

# Participation Restriction, Social Support, and Health-Related Quality of Life in Stroke Patients: A Narrative Review

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## Abstract

The evidence for the psychosocial factors that contribute to the health-related quality of life in stroke patients is analysed and discussed in this narrative review. The degree of participation in day-to-day life and the effectiveness of the social support that surrounds stroke patients are among the most important factors that determine the quality of life that is optimal after a stroke. However, there have only been a few studies that have looked into the potential predictors of health-related quality of life using a wide variety of factors that are implicated in participation restriction after stroke. This study looks at 20 different articles about strokes and finds that life after a stroke can be very different, including a decline in physical function and structure, restrictions in daily activities, a decline in quality of life, and a decline in social and emotional well-being. Consequently, the researchers came to the conclusion that social support plays a significant part in mediating the effects of a post-stroke on stroke patients.

**Keywords:** Psychosocial, Participation Restriction, Social Support, Health-Related Quality of Life, Stroke

## Introduction

One in ten Malaysian deaths in 2018 were due to stroke, according to WHO. Malaysia has the 107th highest age-adjusted mortality rate in the world. In high-income countries, stroke incidence has dropped dramatically, but its burden has grown (Feigin et al., 2014). Stroke has the third-largest DALYs disability burden worldwide, despite few studies evaluating its frequency, mortality, and epidemiological trends (Feigin, 2014).

Stroke can cause long-term disabilities that reduce quality of life (Kwok et al., 2006). Due to stroke symptoms, many people cannot return to their old social positions or activities. Stroke aftereffects include activity restrictions and quality of life decline (Peters & Hamzat, 2009).

Social support from family and friends protects stroke patients' mental and physical health (Friedland & McColl, 1987; Glass et al., 1993).

Studies show that stroke has a distinct and lasting harmful effect on health, both short-term and long-term, and disability significantly impacts quality of life among this group (Mackenzie & Chang, 2002, Jonsson et al., 2005; Larsen et al., 2005). Quality of life (QOL) is important when the impact is multidimensional and lifelong. Poor QOL can cause post-stroke impairment (Patel et al., 2006).

There are three main topics covered here: participation restrictions, as well as the psychosocial elements that affect quality of life for stroke victims. Finally, we make some recommendations for future research.

### **Participation Restriction**

New ICF terminology replaces "handicap" with "participation" (ICF, 2001). ICF divides health issues into functional and environmental variables. Individuals who complete a task or act are participants. Daily tasks like grocery shopping and housework required help, and work and leisure options were limited (gardening, hobbies, reading a book). To determine participation, health and environment are considered. Public health and rehabilitation policy prioritises disability reduction and chronic illness involvement.

The outcomes of 174 acute stroke trials were analysed. 76% of patients died; 76% had physical function and structure deterioration; 42% had activity limitations; 2% reported overall quality of life decline (Roberts & Counsell, 1998). Few studies have examined poststroke participation restrictions, and most were cross-sectional or lasted only two years (Rochette et al., 2001; Mackenzie & Chang, 2002; Sturn et al., 2002; Carod-Artal et al., 2000).

Stroke victims often lose interest in things they once enjoyed (Parker et al, 1997). Mild stroke awareness has increased due to life involvement. Participation measures a person's ability to carry out daily tasks and social duties more comprehensively than the Barthel Index (Desrosiers et al., 2003).

Even when able to perform basic daily tasks, stroke patients' social participation is limited (van der Zee et al., 2013). Three to six months after a stroke, involvement improves, followed by stability (Adamit et al., 2015; Kwakkel & Kollen, 2013; Mayo et al., 2002; Rochette et al., 2007). Cognitive deficits, emotional deficits, psychological difficulties, functional dependency, comorbidities, and ageing are linked to post-stroke participation restrictions (Beaudoin et al., 2013; Viscogliosi et al., 2011; Andrenelli et al., 2015; Choi Yi et al., 2015; van Mierlo et al., 2015; Yang & Kong, 2013; Desrosiers et al., 2006; Schepers et al., 2005). Social position, retirement, and co-morbid conditions affect older and younger stroke survivors' participation needs (Kong et al., 2002). The elderly's participation demands are more complex due to their wider range of activities (Turcotte et al., 2015).

Most stroke victims can't enjoy social or leisure activities (Rouillard et al., 2012; Vincent-Onabajo, 2013). Relationships provide continuity, comfort, and support (Salter et al., 2008). Previous studies found 12% to 64% participation restrictions for stroke patients.

