flexibility nor their interaction was significant, F (1, 90) = 0.31, p = .577, ΔR^2 = .003.

Fatalism

A model predicting fatalism from physical stroke severity and psychological flexibility explained 19.3% of the variance, F (3, 91) = 7.23, p < .001. Psychological flexibility was a significant predictor, whereas physical stroke severity was not. Their interaction was non-significant, F (1, 91) = 1.01, p = .319, ΔR^2 = .009.

A model predicting fatalism from cognitive stroke severity and psychological flexibility explained 18.9% of the variance, F (3, 91) = 7.06, p < .001. Psychological flexibility was a significant predictor, whereas cognitive stroke severity was not. Their interaction was non-significant, F (1, 91) = 0.57, p = .454, ΔR^2 = .005.

Table 5

Moderation Models for Physical Stroke Severity, Psychological Flexibility and Adjustment

Variable	R^2	B	95% CI		*SE*
			LL	UL	
Helplessness-Hopelessness					
Constant	.57	15.13***	14.30	15.97	.42
SIS		-.06**	-.10	-.02	.02
MPFI		-3.90***	-4.83	-2.97	.47
SIS x MPFI		.01	-.04	.05	.02
Ethnicity		3.25**	1.38	5.13	.95
Anxious Preoccupation					
Constant	.51	27.60***	23.94	31.25	1.84
SIS		-.07**	-.11	-.02	.02
MPFI		-3.09***	-4.04	-2.15	.48
SIS x MPFI		-.01	-.06	.03	.02
Age		-.11**	-.18	-.04	.04
Time Since		-.03**	-.05	-.01	.01
Fighting Spirit					
Constant	.27	12.19***	11.83	12.54	.18
SIS		-.03**	-.05	-.01	.01
MPFI		.99***	.59	1.39	.20
SIS x MPFI		-.01	-.03	.01	.01
Cognitive Avoidance					
Constant	.19	6.64***	4.70	8.57	.97
SIS		-.02	-.05	.00	.01
MPFI		-.25	-.82	.31	.28
SIS x MPFI		-.03* †	-.06	-.00	.01
Gender		1.95**	.86	3.03	.55
Fatalism					
Constant	.19	14.51***	13.93	15.08	.289
SIS		-.01	-.04	.02	.02
MPFI		1.38***	.74	2.02	.32
SIS x MPFI		-.02	-.05	.02	.02

Note: SIS = Physical Stroke Severity; MPFI = Psychological Flexibility; LL = Lower Level, UL = Upper Level
*p<.05; **p<.01; ***p<.001; † = no longer significant after Bonferroni-Holm correction

Table 6

Moderation Models for Cognitive Stroke Severity, Psychological Flexibility and Adjustment

Variables	R^2	B	95% CI		*SE*
			LL	UL	
Helplessness-Hopelessness					
Constant	.54	15.22***	14.35	16.10	.44
SIS.C		-.03	-.07	.01	.02
MPFI		-4.06***	-5.10	-3.07	.50
SIS.C x MPFI		-.01	-.04	.03	.02
Ethnicity		3.10**	1.12	5.08	1.00
Anxious Preoccupation					
Constant	.50	26.68***	23.06	30.29	1.82
SIS.C		-.05* †	-.09	.00	.02
MPFI		-3.22***	-4.19	-2.25	.49
SIS.C x MPFI		-.03* †	-.07	.00	.02
Age		-.08*	-.15	-.01	.04
Time Since		-.04**	-.06	-.02	.01
Fighting Spirit					
Constant	.19	12.14***	11.76	12.51	.19
SIS.C		-.02	-.03	.00	.01
MPFI		1.01***	.58	1.43	.22
SIS.C x MPFI		.00	-.01	.02	.01
Cognitive Avoidance					
Constant	.14	6.67***	4.65	8.70	1.02
SIS.C		-.01	-.04	.01	.01
MPFI		-.15	-.74	.45	.30
SIS.C x MPFI		-.01	-.03	.01	.01
Gender		1.87**	.73	3.01	.57
Fatalism					
Constant	.19	14.39***	13.81	14.97	.29
SIS.C		-.01	-.04	.02	.01
MPFI		1.51***	.85	2.17	.33
SIS.C x MPFI		.01	-.01	.03	.01

Note: SIS.C = Physical Stroke Severity; MPFI = Psychological Flexibility; LL = Lower Level, UL = Upper Level

*p<.05; **p<.01; ***p<.001; † = no longer significant after Bonferroni-Holm correction

The Association Between Adjustment and Mood

To explore the association between adjustment and depression (hypothesis 4a) and adjustment and anxiety (hypothesis 4b), Pearson's correlations were conducted (see Table 7). Depression and anxiety both significantly correlated with helplessness-hopelessness, anxious preoccupation and fatalism, but not fighting spirit or cognitive avoidance.

Table 7

Pearson's Correlations between Adjustment, Depression and Anxiety and Descriptive Statistics

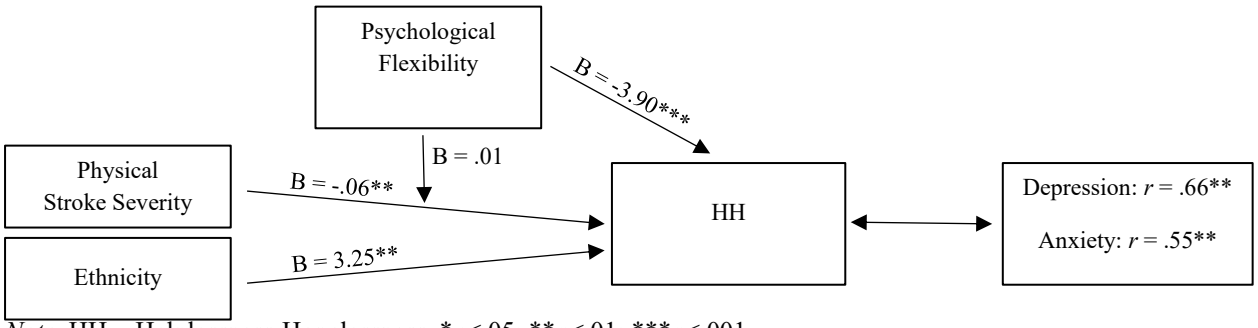
	M	*SD*	Anxiety	HH	AP	FS	CA	FA
Depression	1.9	1.8	.60**	.66**	.57**	-.11	.02	-.39**
Anxiety	1.9	1.8	--	.55**	.59**	-.00	.17	-.27**

Note: HH = Helplessness-Hopelessness, AP = Anxious Preoccupation, FS = Fighting Spirit, CA = Cognitive Avoidance, FA = Fatalism
*p<.05; **p<.01

Figure 3 provides a visual summary of the relationship between physical stroke severity, helplessness-hopelessness, and psychological flexibility, with ethnicity as a covariate, alongside correlations between helplessness-hopelessness and both depression and anxiety. Visual summaries for the remaining moderation and correlation relationships are provided in appendix Q (See Appendix Q1-9). Covariates are shown in figures where retained after preliminary analyses.

Figure 3

The Relationships Between Physical Stroke Severity, Helplessness-Hopelessness, Flexibility, and Mood



Note. HH = Helplessness-Hopelessness, *p<.05; **p<.01; ***p<.001

Discussion

The current study explored whether stroke severity or psychological flexibility were significant predictors of adjustment, as well as the moderating role of psychological flexibility and the relationship between adjustment and mood. Consistent with hypothesis 1a, greater physical stroke severity predicted higher helplessness-hopelessness and anxious preoccupation. However, contrary to expectations, it further predicted increased fighting spirit and was not related to indicators of cognitive avoidance or fatalism. This suggests that whilst greater physical disability predicts a more negative outlook, overwhelm, stroke-related preoccupations, and increased determined optimism, it may not strongly relate to increased avoidance-based coping or decreased gratitude and life value. Thus, hypothesis 1a is partially supported.

These findings align with research highlighting the positive association between improved physical functioning and factors considered relevant to post-stoke adjustment (Pucciarelli et al., 2017) including better physical, psychological, social and environmental quality of life (Sarre et al., 2014). This is also consistent with prior qualitative research emphasizing physical deficits as impacting survivors' sense of autonomy and competence,

reinforcing dependency and exacerbating emotional distress (Ellis-Hill et al., 2000; Ellis-Hill et al., 2009; Hole et al., 2014; Hughes & Cummings, 2020). Interestingly, the unexpected relationship between greater physical impairment and higher fighting spirit may reflect adaptive coping mechanism use in response to severe impairment. This aligns with psychological resilience theories endorsing positive perspectives, cognitive reappraisal and meaning-making strategies as adaptive in nature, promoting well-being in the face of self-challenging experiences (Bonanno, 2008). The Conservation of Resources Theory (Hobfoll, 1989) similarly suggests that individuals experiencing substantial resource loss, such as that of physical function and independence, are more likely to engage in protective coping strategies like fighting spirit to preserve remaining resources.

In contrast, cognitive stroke severity did not significantly predict components of adjustment and therefore hypothesis 1b was not supported. This contradicts previous findings associating cognitive impairment with disrupted social and professional reintegration, reduced independence, and poorer functional and mood outcomes (Jokinen et al., 2015; Kapoor et al., 2017; Samuelsson et al., 2021), all of which are thought to influence adjustment (Anderson & Whitfield, 2013; Arntzen et al., 2015; Sarre et al., 2014). However, this may account for the control of psychological flexibility within the tested models and may therefore capture overlap between the concepts of psychological flexibility and adjustment when measured using coping-strategy type.

The observed relationship between indicators of adjustment and physical but not cognitive severity may also reflect the differential impact on the facilitation of reintegration. For example, a recent review identified physical stroke severity as a consistent predictor of both the frequency of and ability to engage in reintegration across multiple domains, including family, community, previous activities and social roles (Wynja et al., 2024). Our findings may also capture differences in ‘the burden of burden’, whereby individuals with

physical impairments may rely more on others and therefore may withdraw from activities and limit interactions to reduce their self-perceived impact on others (Walsh et al., 2014). With this said, it is important to recognize that the specific cognitive attributes measured (e.g., memory, concentration) may not reflect those that most severely impact participation (e.g., language, neglect and visuospatial skills; Stolwyk et al., 2021; Viscogliosi et al., 2011) and may thus account for the lack of prediction. Nonetheless, our findings may reflect more substantial restrictions in engagement resulting from physical stroke severity which may, in turn, impact perceived adjustment.

Alternatively, these contrasting findings may, in part, reflect sociocultural perceptions of disability and their influence on adjustment. Survivors with persistent physical impairments have reported heightened self-consciousness about how others perceive their disability, particularly in the context of Western social norms that emphasize controlled movement and the concealment of impairments (Ellis-Hill et al., 2000). While individuals with cognitive deficits also adopt compensatory strategies to appear functionally 'normal' in the community (Tang et al., 2020), such impairments are often described as invisible disabilities (Balasooriya-Smeekens et al., 2016) as their effects are less visibly apparent than those of physical impairments. More pronounced physical deficits may therefore result in greater social reinforcement of impairment-related distress, amplifying pessimism, emotional overwhelm, reduced optimism, and preoccupation with stroke-related limitations. However, while the measure used to assess cognitive stroke severity has accurately reflected performance on formal neuropsychological assessments (Nakling et al., 2017), its low sensitivity and specificity may fail to capture milder impairments. Consequently, distinctions between minimal, mild, and severe cognitive deficits may not have been captured.

Regarding hypothesis 2, higher psychological flexibility predicted better adjustment for all facets except the indicator of cognitive avoidance, thus this hypothesis was partially

supported. More specifically, increased psychological flexibility appeared to relate to a reduction in overwhelm and anxious preoccupation with stroke, and a more positive outlook, gratitude and the appreciation of life value. Notably, this prediction was consistent regardless of stroke severity, suggesting that psychological flexibility contributes to better adjustment independently of impairment level. This underscores the potential utility of interventions aimed at increasing psychological flexibility, such as ACT (Hayes et al., 1999; Hayes et al., 2011), in the facilitation of adjustment across the stroke population, supporting recent literary findings (Large et al., 2019; Majumdar & Morris, 2018; Patchwood et al., 2024; Sathananthan et al., 2022). However, the lack of prediction for cognitive avoidance is surprising given psychological flexibility's inherent role in fostering willingness and defusion when coping with challenges (Hayes et al., 2006). Notably, this may reflect evidence that cognitive avoidance can be contextually adaptive for some survivors (Dewilde et al., 2019), even when their psychological flexibility is high overall.

Psychological flexibility did not moderate the relationships between either physical or cognitive stroke severity and the indicators of adjustment, thus, hypothesis 3 was not supported. This suggests that psychological flexibility does not moderate the relationship between stroke severity and adjustment, contrasting with findings whereby increased psychological flexibility through ACT-based interventions improved adjustment to stroke limitations (Large et al., 2019; Ooi & Steverson, 2021). This may reflect the capture of a distinction between innate psychological flexibility and deliberate, skill-based flexibility on the ability to cope and thus adjust more effectively. Relevantly, in the design of the MPFI, the authors explicitly recognized the capture of trait-flexibility but emphasized the focus on capturing state-flexibility (Rolffs et al., 2016). Nonetheless, the measure for psychological flexibility may have differentially captured individuals who naturally exhibit high flexibility rather than those who have actively cultivated it as a coping strategy. As a result, the effects

observed in this study may not reflect those seen in empirical intervention findings, where psychological flexibility is explicitly taught and reinforced.