According to Amarshi et al (2006), stroke survivors' limited activity, occupational loss, reliance on others for social/leisure activities, and sense that these activities had been reduced showed participation limitation. They view their limited involvement as an occupational loss, which means they lose social and leisure activities and can't walk alone.

Stroke survivors often complain of being unable to socialise with friends and feeling bored and lonely (Burton, 2000; Murray & Harrison, 2004). According to research on senior well-being, friends are more important than family (Baldassare et al., 1984; Edwards & Klemmack,

1973; Larson, 1978). Spending time with friends and peers increases arousal and positive affect in older adults, making it easier for them to have fun and enjoy activities (Baldassare et al., 1984; Mannell et al., 1982; Rook, 1987). After a stroke, friends may have fewer opportunities to socialise. They may not be able to drive themselves someday and must rely on others (Rittman et al., 2007). Friends and acquaintances may have trouble doing activities together.

### **Health-Related Quality of Life (HRQoL) in Stroke Patients**

In the past decade, subjective well-being and HRQoL were added to stroke outcomes. It is "an individual's perspective of their position in life in relation to their expectations, standards, and worries" (WHO, 2012). The biopsychosocial model is popular for Alzheimer's and Parkinson's. HRQoL reflects a holistic picture of subjective health and empowers the patient and his or her well-being.

How well people's joy needs are met best measures quality of life. WHOQOL's definition of quality of life includes more than subjective well-being; it also includes an individual's view of their position in life in relation to their goals, expectations, standards, and worries. Physical health, psychological condition, independence, social interactions, and relationship to surroundings are included (Giaquinto et al., 2010).

HRQoL includes patients' perceptions and experiences of illness, which are key to treatment goals. HRQoL measures people's happiness, health, and happiness. HRQoL also includes a patient's overall measure of efficacy, which is increasingly used in chronic illness assessment. Post-stroke HRQoL measures a stroke patient's subjective physical, mental, and social well-being. Multidimensional assessment of stroke survivors' HRQoL is more holistic. Assessment should include physical, functional, cognitive, and social HRQoL components.

The suddenness, severity, and length of a stroke scare the patient. Clinical and patient-reported outcomes, such as QoL, are often used to supplement stroke treatment and recovery. Self-reported health is crucial for evaluating treatment outcomes or arranging additional care. Therapy rarely uses patient-centered outcomes. Outpatient treatment rarely includes comprehensive health monitoring. Post-stroke patients have lower QoL than the general population. It may vary from person to person and deteriorate with age (Haley et al., 2011). Pre- and post-stroke functional status, sociodemographic and socioeconomic status (marriage, income), living arrangement (single or cohabiting), educational attainment, and depression are predictors of post-stroke QoL. (Cherepanov et al., 2010; Sprangers et al., 2000; Kim et al., 1999; Ayerbe et al., 2013; Hackett, & Pickles, 2014).

Stroke can upend a person's life. Stroke causes more than motor function loss. Loss of social contact, diminished self-worth, and sadness can also cause depression after a stroke (Marchant et al., 2013; Liesbet et al., 2017; Schindel et al., 2021). Overall patient health is the best way to measure the effectiveness of medical stroke therapy (Schindel et al., 2021). Singaporean researchers found that post-stroke patients have a lower quality of life than the general population. According to the study, the quality of life decreases by 0.226 points per year (She et al., 2021).

After a stroke, QoL varies widely, according to research. In the first three to 24 months after a stroke, QoL improves, but over the next three years, it declines (Cherepanov et al., 2010; van Mierlo et al., 2016; Rachpukdee et al., 2013). After hospitalization and rehabilitation, life quality improves. Some areas may perform worse after discharge (Padua et al., 2008; Hopman & Verner, 2003). Research shows that stroke survivors have lower HRQoL than non-stroke survivors (Kwon et al., 2018; Min & Min, 2015).

Patients who could perform ADLs before their stroke but couldn't return to that level of function suffered severe quality-of-life consequences (QOL). Mild to moderate stroke can affect QOL even if patients can perform all ADLs. Sveen et al. found a similar link between satisfaction and leisure and mobility indices in 64 Norwegian stroke survivors six months after onset. They recommended long-term care with leisure activities for stroke survivors. Despite a high BADL score, there were cognitive and emotional deficits and lower satisfaction on the satisfaction questionnaire.

Sousa et al (2020); Niki et al (2014); Em et al (2015) found a link between the post-stroke quality of life and social support (2015). Stroke patients showed similar depressive symptoms, social support, and overall health and well-being as (Gordon and Hibbard, 1997; Pfeil et al., 2009; Dayapoglu and Tan, 2010; Em et al., 2015). Therefore, research, progress evaluation, and service targeting for stroke patients must consider QOL. "Health-related quality of life" measures stroke survivors' physical, social, and psychological well-being (Haywood et al., 2005).

Stroke severely affects HRQL (Dhamoon et al., 2010). These characteristics include demographics, psychological issues (e.g., depression), and functional status (disability) (Mackenzie & Chang, 2002; Abubakar & Isezuo, 2012; Kielbergerova et al., 2015). Researchers have discovered the importance of social connections and their features (such as personal relationships and social support). Our research found that strokes increase despair and decrease social interactions. "Narcissistic Wound" makes women more prone to stroke sequelae. Minor motion sequelae (three flexed fingers) didn't stop women from socializing.

### **Psychosocial Factors Contributing to The Quality of Life Post-Stroke**

A person's physical, social, and emotional health all contribute to their "quality of life" (Cumming et al., 2014). Stroke survivors report a lower quality of life compared to those who have never experienced a stroke, as documented by (Em et al., 2015). Stroke can cause mental health issues like depression and low self-esteem, as well as physical problems and isolation (Dayapoglu & Tan, 2010; Em et al., 2015). Quality of life (QoL) was significantly negatively predicted by depression in a sample of 50 stroke patients (Kim, Warren, Madill, & Hadley, 1999).

### **Social Supports in Stroke Patients**

Stroke victims may need family and friends' help to resume previous responsibilities and activities (O'Sullivan & Chard, 2010). Strong social networks help post-stroke patients recover faster and better (Glass et al., 1993). This means that after a stroke, rehabilitation strategies and interventions could include group activities, such as sessions with family members and carers and outdoor exercises with a support network 2018.

Glass and Maddox (1992) found that social support does not affect recovery in the first month, highlighting the need for longitudinal studies in rehabilitation research. Social support reduces depressive symptoms and improves quality of life for stroke survivors by reducing stress, boosting self-esteem, and fostering social connections. Social support improves problem-solving and emotional expressiveness, which reduces depression symptoms.

Whether they live together or not, relatives are likely the main support system (Anderson, 1988). Positive social support group members reported higher affectionate support and social connections. The Satisfied group's social networks should promote and invite rewarding employment. Their social networks can help them overcome physical and psychological hurdles (such as providing transportation) and ignore others' reactions to their impairments.

Less socially supportive people were less satisfied with the affection they received. Dissatisfied people may have a smaller social circle, limiting their ability to get emotional support and have fun. Stroke survivors who live alone may have a smaller social circle. Even though most dissatisfied people (68.4%) were married and living together, a stroke in one partner could affect the marriage.

Instead of working together and spending time together, family members may spend more time helping stroke patients with daily activities (such as dressing and bathing), taking on their responsibilities (such as cooking, cleaning, and managing finances), and managing their health. Families may lack the time and energy to provide emotional support, maintain pleasant interactions, and engage in activities with stroke survivors. Resentment over the time and effort needed to care for a stroke patient can affect family relationships. Tensions may arise when a stroke victim resents relying on family members. Stroke patients may not view interactions with family members favorably.

According to research, the clinical group avoided post-stroke depression due to high social support (Haley et al., 2011; White et al., 2014). Huang and Lewin found similar results 2013. This is why social support is so important in coping with an unexpected and stressful catastrophe like a stroke (Salter et al., 2010). Family support, treating depression, and reducing physical reliance can improve post-stroke quality of life.

### **Depressive Symptoms Following Stroke**

One-third of stroke survivors experience post-stroke depression, according to conservative estimates (Hackett et al., 2005). Post-stroke depression is linked to lower quality of life and limited social engagement (Carod-Artal et al., 2000; D'Alisa et al., 2005; Desrosiers et al., 2005; Rochette et al., 2005). Stroke causes people to lose confidence in their abilities, be unable to return to many of their previous jobs, and become socially isolated (Rochette et al., 2005; Kiem et al., 1999; Amarshi et al., 2006; Burton, 2000; Dowswell et al., 2000; Hartman-Maeir et al., 2007; Murray & Harrison, 2004; Rittman et al., 2007). Many stroke survivors experience depression as a result of their inability to adjust to their new circumstances.