Interestingly, age, time since stroke, gender and ethnicity all represented significant predictors of specific types of adjustment when controlling for stroke severity and psychological flexibility. Indeed, gender represented the only significant predictor of cognitive avoidance-based coping. Whilst proposing the unique role of demographic factors in shaping post-stroke adjustment, these findings also underscore the importance of a holistic, individually tailored rehabilitation approach. However, discrepancies in group sizes require cautious interpretations of these findings as applicable to the wider population.

Higher depression and anxiety were associated with greater helplessness-hopelessness and anxious preoccupation and lower fatalism but was unrelated to indicators of fighting spirit or cognitive avoidance, thus hypothesis 4a and ab were partially supported. This suggests that feeling overwhelmed, pessimistic, and fearful relates to worse mood, while gratitude, spirituality, and valuing life relate to better mood. These findings align with those identifying maladaptive psychological factors (e.g., passive coping, pessimism) as associating with and predicting mood difficulties for stroke survivors (de Graaf et al., 2022) and the implication of spirituality as a buffer against poor mood (Bolgeo et al., 2021). These results further complement the SCoTS model, whereby adjustment-related distress is recognized as potentially contributing to the onset and maintenance of mood disorders (Taylor et al., 2011), although they do not imply relationship direction. The lack of association between poorer mood and cognitive avoidance may reflect individual differences in how denial coping affects well-being (Dewilde et al., 2019); intentional avoidance may worsen mood for some but buffer against distress for others. Overall, these findings suggest that while mood relates to some indicators of adjustment, the relationship is complex and may be shaped by individual and sociocultural factors.

Strengths and Limitations

While this study provides some insight into the clinical management of post-stroke adjustment, the use of a cross-sectional design inhibits conclusions of causality. Furthermore, whilst the use of an online survey increased the ecological validity of the findings by supporting the inclusion of individuals from different countries, the majority of those who completed the survey were White and living in the Western world. Consequently, whilst enabling a broader scope of demographic and geographical attainment, these findings are still restricted in generalizability.

Similarly, the use of a collection method requiring access to technology may have served to unintentionally exclude those without the means or knowledge required to complete an online survey, or those with more severe disabilities. However, the informed guidance provided through PPI consultation resulted in the use of shorter measures to reduce completion burden, and the improved readability and accessibility of the study to account for visual impairment and limited technological literacy. These modifications may have therefore increased the final sample size achieved by enabling completion by a broader range of survivors.

Beyond this, whilst the use of self-report measures is enabling in some ways, these findings ultimately rely on subjective perceptions of disability. This is particularly relevant given the recognition of a ‘disability paradox’ whereby individual attributes and psychological outlook can contribute to inconsistencies between self-reported health and physical disability (Mavaddat et al., 2021). Additionally, the participation of those with more severe cognitive impairments may have been limited by this data collection method, as well as the length of the battery regardless of the mitigating factors put in place to support completion (e.g., the option to save and return). Likewise, the level of cognitive impairment may have influenced the self-perception of said impairment, thereby influencing self-report

measures; although the applied measure has shown to reflect cognitive performance as consistent with formal measures (Nakling et al., 2017).

The use of some measures not validated in stroke in the assessment of adjustment and psychological flexibility represent a limitation. Indeed comparatively, cancer and its associated symptoms can be recognised as progressive in nature (Koo et al., 2020) whilst stroke-related deficits generally appear initially as most significant (Hillis & Tippett, 2014). Notably however, both conditions require individuals to psychologically adjust to a serious health condition, its multifactorial impact across one's life, and the potential for chronic disability (Brandão et al., 2017; Feigin et al., 2021). Moreover, at present, no stroke-specific measure comprehensively captures the multi-component nature of psychological adjustment; the Mini-MAC enabled a component-based examination of distinct coping strategies, offering greater insight into the specific psychological processes that may support or hinder adjustment whilst navigating concerns about survey length. Additionally, given the interest of this study in both the relevance of psychological flexibility on adjustment and the relationship between adjustment and mood outcomes, it was relevant that the measures used to explore these interactions were conceptually distinct. Likewise, by facilitating the exploration of specific coping strategies indicated as relating to adjustment, our findings may better reflect the underlying mechanisms of adjustment impacted in stroke survivors.

Some items contained within the MAC and MPFI contained complex language that may not have been accessible to all stroke survivors. Furthermore, the inability to form a global score as part of the Mini-MAC (Watson et al., 1994) restricted the more generalisable analysis of adjustment within this study. Importantly, two of the five subscales (fatalism and fighting spirit) representing adjustment demonstrated questionable to poor internal consistency. With this said, the reliability for fatalism within this study ($\alpha = .66$) closely matched that achieved by the author within the original instrument validation study (Watson

et al., 1994; α = .62), although it is recognized this was completed with a different population. Moreover, the internal consistency of fighting spirit within this study is notably lower than that achieved within the validation study (α = .38; α = .76, respectively), however this mirrors findings within validated populations (Cayrou et al., 2003; Grassi et al., 2005; Johansson et al., 2011). Upon review of the subscale, the deletion of items would not have improved internal reliability. Whilst retained for analysis, this low internal reliability may have negatively influenced the statistical power of related findings and thus, interpretations are made with caution.

Clinical Implications and Future Directions

The findings of the current study suggest that increasing the psychological flexibility of survivors may support post-stroke adjustment, regardless of physical or cognitive stroke severity. Interventions that work to enhance psychological flexibility, such as ACT, could facilitate adjustment by supporting survivors in the regulation of distress, to reframe experiences and engage more in valued life experiences. Notably however, the lack of a moderation effect across all adjustment components and both severity types suggests that improving psychological flexibility does not protect against the impact of stroke severity on adjustment. Nonetheless, inconsistent predictions between psychological flexibility and the components of adjustment underscore the relevance of further exploring psychological flexibility by its distinct processes.

Exploring longitudinal changes in the association between stroke severity and adjustment with a more representative sample or causal design could enhance generalizability and clarify the role of psychological flexibility in post-stroke adjustment. Given the impact of stroke severity on self-identity and adjustment (Sarre et al., 2014), examining between-group differences may be beneficial. Actively recruiting individuals across disability levels could refine the link between severity and adjustment, strengthening clinical relevance. Similarly,

clinician-completed measures may enhance robustness whilst broadening survivor participation, further improving generalizability.

Furthermore, this study highlights the differential influence of age, gender, and ethnicity on adjustment, and thus the relevance of an integrated intersectional perspective when supporting survivors who are struggling with adapting and adjusting to the reality of life post-stroke. Clinically, this emphasizes the need to comprehensively assess individuals within both the demographic and broader sociocultural contexts of their life, however small between-group sample sizes further limit the generalizability of these findings. Within research, this endorses the capture, analysis and report of associated variables within the exploration of post-stroke adjustment (Ottaway et al., 2024). Notably, this study did not account for key factors known to influence post-stroke adjustment, including cultural, interpersonal (e.g., social support) and structural resources (e.g., healthcare access, employment; Sarre et al., 2014). Future research should therefore further investigate how intersectional factors relate to adjustment, particularly in relation to the role of psychological flexibility and adjustment across diverse populations. This would help refine targeted, culturally responsive interventions that account for varying demographic factors, and may therefore better support stroke survivors in navigating the post-stroke adjustment process.

Finally, recent research on post-stroke adjustment has used varied measures assessing different aspects of psychological adjustment (e.g., wellbeing, depression, anxiety, psychological distress; Ooi & Steverson, 2023; Patchwood et al., 2024), complicating direct comparisons. Moreover, varying internal reliability and the inclusion of items relating to religious beliefs within the Mini-MAC (Watson et al., 1994) and MASS (Lewis et al., 2001) may introduce bias by not being relevant to all individuals. Thus, developing a standardized, stroke-specific measure of adjustment would improve consistency and meaningful comparison across studies.

Conclusion

This study identified that physical stroke severity appears significantly associated with some indicators of post-stroke adjustment, whilst cognitive stroke severity does not. This indicates the importance of physiological consequences on stroke survivors' ability to adjust successfully. Higher psychological flexibility was found to significantly predict better adjustment outcomes, except cognitive avoidance, regardless of physical or cognitive severity, highlighting the utility of therapeutic approaches such as Acceptance and Commitment Therapy in improving adjustment across populations of varying consequence severity. However, psychological flexibility did not moderate the relationship between stroke severity and adjustment, suggesting that whilst it is a significant independent predictor of adjustment, this interaction appears independent of stroke severity. Finally, higher levels of adjustment were widely associated with better mood outcomes. Together, these findings endorse the potential utility of tailored ACT in supporting survivors of stroke who are struggling to adjust. Further research is required to better understand the relevance of psychosocial, intersectional and clinical stroke factors on this relationship.

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Chapter 5: Critical Appraisal & Discussion

The final chapter of this thesis portfolio begins with a summary and combined synthesis of the systematic review and empirical study findings. Strengths and limitations are reviewed, followed by theoretical and clinical implications and directions for future research. The chapter concludes with reflections from the primary author.

Research Summary

Systematic Review: Exploring the Experience of Changed Self-Identity Following Stroke: A Meta-Synthesis of Qualitative Literature

The systematic review explored the processes that contribute to self-identity within the subjective accounts of stroke survivors. Five overarching themes were identified: (1) Acceptance, (2) Accessing the Known Self, (3) Reinvention, (4) Reclaiming Agency, and (5) Embracing Social Support.

The findings highlighted that for many, acceptance reflected a process crucial in enabling survivors to traverse the loss of normality and integrate change, thereby reducing distress and fostering the development of a cohesive sense of self. By encouraging flexibility, the process of acceptance functioned to negate the fracturing impact of the stroke on self-identity, endorsing the gradual release of the past to enable the recognition of a ‘new normal’. Thus, for some, this subsequently enabled alternative processes identified within this synthesis as integral to reconciliation.

The preservation of recognised characteristics enabled the access of the known self, providing a sense of stability and encouraging connection to the pre-stroke identity. In normalising the narrative of stroke, enabling competence by emphasising persisting qualities and abilities, and reconceptualising definitions of roles and how these can be accessed, felt

continuity endorsed normality. For others, the stroke experience served as a catalyst for reinvention, shifting focus to the recognition of intrinsic values, engagement with purposeful roles and seeking contribution beyond themselves. Redefinition encompassed authenticity and fulfilment by cohesively integrating the past and present selves, thereby navigating the disruption of discrepancy.

A motivated and optimistic fighting spirit captured within the rejection of disability encouraged persistence and self-belief that in turn facilitated the determination to succeed. In other ways, externally derived motivation, obtained through roles and responsibilities beyond the self, endorsed an internal accountability that functioned to drive determination. Similarly, the embrace of social support enhanced self-efficacy and facilitated self-identity reconciliation by reinforcing continuity and normality and endorsing capability through encouraged rehabilitative access and engagement.

Ultimately, a diverse narrative of distinct but intertwined processes was captured, reflecting the complexity and individualised nature of the reconciliation process. Alignment was recognised between the identified processes and those captured within the Hexaflex model of psychological flexibility (Hayes et al., 1999; 2011).

Empirical Research: Exploring Predictors of Post-Stroke Adjustment: Psychological Flexibility and Stroke Characteristics

The empirical research study explored the association between physical and cognitive stroke severity, psychological flexibility and adjustment, as well as the moderating role of psychological flexibility and the association between adjustment and mood. The findings highlight disparities between physical and cognitive stroke severity and their relationship with adjustment, whereby physical severity was found to predict some components of adjustment, whereas cognitive severity was not. With this said, poorer physical severity only

predicted helplessness-hopelessness, anxious preoccupation and fighting spirit, thus the increased use of corresponding coping strategies related to a negative outlook, overwhelm, stroke-related concerns, preoccupation and determined optimism. However, this significant association was not identified for adjustment when captured through cognitive avoidance or fatalism, and therefore, avoidance-based coping or the expression of gratitude and life value.

Increased psychological flexibility emerged as a significant predictor for better adjustment across all facets except cognitive avoidance pertaining to avoidance-based coping. Indeed, this prediction being present despite controlling for physical or cognitive stroke severity emphasises that psychological flexibility may support adjustment regardless of stroke severity. However, the lack of moderation suggests that rather than protecting against poor adjustment consequently to stroke severity, psychological flexibility independently supports better adjustment outcomes. The relevance of demographic and clinical factors to adjustment despite physical or cognitive stroke severity varied.

Finally, higher helplessness-hopelessness, anxious preoccupation, and lower fatalism associated with poorer depression and anxiety, fighting spirit and cognitive avoidance did not. Thus, whilst indicating that poorer adjustment relates to worsened mood in some ways, inconsistent findings endorse the complex relationship between these variables.

To conclude, these findings implicate the use of therapeutic approaches aimed at increasing psychological flexibility in the management of adjustment difficulties post-stroke. Moreover, inconsistent associations in the relevance of stroke severity, intersectionality and clinical factors on adjustment endorse the tailored application of therapeutic approaches within this population.

Combined Synthesis

Collectively evaluating the findings of both the systematic review and empirical study highlights corresponding findings and implications regarding the therapeutic management of poor adjustment and disturbed self-identity post-stroke. Conceptually, the findings of the review aligned with theoretical models of reconstruction and adjustment in acquired brain injury (ABI) survivors (Gracey et al., 2009; Ownsworth & Gracey, 2017; Taylor et al., 2011). Moreover, the identified processes emerged as congruent with those defined within the Hexaflex model of psychological flexibility (Hayes et al., 1999; 2011), implicating the informed application of Acceptance and Commitment Therapy (ACT; Hayes et al., 2006) in the management of disturbed self-identity and adjustment in stroke survivors. In congruence, the empirical study findings further endorse the use of therapeutic approaches aimed at increasing psychological flexibility, such as ACT, in the management of adjustment difficulties post-stroke (Ooi & Steverson, 2023). However, this also identified that increasing psychological flexibility did not positively influence indicators of adjustment by moderating the impact of stroke severity. It should however be noted that this lack of moderation may be contributed to by methodological limitations, such as the use of a measure capturing innate rather than applied flexibility, and the employment of measures for psychological flexibility and adjustment that are not validated for use with the stroke population. Nonetheless, within the scope of the wider stroke and ABI literature, these findings are consistent with positive evaluations of manualised group-based ACT aimed at improving adjustment and self-identity informed outcomes (Large et al., 2019; Majumdar & Morris, 2018; Patchwood et al., 2024; Sathananthan et al., 2022).

These findings further suggest that adjustment is shaped, in part, by an interplay of psychological, social, and demographic factors. This is confounded by the finding that what may serve a functional, protective role for some, may for others inhibit the adjustment and reconciliation processes. Consequently, what might feel dysfunctional based upon our own

experiences and assumptions, may indeed function beneficially. Thus clinically, this endorses careful consideration of the function of these behaviours within a therapeutic context, rather than the assumption of inherent detriment. For example, for some the process of 'rejecting disability' provided internal motivation to pursue recovery and overcome adversity. This was similarly emphasised within the empirical paper, where the unexpected prediction of poorer physical stroke severity on increased fighting spirit concurrently suggests survivors as 'rejecting' these consequences, harnessing the experience of disability and translating this into personal drive and determination to overcome. These nuanced differences highlight the importance of tailoring interventions, such as ACT, to support individuals in fostering a flexible, adaptive self-narrative rather than rigidly adhering to pre-stroke identities and abilities that may no longer be attainable. Finally, emphasis is also placed on the need for tailored therapeutic approaches that account for intersectional interactions, and those that are sensitive to sociocultural complexities, to better support stroke survivors in navigating identity reconstruction and adjustment.

Critical Evaluation: Strengths and Limitations

A particular strength of this portfolio is reflected within the harmonising narrative of the review and empirical papers. Whilst distinct in their exploration, the theoretical closeness of disrupted identity and adjustment enables complimentary comparisons between the two (Gracey et al., 2009; Ownsworth & Gracey, 2017). Although occurring coincidentally, the captured relevance between the processes that support self-identity reconciliation and psychological flexibility bolster the proposed benefit of increased psychological flexibility, and thus ACT, in adjustment to stroke.

Moreover, by combining qualitative and quantitative approaches, the depth and breadth of the explored concepts was enhanced, allowing for the leverage of each approach in compensating for one another's methodological weaknesses (Kelle, 2006; Grønmo, 2023).

More specifically, whilst qualitative data enables access to deeper context and insight, adding meaning and richness to numerical findings (Greenhalgh & Taylor, 1997), quantitative analyses may better enable generalisability, although this has been disputed (Guenther & Falk, 2019; Polit & Beck, 2010). In the same vein, where quantitative analyses might implicate the existence of a relationship (e.g., psychological flexibility predicting adjustment), the qualitative synthesis of survivors' experiences can enable the better understanding of *why* and *how* these relationships exist (e.g., indicating consonance between the processes that facilitate self-identity reconciliation and those relating to psychological flexibility; Grønmo, 2023).

With that said, it is important to acknowledge the inherent biases within the research contributing to the portfolio's findings, stemming from the limited diversity of the included population samples. Both the review synthesis and empirical research captured narratives and subjective reports that, for the most part, stemmed from those within Western, individualist and high-income countries (e.g., Australia, UK, USA). Unfortunately, this echoes a common shortcoming recognised within the wider stroke literature (Hosman et al., 2022; Nanavati et al., 2024; Towfighi et al., 2022). Whilst our findings still inform as to the relevance of intersectional and psychosocial factors in the processes of self-identity reconciliation and adjustment post-stroke, this ultimately limits the generalisability of the individual tenants and entire portfolio conclusions to broader, more diverse populations (Caplan & Friesen, 2017).

A further limitation of our findings reflects the inability to quantify and thus analyse a global adjustment score, thereby preventing a detailed examination of how specific processes outlined within the Hexaflex model of psychological flexibility (Hayes et al., 1999) differentially relate to post-stroke adjustment. Whilst the systematic review suggested that certain processes supporting self-identity reconciliation closely aligned with those of the Hexaflex model (e.g., values, finding purpose and role reclamation) and thus may play a

prominent role in adjustment, the empirical study could not disentangle this relationship further. This limits the ability to make precise clinical recommendations regarding which ACT components might be most beneficial for stroke survivors navigating self-identity or adjustment concerns. Models conceptualising the association between identity and adjustment within the wider ABI literature as closely interacting (Gracey et al., 2009; Ownsworth & Gracey, 2017) emphasise these findings as providing valuable insight into the specific process-based support that ACT-informed therapeutic interactions may provide, nonetheless.

Theoretical and Clinical Implications

Alongside bolstering existing findings endorsing the use of ACT for post-stroke adjustment difficulties (Majumdar & Morris, 2018; Ooi & Steverson; Sathananthan et al., 2022), these findings expand upon the directed use of these approaches. In recognising alignment between the tenants of ACT as captured within the Hexaflex model of psychological flexibility (Hayes et al., 1999) and the processes interpreted within our synthesis, our findings can, to an extent, be conceptually associated with those of the Hexaflex. As such, clinicians should consider incorporating strategies that promote aspects such as acceptance, cognitive defusion, and values-based action to facilitate adaptive adjustment and improve overall well-being for survivors navigating these difficulties. These findings also endorse the recognition of survivors as individual, and thus thoroughly exploring the function of behaviours (e.g., avoidance-coping) may elucidate the differential influence of these as functional for some, and dysfunctional for others. In doing so, this enables the informed adaptation of clinical support for stroke survivors in a way that is inclusive and utilises evidence-based practice, thereby encouraging better therapeutic outcomes (Connor et al., 2023).

Similarly, both the review and empirical findings highlight the importance of recognising and integrating survivors' psychosocial and intersectional identities within the

therapeutic context. Specifically, the role of social support and the varying relevance of age, gender and ethnicity in adjustment emphasises the need to consider individuals holistically, rather than simply as survivors of stroke. This endorses, for example, the inclusion of the wider family system within the clinical environment, recognising stroke as influential to both the survivor and those around them, mirroring findings recognising the social, emotional and financial implications of stroke for family members (Gawulayo et al., 2021). Moreover, our findings suggest this may facilitate access to and interaction with therapeutic and value-based engagement, adherence and persistence, aligning with the recognised benefits of family-centred care in stroke rehabilitation (Creasy et al., 2015; Mendrofa et al., 2025).

Indeed, as part of ensuring culturally competent and sensitive practice, it appears congruent to recognise the origins of the theory driving mindfulness-based therapies, such as ACT. More specifically, mindful practice is noted as originating within East Asian cultures, derived from Hindu philosophies and Buddhist teachings (Mehta & Talwar, 2022). Understanding and incorporating the origins of practices informing therapeutic interventions may support clinicians to recognise the existing practice of mindfulness outside of definitions provided within Western psychological frameworks (Kang & Whittingham, 2010). In doing so, appreciating these cultural origins may support the decolonisation and empowerment of the therapeutic space (Mehta & Talwar, 2022). This further recognises the clients right to make informed decisions around the implementation of techniques that may be incongruent to their belief system, or indeed the tailored application of techniques in a way that integrates and accounts for their individualised perspectives (Thompson & van Vliet, 2017).

Directions for Future Research

These findings highlight the need for further research to elucidate the mechanisms through which psychological flexibility impacts self-identity reconciliation and adjustment in the stroke population. Whilst the current findings propose the potential utility of increased

psychological flexibility in facilitating post-stroke adjustment, understanding the specific tenants of ACT may account for the inconsistent findings across predictors of adjustment within the empirical study, whilst informing the specific utility of individual Hexaflex processes. Moreover, identifying the differential interaction between components of psychological flexibility (e.g., acceptance, present-moment awareness) and adjustment outcomes would serve to deepen the theoretical foundation of adjustment within the stroke population, thereby informing targeted interventions. This would be bolstered by the conceptual mapping of processes that facilitate and inhibit self-identity reconciliation, to closely aligned theoretical models.

Relevantly, current literature on ACT for post-stroke adjustment reveals variability in the recognition and reporting of sociodemographic factors. Whilst age and sex are consistently reported, racial/ ethnic data are inconsistently addressed – ranging from no recognition (Majumdar & Morris, 2019), to minimal reference (e.g., none identified as Aboriginal and/ or Torres Strait Islander; Sathananthan et al., 2022), to more detailed reporting (e.g., White, Black, Asian; Patchwood et al., 2024). None of the studies recorded participants' cultural identity. These findings align with Ottaway et al., (2024), who identified similar variation in the reporting of protected characteristics across 18 randomised controlled trials exploring non-pharmacological post-stroke mood management. Whilst all studies reported gender/ sex and most reported age, only two noted either ethnicity or language, and none addressed sexual orientation, pre-existing disabilities or cultural background.

Notably, ethnic health inequalities are prevalent in the post-stroke population, affecting health related quality of life (Lee et al., 2025), access to stroke care (Green et al., 2019) and functional outcomes (Emmett et al., 2025). Gender and ethnic differences may also influence the amount of post-stroke therapy received (Gittins et al., 2020), and unmet needs are more pronounced post-ABI for those from ethnic minority and marginalised backgrounds

(Norman et al., 2023). Given these disparities, it seems crucial to capture, report and analyse intersectional complexities within stroke research.

Similar to the study of Patchwood et al. (2024), efforts were made to capture intersectional data in the empirical study; however, the diversity of our sample remains limited. Moreover, although these factors were included within our analyses, group differences negatively affect accurate group comparisons, and thus the reliability of our findings is impacted. Relevantly, whilst Ottaway et al. (2024) further emphasised the need to record and analyse protected characteristics relevant to stroke research, they recognised the implications of group size discrepancies on factors such as study power, and as a result the likelihood of the authors to include these within analyses.. Therefore, to ensure the informed contextualisation of psychosocially aware and culturally competent evidence-based practice, it is vital to encourage the inclusion of diverse populations in stroke research to enable statistically powerful reports of these interactions.

Author Reflections

My initial interest in stroke stemmed from personal experiences whereby a close family member experienced a stroke before the age of 50. I recall feeling shocked as this challenged my understanding of stroke as an illness of the elderly, not of an individual who I knew to be physically active and healthy. This intrigue was further peaked as a result of clinical experiences within my first placement as a trainee clinical psychologist working across Early Supported Discharge (ESD) and Community Neurorehabilitation Services (CNRS). Whilst also challenging my pre-conceived understanding of *who* stroke impacts, this was exposing as to *what* stroke impacts. I saw both within the hospital and home settings the scope of consequences imposed upon individuals diverse in sociodemographic qualities. Working across services tailored for both the acute and post-acute phases enabled me to begin understanding and appreciating the journey of ‘recovery’, how varied and multifactorial the

process of adjusting post-stroke can be, and indeed the consequences of poor adjustment for both the survivor and the wider family system. Whilst this was a powerful learning experience, it was also difficult in that the more I learned about the range and severity of consequences, and the indiscriminate nature of stroke, the more I recognised this as something that can happen to anyone, at any time.

On reflection, I believe that these experiences drove my decision to solely focus on the processes that facilitate the reconciliation of self-identity post-stroke. Rather than again surrounding myself with narratives capturing the loss and grief that I had come to learn was commonplace, this enabled me to immerse myself within stories of achievement and progress. With this said, consequently to the literature often capturing both processes that facilitate and those that inhibit, I found myself still ruminating on just how devastating the stroke experience can be. A similar experience arose from the use of social media created for the singular purpose of supporting the data collection process for the empirical paper. In most cases, to access and post in informal social media groups and share the study details, membership to these groups was required. This resulted in the 'timeline' for this account encompassing the posts of others within these groups, echoing findings that many posts on social media by stroke survivors pertain to functional abilities, depression, fear, mental health and death/ survival (Gajjar et al., 2023). At times, I found myself having to step away from both the review screening process, and active recruitment, so as to allow myself the time and space to process the often provoking narratives and appreciate the experiences of these survivors.