Depression can be diagnosed using ten mood measures or four psychiatric interview schedules. Four studies used self-reporting mood scales, while the others used interviewer-reporting or self-reporting scales with interviews (10 studies). Depression (or depressive symptom severity) was also defined differently across studies. 19 studies characterised depression using mood scales and structured interviews, with DSM criteria applied in most cases.

43 studies involving 20 293 stroke patients found depression. There were six public-focused, 15 hospital-based, and 22 rehabilitation-related studies (Ayerbe et al., 2013). Each depression study included 14 to 13,999 people. Nine studies had more than 200 patients, and one had over 1000. Validated scales, DSM criteria, and a validated question were used in 29 of the 43 studies. Depression was measured 11 ways. Different studies used different depression scale cut-off values, making it hard to compare results. Only 8 studies reported on the prevalence of depression more than a year after a stroke; 13 studies evaluated participants at various times (Ayerbe et al., 2013).

Some standardised scales, such as the Beck Depression Inventory (Montgomery & Asberg, 1979; Kim et al., 2002; Eriksson et al., 2004), the Geriatric Depression Scale (Herrmann; 1998; Asberg, 1979; Egger et al, 2011), and the Hamilton Depression Rating Scale (APA, 1987; Sudlow & Warlow; 1996; Kim et al., 2002; Eriksson et al. Because of underreporting (or underrecognition) of abnormal mood and measurement difficulties in neurologically disabled

patients, this is likely a conservative estimate. Mood is a major factor in a person's ability to recover from a stroke.

Previous research suggests that the lowest and highest rates of depression are found in population-based and rehabilitation-based studies, respectively. This may be due to selection bias toward including more disabled stroke survivors in these studies (Burvill et al., 1995; Herrmann et al., 1998; House et al., 1991). First few months after stroke are considered the most vulnerable for depression. Our analysis casts doubt on biological theories linking acute stroke lesion to depression in this case.

Emotional status restricts study participation, D'Alisa and colleagues found. I'm stuck. What do I plan to do in the future? Depression can affect a patient's ability to participate in daily activities like getting around, socialising, or enjoying leisure time. This study confirms previous findings (Harwood et al., 1997; Clarke et al., 1999; Schnyder et al., 1999; Kemp & Krause, 1999) that emotional well-being is more important than physical disability in long-term illness patients. It also emphasises psychosocial support from the rehabilitation team and environment.

Stroke patients' QOL is often impaired (Sturm et al., 2004). 45 patients (49.5%) had DS early after stroke, but only 30 had it during follow-up. Within six months, 48 patients (52.7%) had DS. Biran and Chatterjee (2003, 2005) suggested that patients with anosognosia (for hemiplegia) may not realise they are depressed because depressive behaviour and subjective depression experience are dissociated (Anosognosia for depression). Anosognosia for hemiplegia is linked to neglect after stroke (Vallar et al., 2003). Anosognosia models for hemiplegia argue that participants learn their impairment through activity (Biran et al., 2003). According to Pfeil, Gray, and Lindsay, many stroke patients experience depression 2009. Stroke patients had more depressive symptoms than nonclinical participants, found Em et al. Another study found that 25-79% of stroke patients had depressive symptoms (Gordon & Hibbard, 1997). Depressive symptoms are common in the first six months after a stroke, but they can last for five years (Barker-Collo, 2007). A 2013 Journal of Neurology study found that 33% of stroke survivors reported depressive symptoms five years later. Decreased social activity and life quality can lead to depression in stroke survivors (Huang et al., 2010; White, et al., 2014). White et al (2014) tracked 134 stroke survivors for 3, 6, 9, and 12 months. Depressive symptoms decreased in few patients. Less depressed patients reported a better quality of life, less physical disability, and more social support.

At least one-quarter of acute stroke patients experience depression in the first year, with the highest risk in the first few months. Variations in estimates across studies are due to differences in definitions, populations studied, assessment times, and the difficulty of detecting abnormal moods in people with stroke-related disability (Hackett et al., 2005).