Moreover, I began to recognise that I was seeing myself in accounts from those that I felt kinship with. Young women describing the fast pace of their life pre-stroke, within which they prioritised career success regardless of the personal cost, resonated with me deeply. Whilst reflecting on this with peers and in thesis supervision, it was apparent that I had begun

to internalise these experiences, prompting a shift of my own values and indeed where I perceive worth to lie. This to say, whilst difficult at times, I found the deeper exploration within the narratives of stroke survivors, and the opportunity to briefly integrate myself with a community that I am for the most part unfamiliar, to be a meaningful, informative and transformative experience.

General Conclusion

The overall findings of the systematic review and empirical research inform the understanding and support of self-identity and adjustment difficulties in the stroke population. Collectively, this provides preliminary evidence for the role of psychological flexibility, and thus the clinical utility of ACT-informed approaches, in managing these difficulties for stroke survivors. Moreover, these findings offer valuable insights for clinical practice and development, endorsing contextually informed care that recognises psychosocial and intersectional factors to support the navigation of recovery and improve overall quality of life. Further research is required to enhance comprehension of the relationships between stroke severity, psychological flexibility and adjustment to strengthen the empirical findings and better inform the potential risks or protective elements associated with adjustment outcomes. Additionally, conceptually mapping the facilitators and inhibitors of self-identity reconciliation would inform the alignment with and thus application of theoretical models and clinical approaches. Together, these findings underscore the importance of an integrated, holistic approach to stroke rehabilitation, one that incorporates contextual factors and considers the utility of increased psychological flexibility to enhance self-identity reconciliation and adjustment outcomes.

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Appendices

Appendix A

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Appendix B

A Completed ENTREQ Checklist (Tong et al., 2012)

No.	Item	Guide and Description	Location item reported
1	Aim	State the research question the synthesis addresses.	Introduction
2	Synthesis methodology	Identify the synthesis methodology or theoretical framework which underpins the synthesis, and describe the rationale for choice of methodology (e.g. meta-ethnography, thematic synthesis, critical interpretive synthesis, grounded theory synthesis, realist synthesis, meta-aggregation, meta-study, framework synthesis).	Methods: Thematic Synthesis
3	Approach to searching	Indicate whether the search was pre-planned (comprehensive search strategies to seek all available studies) or iterative (to seek all available concepts until they theoretical saturation is achieved).	Methods
4	Inclusion criteria	Specify the inclusion/exclusion criteria (e.g. in terms of population, language, year limits, type of publication, study type).	Methods: Eligibility Criteria
5	Data sources	Describe the information sources used (e.g. electronic databases (MEDLINE, EMBASE, CINAHL, psycINFO, Econlit), grey literature databases (digital thesis, policy reports), relevant organisational websites, experts, information specialists, generic web searches (Google Scholar) hand searching, reference lists) and when the searches conducted; provide the rationale for using the data sources.	Methods: Search Strategy
6	Electronic search strategy	Describe the literature search (e.g. provide electronic search strategies with population terms, clinical or health topic terms, experiential or social phenomena related terms, filters for qualitative research, and search limits).	Methods: Search Strategy
7	Study screening methods	Describe the process of study screening and sifting (e.g. title, abstract and full text review, number of independent reviewers who screened studies).	Methods: Screening and Selection
8	Study characteristics	Present the characteristics of the included studies (e.g. year of publication, country, population, number of participants, data collection, methodology, analysis, research questions).	Study Characteristics: Table 2
9	Study selection results	Identify the number of studies screened and provide reasons for study exclusion (e,g, for	Results

		comprehensive searching, provide numbers of studies screened and reasons for exclusion indicated in a figure/flowchart; for iterative searching describe reasons for study exclusion and inclusion based on modifications to the research question and/or contribution to theory development).	
10	Rationale for appraisal	Describe the rationale and approach used to appraise the included studies or selected findings (e.g. assessment of conduct (validity and robustness), assessment of reporting (transparency), assessment of content and utility of the findings).	Quality Appraisal
11	Appraisal items	State the tools, frameworks and criteria used to appraise the studies or selected findings (e.g. Existing tools: CASP, QARI, COREQ, Mays and Pope [25]; reviewer developed tools; describe the domains assessed: research team, study design, data analysis and interpretations, reporting).	Methods
12	Appraisal process	Indicate whether the appraisal was conducted independently by more than one reviewer and if consensus was required.	Methods
13	Appraisal results	Present results of the quality assessment and indicate which articles, if any, were weighted/excluded based on the assessment and give the rationale.	Methods & Appendix E
14	Data extraction	Indicate which sections of the primary studies were analysed and how were the data extracted from the primary studies? (e.g. all text under the headings “results /conclusions” were extracted electronically and entered into a computer software).	Methods: Thematic Synthesis
15	Software	State the computer software used, if any.	Methods: Thematic Synthesis
16	Number of reviewers	Identify who was involved in coding and analysis.	Methods
17	Coding	Describe the process for coding of data (e.g. line by line coding to search for concepts).	Methods: Thematic Synthesis
18	Study comparison	Describe how were comparisons made within and across studies (e.g. subsequent studies were coded into pre-existing concepts, and new concepts were created when deemed necessary).	Methods: Thematic Synthesis
19	Derivation of themes	Explain whether the process of deriving the themes or constructs was inductive or deductive.	Methods: Thematic Synthesis

20	Quotations	Provide quotations from the primary studies to illustrate themes/constructs, and identify whether the quotations were participant quotations of the author's interpretation.	Results
21	Synthesis output	Present rich, compelling and useful results that go beyond a summary of the primary studies (e.g. new interpretation, models of evidence, conceptual models, analytical framework, development of a new theory or construct).	Results

Appendix C

A Completed PRISMA Checklist (Page et al., 2021)

Section and Topic	Item #	Checklist item	Reported on page #
TITLE			
Title	1	Identify the report as a systematic review.	-
ABSTRACT			
Abstract	2	See the PRISMA 2020 for Abstracts checklist.	15
INTRODUCTION			
Rationale	3	Describe the rationale for the review in the context of existing knowledge.	16-18
Objectives	4	Provide an explicit statement of the objective(s) or question(s) the review addresses.	18
METHODS			
Eligibility criteria	5	Specify the inclusion and exclusion criteria for the review and how studies were grouped for the syntheses.	19
Information sources	6	Specify all databases, registers, websites, organisations, reference lists and other sources searched or consulted to identify studies. Specify the date when each source was last searched or consulted.	20
Search strategy	7	Present the full search strategies for all databases, registers and websites, including any filters and limits used.	152-153 Appendix D
Selection process	8	Specify the methods used to decide whether a study met the inclusion criteria of the review, including how many reviewers screened each record and each report retrieved, whether they worked independently, and if applicable, details of automation tools used in the process.	20
Data collection process	9	Specify the methods used to collect data from reports, including how many reviewers collected data from each report, whether they worked independently, any processes for obtaining or confirming data from study investigators, and if applicable, details of automation tools used in the process.	22
Data items	10a	List and define all outcomes for which data were sought. Specify whether all results that were compatible with each outcome domain in	24

		each study were sought (e.g. for all measures, time points, analyses), and if not, the methods used to decide which results to collect.	
	10b	List and define all other variables for which data were sought (e.g. participant and intervention characteristics, funding sources). Describe any assumptions made about any missing or unclear information.	24
Study risk of bias assessment	11	Specify the methods used to assess risk of bias in the included studies, including details of the tool(s) used, how many reviewers assessed each study and whether they worked independently, and if applicable, details of automation tools used in the process.	-
Effect measures	12	Specify for each outcome the effect measure(s) (e.g. risk ratio, mean difference) used in the synthesis or presentation of results.	-
Synthesis methods	13a	Describe the processes used to decide which studies were eligible for each synthesis (e.g. tabulating the study intervention characteristics and comparing against the planned groups for each synthesis (item #5)).	24-25
	13b	Describe any methods required to prepare the data for presentation or synthesis, such as handling of missing summary statistics, or data conversions.	-
	13c	Describe any methods used to tabulate or visually display results of individual studies and syntheses.	21
	13d	Describe any methods used to synthesize results and provide a rationale for the choice(s). If meta-analysis was performed, describe the model(s), method(s) to identify the presence and extent of statistical heterogeneity, and software package(s) used.	23-25
	13e	Describe any methods used to explore possible causes of heterogeneity among study results (e.g. subgroup analysis, meta-regression).	-
	13f	Describe any sensitivity analyses conducted to assess robustness of the synthesized results.	-
Reporting bias assessment	14	Describe any methods used to assess risk of bias due to missing results in a synthesis (arising from reporting biases).	-

Certainty assessment	15	Describe any methods used to assess certainty (or confidence) in the body of evidence for an outcome.	20-22
RESULTS			
Study selection	16a	Describe the results of the search and selection process, from the number of records identified in the search to the number of studies included in the review, ideally using a flow diagram.	26-27
	16b	Cite studies that might appear to meet the inclusion criteria, but which were excluded, and explain why they were excluded.	-
Study characteristics	17	Cite each included study and present its characteristics.	28-32
Risk of bias in studies	18	Present assessments of risk of bias for each included study.	-
Results of individual studies	19	For all outcomes, present, for each study: (a) summary statistics for each group (where appropriate) and (b) an effect estimate and its precision (e.g. confidence/credible interval), ideally using structured tables or plots.	-
Results of syntheses	20a	For each synthesis, briefly summarise the characteristics and risk of bias among contributing studies.	33-44
	20b	Present results of all statistical syntheses conducted. If meta-analysis was done, present for each the summary estimate and its precision (e.g. confidence/credible interval) and measures of statistical heterogeneity. If comparing groups, describe the direction of the effect.	-
	20c	Present results of all investigations of possible causes of heterogeneity among study results.	-
	20d	Present results of all sensitivity analyses conducted to assess the robustness of the synthesized results.	-
Reporting biases	21	Present assessments of risk of bias due to missing results (arising from reporting biases) for each synthesis assessed.	-
Certainty of evidence	22	Present assessments of certainty (or confidence) in the body of evidence for each outcome assessed.	-
DISCUSSION			

Discussion	23a	Provide a general interpretation of the results in the context of other evidence.	44-47
	23b	Discuss any limitations of the evidence included in the review.	48-49
	23c	Discuss any limitations of the review processes used.	48
	23d	Discuss implications of the results for practice, policy, and future research.	49-51
OTHER INFORMATION			
Registration and protocol	24a	Provide registration information for the review, including register name and registration number, or state that the review was not registered.	18
	24b	Indicate where the review protocol can be accessed, or state that a protocol was not prepared.	19
	24c	Describe and explain any amendments to information provided at registration or in the protocol.	-
Support	25	Describe sources of financial or non-financial support for the review, and the role of the funders or sponsors in the review.	-
Competing interests	26	Declare any competing interests of review authors.	50
Availability of data, code and other materials	27	Report which of the following are publicly available and where they can be found: template data collection forms; data extracted from included studies; data used for all analyses; analytic code; any other materials used in the review.	-

Appendix D

Systematic Review Search Strategies for Individual Databases

MEDLINE Ultimate:
S1. (MH "Stroke+") or "Acquired brain injur*" OR Stroke OR Cerebrovascular or "lacunar infarct" or "cerebral infarct" or "subarachnoid haemorrhage" or "subarachnoid hemorrhage" or "cerebral haemorrhage" or "cerebral hemorrhage"

S2. (MH "Identity Crisis") OR (MH "Self Concept") or identit* OR self OR selves OR "self-esteem" OR personhood* or "personality chang*" OR "self-concept*" OR "self-discrepanc*" OR "self-perception*" OR "self-evaluation*" OR "self-congruenc*"

S3. (MH "Qualitative Research+") or Qualitative OR Theme* OR Interview* OR Narrative* OR "Thematic analys*" OR Interpretative OR "phenomenological analys*" OR "Narrative analys*" OR "Content analys*" OR "Discourse analys*" OR "Grounded theory" OR Phenomenolog*

S4. S1 AND S2 AND S3

CINAHL Ultimate:
S1. (MH "Stroke+") or "Acquired brain injur*" OR Stroke OR Cerebrovascular or "lacunar infarct" or "cerebral infarct" or "subarachnoid haemorrhage" or "subarachnoid hemorrhage" or "cerebral haemorrhage" or "cerebral hemorrhage"

S2. (MH "Identity Crisis") OR (MH "Self Concept") or identit* OR self OR selves OR "self-esteem" OR personhood* or "personality chang*" OR "self-concept*" OR "self-discrepanc*" OR "self-perception*" OR "self-evaluation*" OR "self-congruenc*"

S3. (MH "Qualitative Studies+") or Qualitative OR Theme* OR Interview* OR Narrative* OR "Thematic analys*" OR Interpretative OR "phenomenological analys*" OR "Narrative analys*" OR "Content analys*" OR "Discourse analys*" OR "Grounded theory" OR Phenomenolog*

S4. S1 AND S2 AND S3

APA PsycINFO:

S1. DE "Cerebrovascular Disorders" or "Acquired brain injur*" OR Stroke OR Cerebrovascular or "lacunar infarct" or "cerebral infarct" or "subarachnoid haemorrhage" or "subarachnoid hemorrhage" or "cerebral haemorrhage" or "cerebral hemorrhage"

S2. DE "Self-Concept" OR DE "Identity Crisis" or identit* OR self OR selves OR "self-esteem" OR personhood* or "personality chang*" OR "self-concept*" OR "self-discrepanc*" OR "self-perception*" OR "self-evaluation*" OR "self-congruenc*"

S3. DE "Qualitative Methods" OR DE "Focus Group" OR DE "Grounded Theory" OR DE "Interpretative Phenomenological Analysis" OR DE "Narrative Analysis" OR DE "Semi-Structured Interview" OR DE "Thematic Analysis" or Qualitative OR Theme* OR Interview* OR Narrative* OR "Thematic analys*" OR Interpretative OR "phenomenological analys*" OR "Narrative analys*" OR "Content analys*" OR "Discourse analys*" OR "Grounded theory" OR Phenomenolog*

S4. S1 AND S2 AND S3

Web of Science:

S1. ALL=("Acquired brain injur*" OR Stroke OR Cerebrovascular or "lacunar infarct" or "cerebral infarct" or "subarachnoid hemorrhage" or "subarachnoid haemorrhage" or "cerebral hemorrhage" or "cerebral haemorrhage")

S2. ALL=(identit* OR self OR selves OR "self-esteem" OR personhood* or "personality chang*" OR "self-concept*" OR "self-discrepanc*" OR "self-perception*" OR "self-evaluation*" OR "self-congruenc*")

S3. ALL=(Qualitative OR Theme* OR Interview* OR Narrative* OR "Thematic analys*" OR Interpretative OR "phenomenological analys*" OR "Narrative analys*" OR "Content analys*" OR "Discourse analys*" OR "Grounded theory" OR Phenomenolog*)

S4. S1 AND S2 AND S3

Appendix E

Quality Rating by Study for the Systematic Review

Study	Question									
	1*	2*	3	4	5	6	7	8	9	10
Anderson & Whitfield 2013	-	-								
Arntzen et al. 2015	-	-								
Becker et al. 2022	-	-								
Brunborg et al. 2014	-	-								
Clarke & Black 2005	-	-								
Cregan et al. 2022	-	-								
Erikson et al. 2016	-	-								
Eriksson & Tham 2010	-	-								
Faccio et al. 2023	-	-								
Fraas & Calvert 2009	-	-								
Glintborg 2015	-	-								
Hawkins et al. 2017	-	-								
Hutton & Ownsworth 2019	-	-								
Kouwenhoven et al. 2011	-	-								
Kuluski et al. 2014	-	-								
Lo et al. 2021	-	-								
Pedersen et al. 2019	-	-								
Šaňáková et al. 2024	-	-								
Stagg et al. 2023	-	-								
Stone 2005	-	-								
Swart et al. 2015	-	-								
Walder et al. 2017	-	-								
Wolfenden et al. 2012	-	-								

Note. C = Can't Tell, Y = Yes, N = No, 1 = Was there a clear statement of the aims of the research?, 2 = Is a qualitative methodology appropriate?, 3 = Was the research design appropriate to address the aims of the research?, 4 = Was the recruitment strategy appropriate to the aims of the research?, 5 = Was the data collected in a way that addressed the research issue?, 6 = Has the relationship between researcher and participants been adequately considered?, 7 = Have ethical issues been taken into consideration?, 8 = Was the data analysis sufficiently rigorous?, 9 = Is there a clear statement of findings?, 10 = How valuable is the research?

* Screening Questions

Key	0	1	2	3
Yes	-			
No/ Can't Tell				

Appendix F
A Completed STROBE Statement

	Item No	Recommendation	Page No
Title and abstract	1	(*a*) Indicate the study's design with a commonly used term in the title or the abstract	70
		(*b*) Provide in the abstract an informative and balanced summary of what was done and what was found	70
Introduction			
Background/rationale	2	Explain the scientific background and rationale for the investigation being reported	71-74
Objectives	3	State specific objectives, including any prespecified hypotheses	74
Methods			
Study design	4	Present key elements of study design early in the paper	75
Setting	5	Describe the setting, locations, and relevant dates, including periods of recruitment, exposure, follow-up, and data collection	76
Participants	6	(*a*) Give the eligibility criteria, and the sources and methods of selection of participants	75
Variables	7	Clearly define all outcomes, exposures, predictors, potential confounders, and effect modifiers. Give diagnostic criteria, if applicable	76
Data sources/ measurement	8*	For each variable of interest, give sources of data and details of methods of assessment (measurement). Describe comparability of assessment methods if there is more than one group	76-80
Bias	9	Describe any efforts to address potential sources of bias	75
Study size	10	Explain how the study size was arrived at	80
Quantitative variables	11	Explain how quantitative variables were handled in the analyses. If applicable, describe which groupings were chosen and why	80-82
Statistical methods	12	(*a*) Describe all statistical methods, including those used to control for confounding	80-82
		(*b*) Describe any methods used to examine subgroups and interactions	80-82
		(*c*) Explain how missing data were addressed	80
		(*d*) If applicable, describe analytical methods taking account of sampling strategy	-
		(*e*) Describe any sensitivity analyses	-

Results			
Participants	13*	(a) Report numbers of individuals at each stage of study—eg numbers potentially eligible, examined for eligibility, confirmed eligible, included in the study, completing follow-up, and analysed	82
		(b) Give reasons for non-participation at each stage	-
		(c) Consider use of a flow diagram	-
Descriptive data	14*	(a) Give characteristics of study participants (eg demographic, clinical, social) and information on exposures and potential confounders	82-83
		(b) Indicate number of participants with missing data for each variable of interest	82
Outcome data	15*	Report numbers of outcome events or summary measures	82
Main results	16	(*a*) Give unadjusted estimates and, if applicable, confounder-adjusted estimates and their precision (eg, 95% confidence interval). Make clear which confounders were adjusted for and why they were included	84-91
		(*b*) Report category boundaries when continuous variables were categorized	-
		(*c*) If relevant, consider translating estimates of relative risk into absolute risk for a meaningful time period	-
Other analyses	17	Report other analyses done—eg analyses of subgroups and interactions, and sensitivity analyses	83-85
Discussion			
Key results	18	Summarise key results with reference to study objectives	91-95
Limitations	19	Discuss limitations of the study, taking into account sources of potential bias or imprecision. Discuss both direction and magnitude of any potential bias	96-98
Interpretation	20	Give a cautious overall interpretation of results considering objectives, limitations, multiplicity of analyses, results from similar studies, and other relevant evidence	91-98
Generalisability	21	Discuss the generalizability (external validity) of the study results	96
Other information			
Funding	22	Give the source of funding and the role of the funders for the present study and, if applicable, for the original study on which the present article is based	-

Appendix G

Study Poster

How are you managing life after a stroke?

Help us better understand how people adjust to life

We know stroke can be devastating. It can be hard to know how to manage the difficult feelings that come up. We hope that this research will support new therapies for those coming to terms with life after stroke.

Who can take part?

Stroke survivors over the age of 18 whose last stroke was over 6 months ago

What will it involve?

Filling out some anonymous online questionnaires

It may take up to 30 minutes to complete

If you have any questions or concerns, please contact the researcher Amber Cole at: Amber.cole@uea.ac.uk

For more information or to participate in this study, please follow the link: https://app.onlinesurveys.jisc.ac.uk/s/uea/exploring-predictors-of-post-stroke-adjustment
or scan the code below:

University of East Anglia

Appendix H

Participant Information Sheet

Exploring Predictors of Post-Stroke Adjustment: Psychological Flexibility and Stroke Characteristics

You are being invited to take part in a research study that aims to look at:

- Mental and physical changes
- Adjustment
- Thinking styles

To make sure that you know what this will include and what the risks may be, it is important that you read this sheet fully. Please carefully read this sheet and contact the researcher using the contact details if you have any questions.

What is the purpose of the study?

This research hopes to see how physical and mental effects of stroke influence how people cope and come to terms with what has happened to them (psychological adjustment). The research will also look at how thinking styles might affect how people cope. It is hoped this will provide information on how to help people who are struggling with their 'new normal'.

What would my participation involve?

If you agree to take part, you will be presented with 7 questionnaires. These will focus on:

- Questions about you and stroke
- Physical ability
- Thinking ability
- Your mood
- Thinking styles
- Adjustment

It may take from between 15 minutes and an hour to take part. When you submit the final questionnaire, your participation is complete.

Who can take part in this research?

We are looking for people who:

- Over 18 years old
- At least one stroke event that occurred 6 months or longer ago.
- English speaking

Unfortunately, those with the following will not be able to take part:

- Severe communication difficulties that make it hard to understand the questions, such as aphasia
- Severe cognitive difficulties that make it hard to understand the questions
- Traumatic brain injury
- Other neurological condition(s)

What are the possible risks of participation?

Taking part may impact you. Some of the questionnaires ask about physical and thinking abilities and your mood. Thinking about these things may be upsetting. You may feel tired during or after you take part. You are encouraged to take breaks during your participation, and to be aware of how you feel after. You should stop taking part if you think it is having a negative impact on you.

If you should experience any distress during or after taking part, please seek support. Below is a list of support services.

UK
Samaritans (24/7)
Telephone:116 123
Email: jo@samaritans.org
Campaign Against Living Miserably (CALM)
Telephone: 0800 58 58 58
Email: thecalmzone.net
Shout (A text messaging service)
Text SHOUT to: 85258
Stroke Helpline
Telephone: 0303 3033 100
Email: helpline@stroke.org.uk

Australia
StrokeLine
Telephone: 1800 787 653
Email: strokeline@strokefoundation.org.au
Lifeline
Telephone: **13 11 14**
Text: 0477 13 11 14

USA
Stroke Family Warmline
Telephone: 1-888-478-7653
Mental Health America Crisis Line
Telephone or text: 988
Text: MHA to 741741

What are the potential benefits of taking part?
There are no direct benefits. It is hoped that this study will help us understand the impact of stroke better. This information can be used to develop better support for stroke survivors.

What happens to my data that is collected?
By taking part, you are agreeing for your data to be used in this study. Your data will be downloaded and stored:

- On a password protected database
- On a secure device

- Viewed only by the researcher and the study supervisors to maintain confidentiality

All data will be anonymous (you won't be able to be identified). No one will know your identity. After this research is complete, your anonymised data will be stored at UEA on the university secure drive for a minimum of 10 years. Your anonymised data may be used by future researchers.

What happens if I change my mind?
Taking part in this study is voluntary (optional). You can stop taking part in the study before you submit your questionnaires. After you submit your questionnaires, you cannot withdraw. Please make sure you are happy for your data to be used for the purpose of this study before taking part.

Will I be able to find out the results of the research?
As the information collected is anonymous, we can't provide individual feedback. We will share our findings to the groups that shared our study. These groups can choose to share this information.

Will I be reimbursed for participating?
There is no reimbursement (payment) for participation.

Do I have to take part in this study?
Your participation in this study is completely voluntary.

Who do I contact if I have further questions or concerns?
If you would like to talk about:

- More information
- A concern
- A complaint

please contact the researcher using this email (**Amber.cole@uea.ac.uk**). If you would like to speak to someone unrelated to this study, you can contact the programme director Sian Coker at S.Coker@uea.ac.uk. You can also contact the study supervisors Josh Blake (Joshua.Blake@uea.ac.uk) and Jinnie Ooi (Jinnie.Ooi@uea.ac.uk).

I would like to participate, what are the next steps?
If you choose to take part, moving to the next section will take you to a consent form. This form will confirm that you have understood what it means to take part. The consent form will also make sure that you know that taking part is voluntary. Before leaving this page please make sure that you have read this sheet thoroughly. Please contact the researcher (**Amber.cole@uea.ac.uk**) if you have any questions or concerns.

Thank you for your time and your interest in this study.

Amber Cole – Trainee Clinical Psychologist
Amber.cole@uea.ac.uk

Appendix I

Participant Consent Form

Title of Project: Exploring Predictors of Post-Stroke Adjustment: Psychological Flexibility and Stroke Characteristics

Name of Researcher: Amber Cole

Providing consent for participation means:

1. I confirm that I have read the information sheet for the above study.

2. I understand that taking part is voluntary (optional) and I can stop at any time before submitting the final questionnaire. I understand that beyond this point, and after I select 'finish', I will be unable to withdraw from the study.

3. I understand that my data will be anonymous (you won't be able to be identified) and confidential (only the researcher and their supervisors will have access to this). Should the study be published, I understand that the publication will not contain any information that could be used to identify me.

4. I give permission for the anonymised data that I provide to be held in the University of East Anglia data storage for potential use in future research.

5. I understand the possible risks of taking part in this study. I understand that a questionnaire will ask questions about my thinking processes, about my physical ability and about my mood. I understand where I can access support should I find my participation distressing.

6. I have had the opportunity to consider the information, ask questions and have had these answered.

I consent to taking part in the above study [TICK BOX]

Appendix J

Demand and Fatigue Break Encouragement

We understand that completing a series of questionnaires can be mentally demanding.

We encourage you to take breaks if needed. Please feel free to pause and return to the questionnaires when you feel refreshed and ready to continue.