Depressive symptoms during acute poststroke were a predictor of depression six months later. This finding is important because stroke patients may benefit from pharmacological treatment for depression (Astrom et al., 1993). Early antidepressant treatment is more effective than later treatment (Bacher et al., 1990). Antidepressants improve post-stroke function and mortality (King et al., 2002; Burvill et al., 1995). Most studies show that women experience more depressive symptoms six months after a stroke than men.

Elderly patients are more prone to depression and anterior circulation stroke after a stroke (Kim et al., 2018; Theeke et al., 2017). Depression is the most common psychological disorder in stroke survivors and may affect underlying physiological abnormalities (Go et al., 2013). According to Jaracz and Kozubski's research, neurological deficits increase depression risk.

Physical impairment and mental illness are common causes of decreased well-being. Early detection and treatment of depression symptoms can improve patients' lives.

### Method

The papers on this study are selected mainly through Pubmed, SAGE, SCOPUS, and MEDLINE as the main search engine. The inclusion criteria are: 1) full text, 1) in English, and 3) all adult age 19 and above. Keywords used are "participation restriction", "health-related quality of life", "social support", "stroke patients" OR "stroke" OR "cerebrovascular disease" OR "cerebrovascular accident" OR "CVA".

### Results

This review has shown the proven correlation between participation restriction, social support, and health-related quality of life and how each factor play a significant effect and interrelated roles with each other in stroke patients' life. The details of the studies are provided in table 1 below.

Table 1

*Studies Investigating the Relationship Between Participation Restriction, Social Support and Health-Related Quality of Life in Stroke Patients.*

Study	Aim of Study/Objective	Sample Size	Findings
Urimubenshi (2015)	To measure Activity limitations and participation restrictions experienced by people with stroke in Musanze district in Rwanda	10 stroke patients	As domains of participation restrictions, the participants' expressions were related to three main themes which are i) the inability to return to previous occupation, ii) decreased social interactions, and iii) the inability to participate in religious activities.
Gadidi et al (2011)	To assess the long-Term Outcome Poststroke: Predictors of Activity Limitation and Participation Restriction. Archives of Physical Medicine and Rehabilitation		Reviews of stroke outcome measures assess the types of outcomes used in 174 acute stroke trials. Death was recorded in 76% of trials, impairment of body function and structure in 76%, activity limitations in 42%, and restricted participation and quality of life in only 2%. The prevalence of participation restriction among stroke patients in previous studies ranges from 12% to 64%. These patients required help

			with tasks such as housework and shopping; they were limited in work and leisure activities (gardening, hobbies, reading a book).
D'Alisa et al (2005)	To explore the factors determining restricted participation in a selected population of long-term post-stroke survivors		Stroke survivors were found to be restricted over a wide range of domains including 15.1% (economic self sufficiency) to 45.2% (occupation) of our post-stroke patients scored poorly, i.e. higher than 4, in all the LHS domains excepting orientation, indicating a rather high degree of restriction in participation in these domains.
Rochette et al (2007)	To document changes in participation in individuals who had had a mild stroke in the first 6 months poststroke compared to their prestroke level.	40 stroke patients	After a stroke, individuals tend to diminish their level of activity (intensity and frequency) to avoid excessive fatigue. The fear of another stroke was described as overwhelming by individuals who had a stroke as well as by their spouses (Close & Procter, 1999; Bakas et al., 2002).



Amarshi et al (2006)	To explore how often older adult stroke survivors participate in social and leisure activities, the meaning(s) associated with this participation and the factors felt to hinder or contribute to this participation.	12 stroke patients	Four themes emerged from the data that were related to stroke survivors' social and leisure participation:  <ol style="list-style-type: none"> <li>1. It's a completely different life</li> <li>2. What limits me from participating</li> <li>3. What I need in order to participate</li> <li>4. Continuing on with my life</li> </ol>
Carod-Artal (2012).	Determining QoL in Stroke Survivors		A stroke patient independent in their ADL may experience limitations in several HRQoL domains, such as emotional role, employment or sexual function. In the last decade, patient-focused outcomes, such as subjective well-being and HRQoL, have been added to the limited number of outcomes in the stroke field.
Carod-Artal et al (2000)	To measure the quality of life among stroke survivors evaluated 1 year after stroke	118 patients of 1 year after onset	Significant deleterious effects persisted in the QOL of patients independent in ADL but not achieving the level of function they enjoyed before the stroke. The consequences of mild to moderate stroke can affect all dimensions of QOL despite the patient achieving full independence in ADL
Noga (2007)	To measure activities, participation and satisfaction one-year post stroke	60 stroke patients	Satisfaction from life was significantly associated with functional outcomes. Yet, a higher correlation was found with participation than with BADL. In addition, participation was found to be a significant predictor of life satisfaction scores. These findings underscore the importance of broad