If you have any questions or concerns about this, please contact the researcher at:

Amber.Cole@uea.ac.uk

Appendix K

Participant Early Debrief Form

Thank you for your time and interest in participating in this research.

Unfortunately, one or more of your answers suggests that you meet one of our exclusion criteria. Because of this, you are not eligible to take part in the rest of the study. Any data relating to your participation will be deleted.

Below is a list of support services and their contact details, should you experience any negative emotions or distress following your participation.

UK

Samaritans (24/7)

Telephone:116 123

Email: jo@samaritans.org

Campaign Against Living Miserably (CALM)

Telephone: 0800 58 58 58

Email: thecalmzone.net

Shout (A text messaging service)

Text SHOUT to: 85258

Stroke Helpline

Telephone: 0303 3033 100

Email: helpline@stroke.org.uk

Australia

StrokeLine

Telephone: 1800 787 653

Email: strokeline@strokefoundation.org.au

Lifeline

Telephone: 13 11 14

Text: 0477 13 11 14

USA

Stroke Family Warmline

Telephone: 1-888-478-7653

Mental Health America Crisis Line

Telephone or text: 988

Text: MHA to 741741

You can also talk to your doctor or general practitioner to receive support.

The results of this study will be shared with the groups, charities and organisations that helped with sharing the study information.

Please feel free to contact me with any questions or concerns regarding your participation at:

Amber.Cole@uea.ac.uk

Appendix L

Participant Debrief Form

Thank you for your time and for participating in this study.

This research aims to identify how stroke factors such as cognitive and physical impairment as well as depression might influence how people view and cope with their 'new normal', and therefore potentially how treatment can be guided to help support those who struggle with adjusting post-stroke.

Specifically, this research hopes to identify how a type of therapeutic intervention, Acceptance and Commitment Therapy, might be used to encourage positive outcomes for individuals struggling with changes and adjustment after experiencing a stroke. This will be achieved by analysing factors of psychological flexibility, such as acceptance, values and contact with the present moment and the relationship this holds with stroke factors, post-stroke adjustment, and how it may influence the relationship between the two.

Below is a list of support services and their contact details, should you experience any negative emotions or distress following your participation.

UK
Samaritans (24/7)
Telephone:116 123
Email: jo@samaritans.org
Campaign Against Living Miserably (CALM)
Telephone: 0800 58 58 58
Email: thecalmzone.net
Shout (A text messaging service)
Text SHOUT to: 85258
Stroke Helpline
Telephone: 0303 3033 100
Email: helpline@stroke.org.uk

Australia
StrokeLine
Telephone: 1800 787 653
Email: strokeline@strokefoundation.org.au
Lifeline
Telephone: **13 11 14**
Text: 0477 13 11 14
USA
Stroke Family Warmline
Telephone: 1-888-478-7653
Mental Health America Crisis Line
Telephone or text: 988
Text: MHA to 741741

You can also talk to your doctor or general practitioner to receive support.
The results of this study will be shared with the groups, charities and organisations that helped with sharing the study information.

Please feel free to contact me with any questions or concerns regarding your participation at:
Amber.Cole@uea.ac.uk

Appendix M

Additional Patient and Public Involvement Context

Experts by experience composed a two-person Patient and Public involvement (PPI) group held on 9th November 2023. The research protocol was reviewed, and the appropriateness of the assessment battery was considered.

The PPI group identified the need to mitigate the length of the battery where possible. Both responded positively to the inclusion of a fatigue notice prior to the questionnaires encouraging regular breaks. The ability to save and return to the questionnaire was highlighted as favorable in reducing the cognitive burden of completion, thus these changes were implemented within the protocol.

Where possible, it was identified that shorter measure versions would be beneficial. Consequently, the shortened Mini Mental Adjustment to Cancer Scale (modified for use in a stroke population) was utilized in place of the full questionnaire. Likewise, the two item Patient Health Questionnaire (PHQ-2) and Generalised Anxiety Disorder (GAD-2) were employed in place of their longer alternatives.

Practical considerations contextually appropriate to the target population were raised. Specifically, both members emphasized the importance of readability and accessibility, citing concerns about visual deficits and limited technological literacy. Thus, enlarged text was employed throughout the battery, and the steps required to progress through the survey were made as clear and recognizable as possible.

Appendix N

Confirmation of Ethical Approval

University of East Anglia
Norwich Research Park
Norwich. NR4 7TJ

Email: ethicsmonitor@uea.ac.uk
Web: www.uea.ac.uk

Study title: Exploring Predictors of Post-Stroke Adjustment: Psychological Flexibility and Stroke Characteristics

Application ID: ETH2425-1364 (significant amendments)

Dear Amber,

The amendments to your study were considered on 3rd February 2025 by the FMH S-REC (Faculty of Medicine and Health Sciences Research Ethics Subcommittee).

The decision is: **approved**.

You are therefore able to start your project subject to any other necessary approvals being given.

If your study involves NHS staff and facilities, you will require Health Research Authority (HRA) governance approval before you can start this project (even though you did not require NHS-REC ethics approval). Please consult the HRA webpage about the application required, which is submitted through the IRAS system.

This approval will expire on **30th September 2025**.

Please note that your project is granted ethics approval only for the length of time identified above. Any extension to a project must obtain ethics approval by the FMH S-REC (Faculty of Medicine and Health Sciences Research Ethics Subcommittee) before continuing.

It is a requirement of this ethics approval that you should report any adverse events which occur during your project to the FMH S-REC (Faculty of Medicine and Health Sciences Research Ethics Subcommittee) as soon as possible. An adverse event is one which was not anticipated in the research design, and which could potentially cause risk or harm to the participants or the researcher, or which reveals potential risks in the treatment under evaluation. For research involving animals, it may be the unintended death of an animal after trapping or carrying out a procedure.

Any amendments to your submitted project in terms of design, sample, data collection, focus etc. should be notified to the FMH S-REC (Faculty of Medicine and Health Sciences Research Ethics Subcommittee) in advance to ensure ethical compliance. If the amendments are substantial a new application may be required.

Approval by the FMH S-REC (Faculty of Medicine and Health Sciences Research Ethics Subcommittee) should not be taken as evidence that your study is compliant with the UK General Data Protection Regulation (UK GDPR) and the Data Protection Act 2018. If you need guidance on how to make your study UK GDPR compliant, please contact the UEA Data Protection Officer (dataprotection@uea.ac.uk).

Please can you send your report once your project is completed to the FMH S-REC (fmh.ethics@uea.ac.uk).

I would like to wish you every success with your project.

On behalf of the FMH S-REC (Faculty of Medicine and Health Sciences Research Ethics Subcommittee)

Yours sincerely,

Dr Paul Linsley

Appendix O

G* Power A Priori Power Analysis

Figure O1

Multiple Regression A Priori Power Analysis

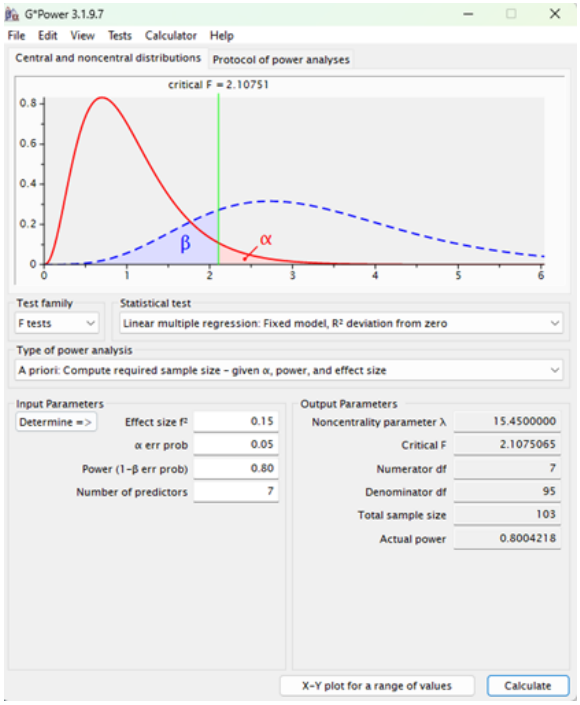
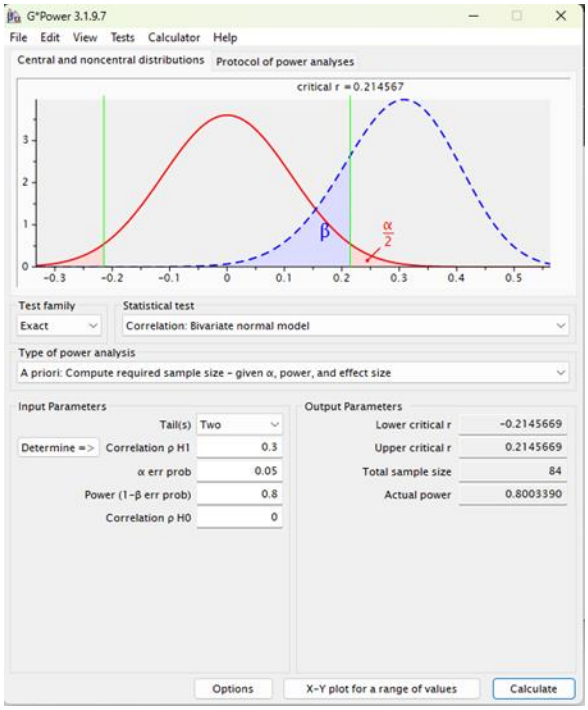


Figure O2

Bivariate Correlation Model A Priori Power Analysis



Appendix P

Histograms and Q-Q Plots for Assumption Testing

Figure P1

Histogram and Normal Q-Q Plot of Physical Stroke Severity

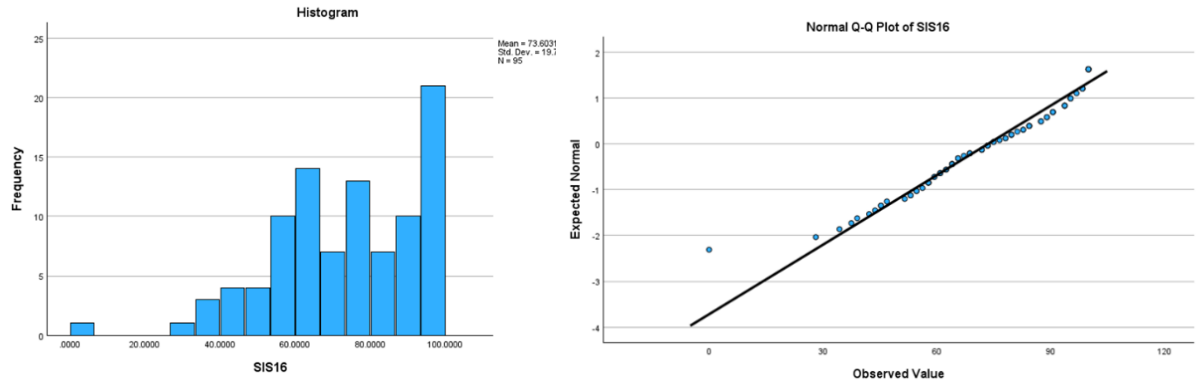


Figure P2

Histogram and Normal Q-Q Plot of Cognitive Stroke Severity

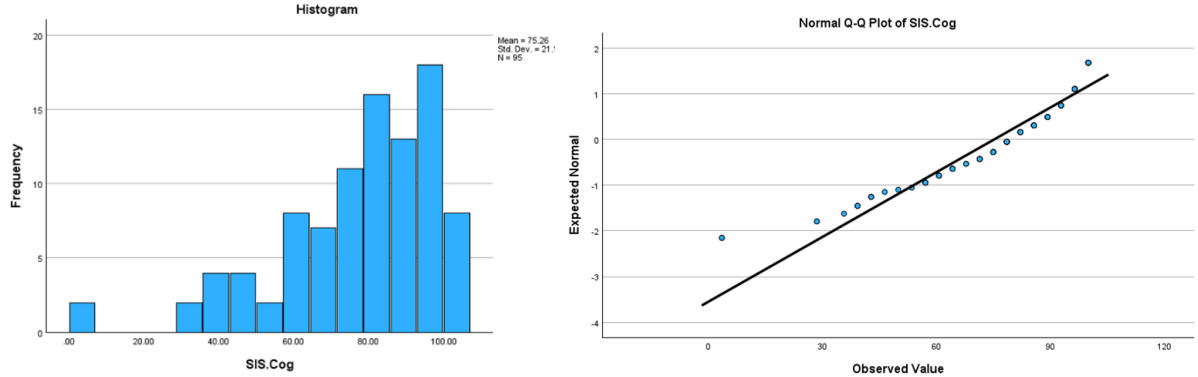


Figure P3

Histogram and Normal Q-Q Plot of Psychological Flexibility

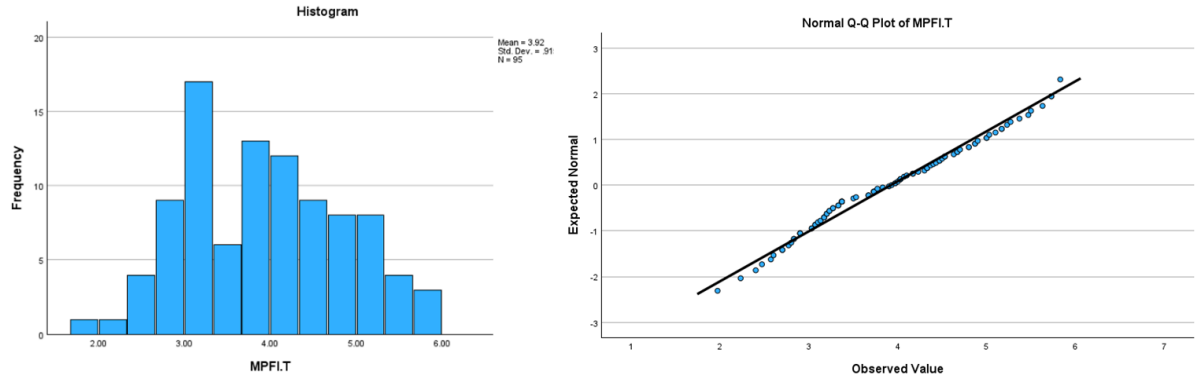


Figure P4

Histogram and Normal Q-Q Plot of Helplessness-Hopelessness

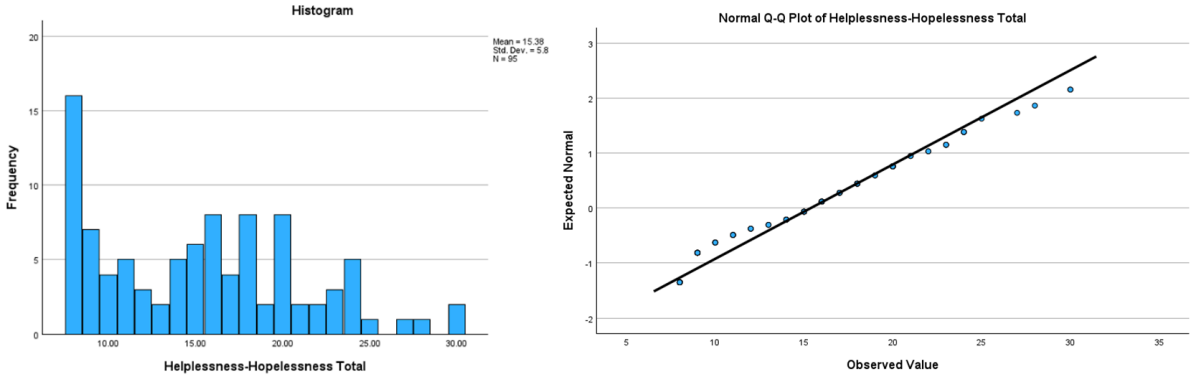


Figure P5

Histogram and Normal Q-Q Plot of Anxious Preoccupation

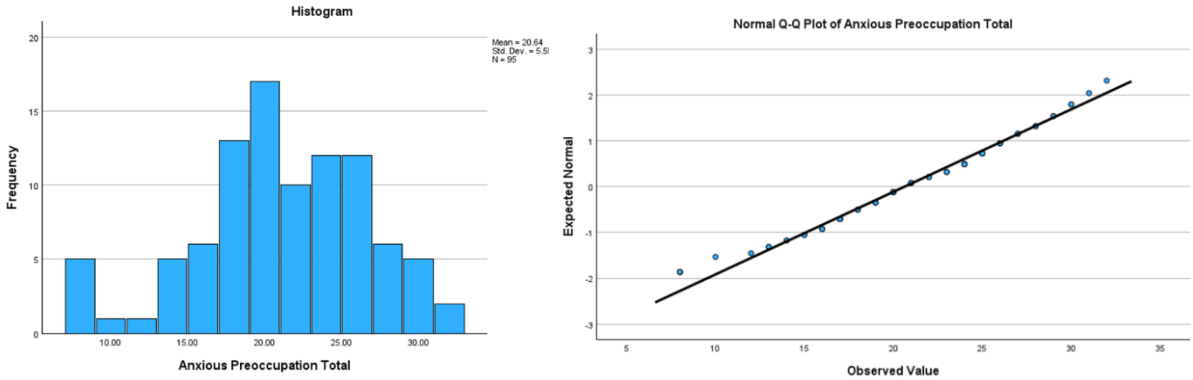


Figure P6

Histogram and Normal Q-Q Plot of Fighting Spirit

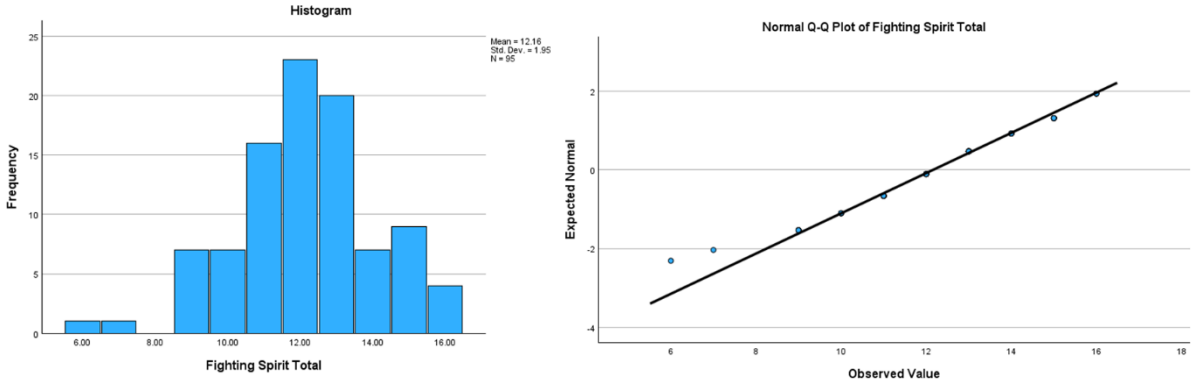


Figure P7

Histogram and Normal Q-Q Plot of Cognitive Avoidance

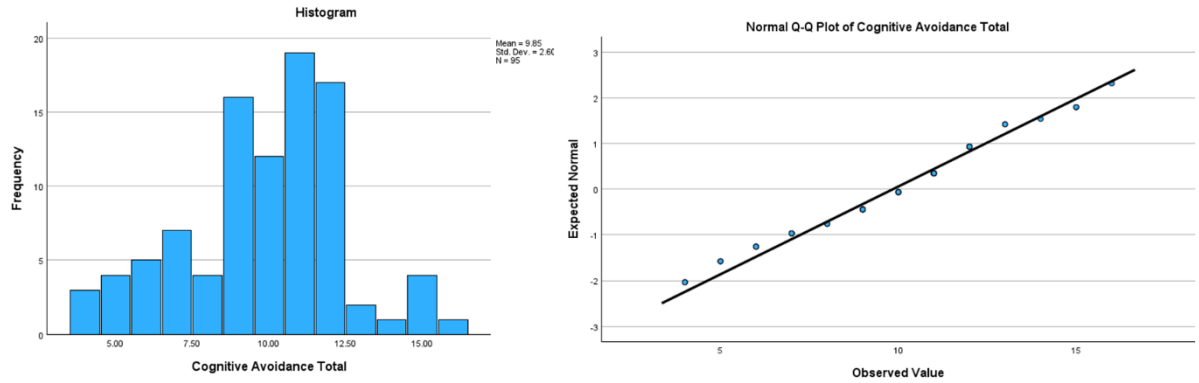


Figure P8

Histogram and Normal Q-Q Plot of Fatalism

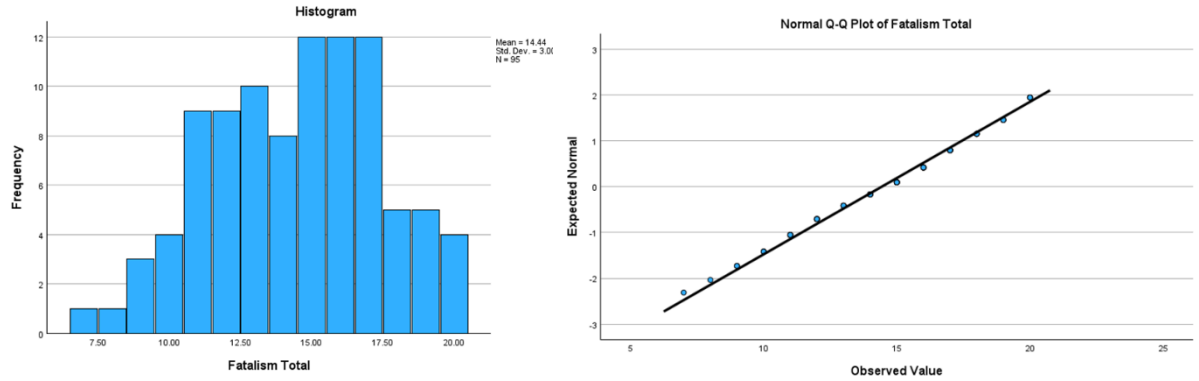


Figure P9

Histogram and Normal Q-Q Plot of Age

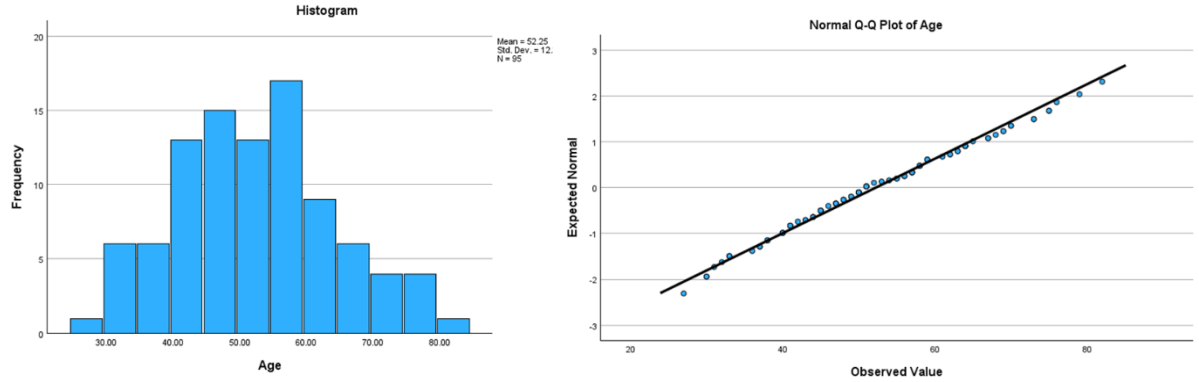
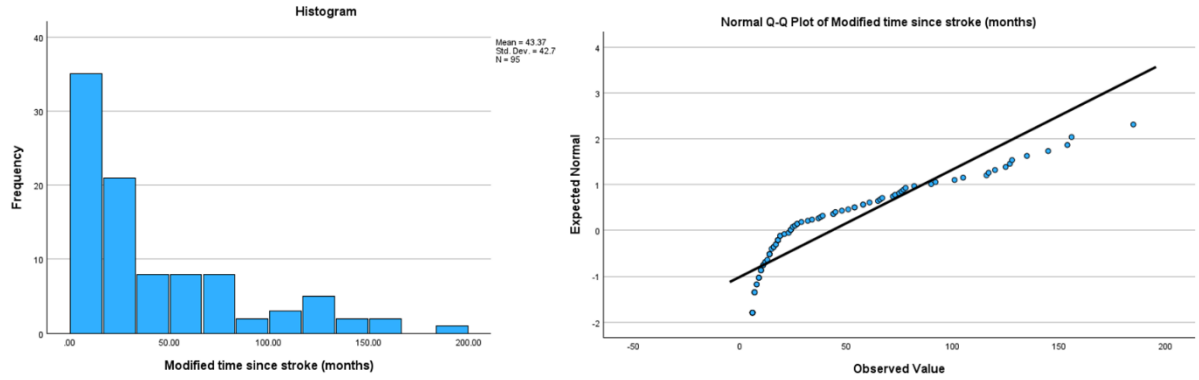


Figure P10

Histogram and Normal Q-Q Plot of Time Since Stroke

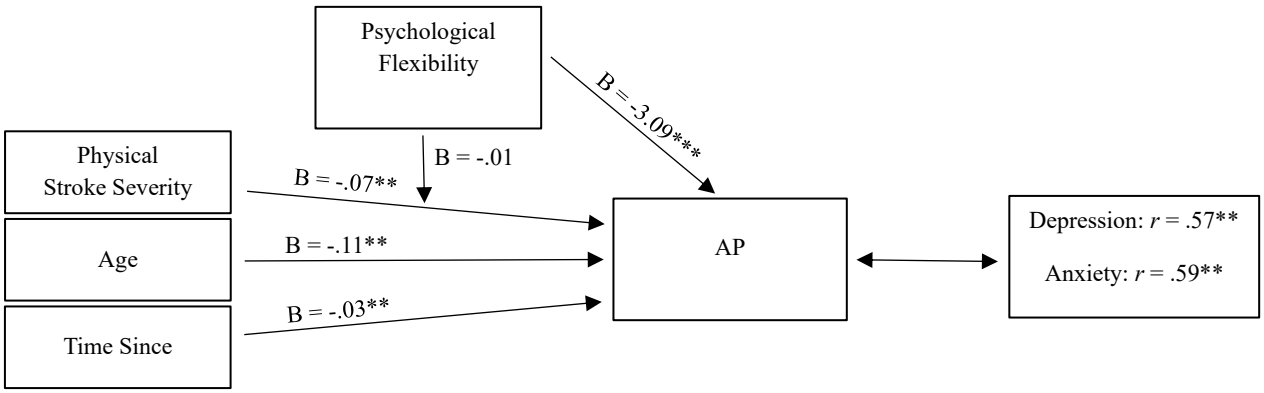


Appendix Q

Visual Summaries of Relationships Between Stroke Severity, Adjustment, Flexibility, and Mood