			areas of functioning, beyond BADL, to subjective sense of well-being.
Martini et al (2022)	To evaluate the quality of life in patients two years after stroke and to determine which of these factors influence QOL most.	52 stroke patients	<p>A significant association between the mean score of social relationship and psychological health in patients which was evidently a higher score among patients aged 50 years old and less than those aged over 50 years old.</p> <p>The increasing age of post-stroke patients was followed by a decrease in the total score of quality of life, which can be interpreted as low quality of life. The finding also showed that every one-year increase in age causing a decrease in the score of quality of life. Older post-stroke patients are more at risk of having depression and anterior circulation stroke.</p>
Schindel et al (2019)	Quality of life after stroke rehabilitation discharge: a 12-month longitudinal study.	411 patients & proxy	<p>Stroke incidents increase the risk of social isolation, leading to a lower QoL. Study findings indicate positive effects of social support and participation on health-related QoL in stroke patients although the type or source of support is rarely specified.</p> <p>There is evidence for an increase in QoL within the first 3–24 months after stroke along with a decline in QoL over a period of three years. It is important to note that QoL rises after sufficient inpatient treatment in hospital and rehabilitation centers. However, a decline in individual domains can occur after discharge. Compared to reference values for the general population,</p>

			post-stroke participants reported lower rates of QoL at rehabilitation discharge and after 12 months.
Azlin et al (2016)	To evaluate function and quality of life (QoL) and associated factors among long term stroke survivors in the Malaysian community	203 stroke survivors	Stroke chronicity notably had a positive effect on QoL among the stroke survivors in our study. There is a possibility that as the stroke becomes more chronic, the stroke survivors are able to better adapt to their post-stroke disabilities. More than five months post-stroke, coping abilities increased and became a powerful determinant of QoL.
Choi et al (2015)	To assess psychosocial predictors of participation restriction in poststroke Korea	171 community-dwelling individuals with chronic stroke in Korea	Social support was assumed to be mediated by psychological factors. Because previous studies have indicated that participation would be further restricted in older participants and when social support is limited (Lo et al., 2008), social support and age were assumed to directly affect participation restriction.

Vincent-Onabajo GO et al (2015)	Influence of Sociodemographic and Stroke-related Factors on Availability of Social Support among Nigerian Stroke Survivors	100 stroke survivors	<p>Social support from family, friends, and community has been shown to provide protection against poor psychosocial and functional outcomes after stroke. The mediating role of social support between functional ability and poststroke depression, and poststroke quality of life has also been identified with social support regarded as an intervening variable in stroke outcomes.</p> <p>Social support was found to be significantly different between men and women in the univariate analysis with men reporting greater degree of social support. This finding appears somewhat unexpected and at variance with a Chinese study that indicated a higher degree of social support among female stroke survivors.</p>
Mayo et al (2014)	To track the dynamics of participation post-stroke in relationship to the dynamics of walking capacity, social support, and mood	102 stroke survivors	<p>More than 50 % of these people showed excellent participation, but excellent participation was also achieved with only fair social support. No one with poor social support achieved excellent participation, and the majority (71 %) had poor participation. Social support greater than poor is necessary for excellent participation, but very good. People with poor social support mainly had poor participation (71 % of the 11.4 %).</p>
Owolabi (2008)	Determinants of health-related quality of life in Nigerian stroke survivors	100 stroke patients	<p>Social support correlated with HRQOL in the Ibadan respondents (Dorman et al., 1997; King, 1996). aside from stroke levity and disability, psychosocial factors such as emotional responses and social support determined HRQOL in stroke survivors.</p>

Huang et al (2010)	To examine the associations among social support, poststroke depression and quality of life among patients with first-time ischemic stroke	102 patients with first-time ischemic stroke	<p>Social support, particularly emotional support (ES), is a valid predictor for improved functional recovery after stroke (Kwakkel et al. 1996, Tsouna-Hadjis et al. 2000). Low social support increases the risk of stroke mortality, especially in men (Ikeda et al. 2008). Social support affects mortality, disease prognosis and rehabilitation. Social support may be importantly linked to stroke outcomes.</p> <p>Social support as a mediator of quality of life As predicted, social support was related positively to QOL in patients with stroke, which supports theories linking the two variables (Go¨ z et al. 2007, Lin et al. 2008).</p> <p>The more social support they received, the more patients achieving better QOL in both physical and mental dimensions. Social support and QOL were increased simultaneously.</p>
Doble et al (2009).	To determine if perceived level of social support and number of depressive symptoms differentiates those who are satisfied with their time use post-stroke from those who are dissatisfied.	54 subjects with strokes	<p>Previous research has identified that environmental factors such as perceived available social support are important determinants of quality-of-life following stroke. Family members may spend more time assisting persons with stroke with daily activities (e.g., dressing, bathing), assuming responsibility for activities previously performed by persons with stroke (e.g., preparing meals, cleaning the house, managing finances), and assuming responsibility for the overall management of their health. Thus, little time and energy may be left for family members to provide affectionate support, to ensure that interactions are positive, and to do</p>

			things with those who have had a stroke.
Sousa et al (2020).	To identify differences between participants who suffered a stroke and healthy controls, concerning cognitive performance, depressive symptoms, social support and quality of life	30 stroke patients & 30 healthy participants	Post-stroke patients recover faster and better with social support (Glass, Matchar, Belyea, & Feussner, 1993). Using family and carer group sessions and outdoor activities with support structures in post-stroke rehabilitation was suggested (Elloker & Rhoda, 2018). Glass and Maddox (1992) found that social support does not affect rehabilitation in the first month. Huang et al. (2010) and Lewin, Jöbges, and Werheid (2013) found that social support reduced depressive symptoms and improved quality of life after a stroke by reducing stress and promoting self-esteem and social interactions. Social support improves problem-solving and emotional expression, reducing depressive symptoms (Glymour, Weuve, Fay, Glass, & Berkman, 2008).
Thayabaranathan et al (2018)	Factors influencing self-reported anxiety or depression following stroke or TIA using linked registry and hospital data.	23 stroke patients	HRQOL after stroke is predicted by several factors including functional constraints, age, sex, socioeconomic status, depression, and coping strategies. HRQOL may also change over time after stroke. Discharge from rehabilitation is a particularly challenging time with respect to HRQOL. Treatment is completed, and patients are faced with the

			consequences of stroke in their home environment. This can cause psychological distress and reduced HRQOL
Schindel et al (2019).	To assess quality of life after stroke rehabilitation discharge: a 12-month longitudinal study.	411 patients & proxy	One group of patients had a smaller social network and were probably more socially isolated with fewer social resources such as nearby people who offered counselling or gave solace. This vulnerable group is more likely to be female and has a lower probability of improving QoL over 6- or 12-months post-rehabilitation. Larger network size seems to improve patients' resilience. Patients living alone reported lower QoL, but patients living with others demonstrated a significantly larger decline over time. It is important to emphasise that presumed social support in these cases may work antithetically. Silverstein et al. report that a high level of support can be harmful and that relationships might harbour the risk of abuse or violence.

**Discussion**

**Participation Restriction**

Most people who have had a stroke are unable to enjoy their favorite pastimes. People value connections not just as sources of solace and sustenance but also as a means of guaranteeing a steady stream of familiarity in their lives. Community-based or outreach rehabilitation services, such as community health centers, day programs, or home visits, are necessary to address feelings of diminished social interactions.

The majority of respondents said they were unable to go back to their previous careers. Participants voiced worry about becoming economically dependent due to their inability to engage in income-generating activities. Not being able to leave the house and being separated from the family and neighbors after leaving their homes for rehabilitation led to a decrease in the participants' social interactions, they said. Participant's inability to walk, and the pain associated with walking for those who were able to walk, were cited as a major

barrier to participating in religious activities, which was a major source of concern for the participants (Urimubenshi, 2015).

It appears that occupation is worse for recent post-stroke patients compared to those who have been in recovery for a longer period of time. This may indicate that extremely chronic patients eventually learn to better manage their time at work and in their personal lives. This is because studies have found that for stroke patients, regaining the ability to interact with others and participate in community life is often more important than regaining the ability to perform certain physical tasks.

### **Social Support**

Having people around you who care about you can be a huge help when you are sick and can make all the difference in how well you handle your symptoms and how well you follow (House et al., 1988; Gallant, 2003). Patients with chronic illnesses benefit greatly from the combination of professional and community-based psychosocial support, as patients' emotional well-being has been found to be a significant factor in their level of activity limitation.