Figure Q1

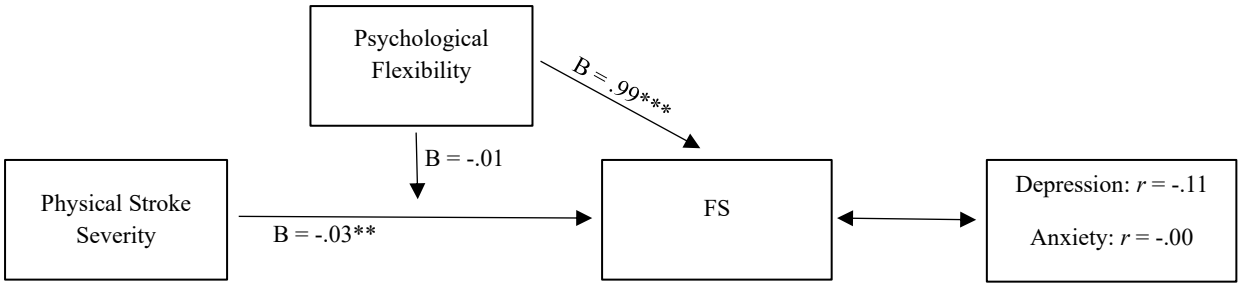
The Relationships Between Physical Stroke Severity, Anxious Preoccupation, Flexibility, and Mood



Note. AP = Anxious Preoccupation
*p<.05; **p<.01; ***p<.001

Figure Q2

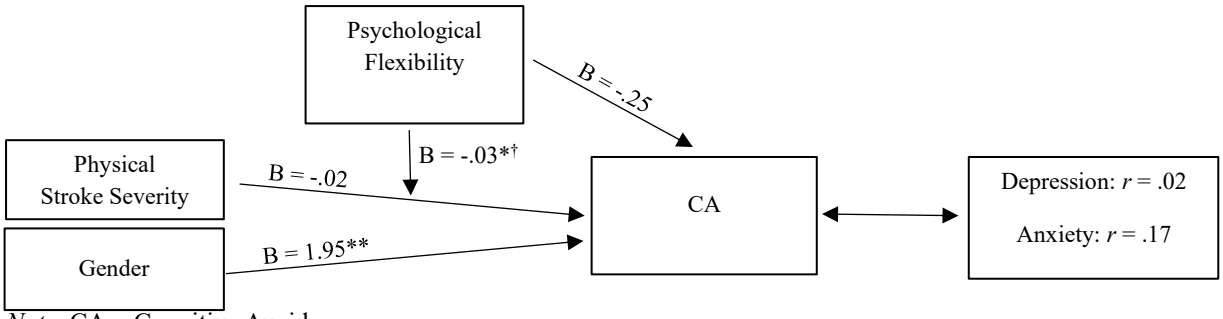
The Relationships Between Physical Stroke Severity, Fighting Spirit, Flexibility, and Mood



Note. FS = Fighting Spirit
*p<.05; **p<.01; ***p<.001

Figure Q3

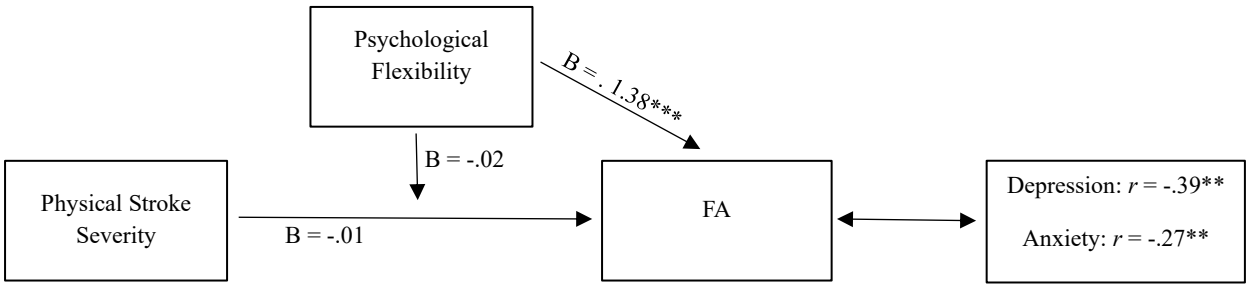
The Relationships Between Physical Stroke Severity, Cognitive Avoidance, Flexibility, and Mood



Note. CA = Cognitive Avoidance
*p<.05; **p<.01; ***p<.001; † = no longer significant after Bonferroni-Holm correction

Figure Q4

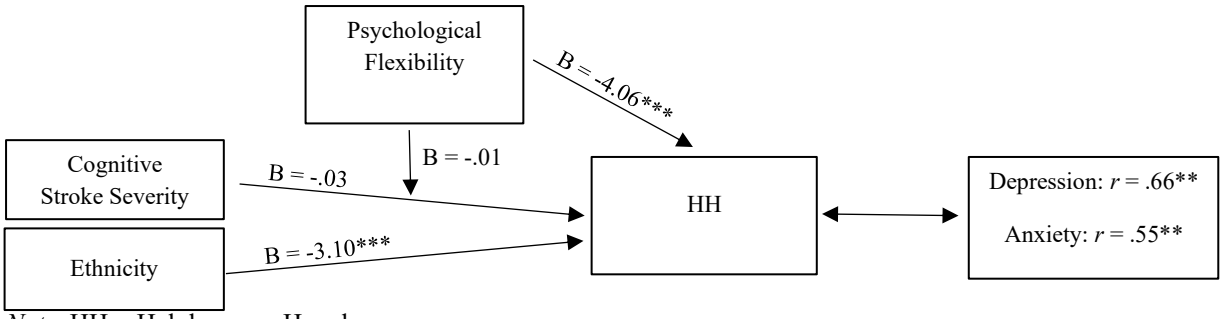
The Relationships Between Physical Stroke Severity, Fatalism, Flexibility, and Mood



Note. FA = Fatalism
*p<.05; **p<.01; ***p<.001

Figure Q5

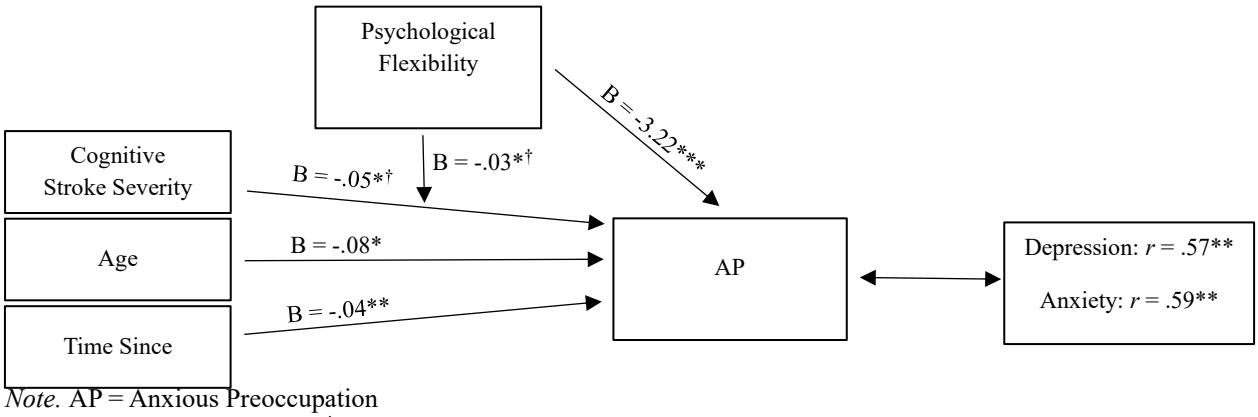
The Relationships Between Cognitive Stroke Severity, Helplessness-Hopelessness, Flexibility, and Mood



Note. HH = Helplessness-Hopelessness
*p<.05; **p<.01; ***p<.001

Figure Q6

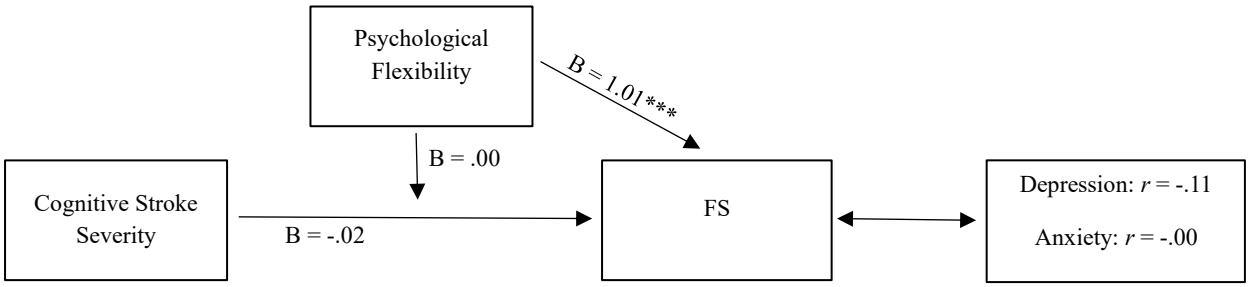
The Relationships Between Cognitive Stroke Severity, Anxious Preoccupation, Flexibility, and Mood



Note. AP = Anxious Preoccupation
*p<.05; **p<.01; ***p<.001; † = no longer significant after Bonferroni-Holm correction

Figure Q7

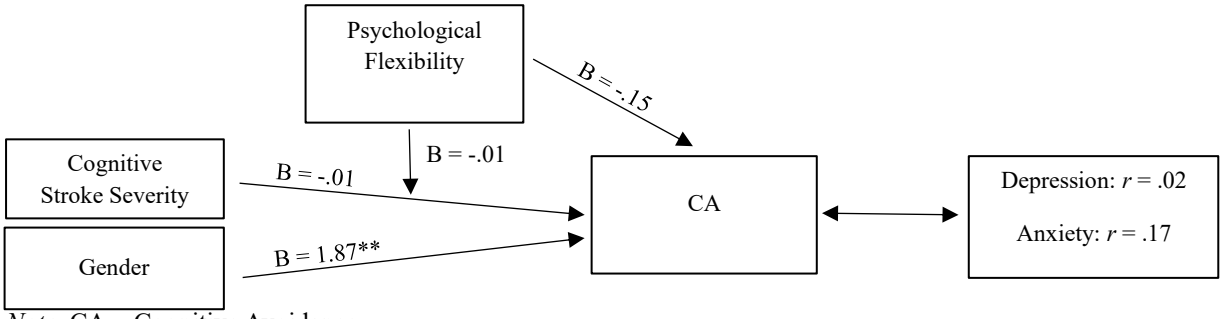
The Relationships Between Cognitive Stroke Severity, Fighting Spirit, Flexibility, and Mood



Note. FS = Fighting Spirit
*p<.05; **p<.01; ***p<.001

Figure Q8

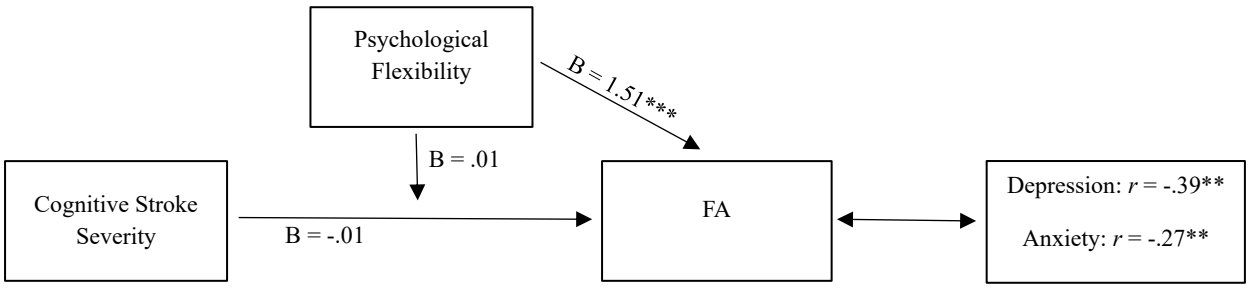
The Relationships Between Cognitive Stroke Severity, Cognitive Avoidance, Flexibility, and Mood



Note. CA = Cognitive Avoidance
*p<.05; **p<.01; ***p<.001

Figure Q9

The Relationships Between Cognitive Stroke Severity, Fatalism, Flexibility, and Mood



Note. FA = Fatalism
*p<.05; **p<.01; ***p<.001