Researchers have found that social support does not have a direct effect on participation restriction, but that it does have an indirect effect via psychological factors (Choi et al., 2015). Thus, it is suggested that stroke patients' social support networks be factored into their recovery plans. Improving rehabilitation can also be aided by placing more of an emphasis on teaching stroke patients social skills and helping them build social support networks.

Therefore, improving stroke survivors' access to social support may be a useful strategy for mitigating the negative effects of the disease on their mental health, such as the development of post-stroke depression and the worsening of their overall quality of life.

### **Health-Related Quality of Life**

Until recently, researchers examining the prevalence of stroke only looked at outcomes like mortality and recurrence, ignoring QOL concerns. Stroke-related quality of life and post-stroke life satisfaction are crucial but understudied outcomes of healthcare (Carod-Artal, 2000).

More than half of our stroke survivors reported difficulties in virtually every area of HRQoL, suggesting poor health from the patient's point of view (Wong, et al., 2021). Stroke has far-reaching effects, including a decline in quality of life. This confirms what has been found in the past about the decline in social activity and the problem of fatigue experienced by long-term stroke survivors. A positive association between stroke chronicity and patients' quality of life was also cited from the previous study (Norazlin, 2016).

### **Conclusion**

We hope this study will help rehabilitation researchers and clinicians improve stroke victims' and their families quality of life. Depression symptoms and social support are important in predicting participation restriction and health-related quality of life.

Stroke survivors' participation is typically limited even after they can perform basic daily tasks independently. Reduced activity, job loss, and social/leisure activities are examples of this.

Stroke patients must rely on others to get around because they can no longer walk on their own. When developing treatment and rehabilitation plans, we must emphasize the goal of stroke rehabilitation, which is to improve rehabilitation programs and stroke survivors' lives.



Emotional, mood and psychological well-being best predict the post-stroke quality of life and recovery. Detecting depressive symptoms early improves stroke patients' quality of life. Early detection and treatment of depression could improve patients' lives.

In addressing the recovery and management of chronic illness like stroke, stroke patients must be surrounded by positive social support groups, such as parents, immediate family members, the community, and friends. This will improve the patient's self-management skills throughout the recovery process and quality of life. Social support affects stroke patients' quality of life, according to research. Social support or interactions may unintentionally hinder self-management, according to social support theory (Kaplan & Toshima, 1990).

Due to misconceptions or a lack of understanding, friends and family may behave in unsupportive or inappropriate ways, offer well-intentioned advice that conflicts with self-management recommendations, or directly or indirectly promote unhealthy or maladaptive coping strategies, which can lead to depression and PTSD.

Social support positively affects stroke survivors' quality of life, and family members aid recovery. Social support can influence behaviour by motivating health-promoting activities and therapy compliance, for example. This can change health-related behaviours. Significant others can be a source of positivity and help stroke survivors cope, preventing negative emotions (Kruithof et al., 2013). Stress-buffering is another explanation. Indirectly, social support from family, friends, and relatives may help the patient adapt to stress, reducing the risk of complications and speeding recovery during rehabilitation (Kruithof et al., 2013).

Social support's effects or mechanisms may vary by illness or self-care behaviour. Complex regimens are likely to cause stress, and complex behaviours are more susceptible to self-efficacy. Diet-related self-care tasks may be more influenced by social networks than medication-taking. Social support's effect on emotional well-being may be helpful for tasks that deteriorate during psychological distress.

According to the studies, stroke also affects quality of life. Physical health improved after treatment, but mental health remained poor. Studies suggest that assessing the effectiveness of medical stroke rehabilitation by focusing on stroke patients' subjective well-being, or life satisfaction, is important. Psychosocial factors (PSF) have a major impact on stroke for many reasons. Psychosocial factors include depression and social support. Three months after a stroke, functionally independent patients still struggle with social participation, depression, job adaptation, and driving (Lai et al., 2002). Social, cultural, and geographic factors may have different effects in different parts of the world, so psychosocial study results should be interpreted carefully.

Lastly, the table below summarises the value and significance of this study, as well as its contribution both theoretically and contextually.

Conclusion	Remarks
Importance and significance of this study	<ul style="list-style-type: none"> <li>• Identifying areas of participation most severely impacted to be able to provide valuable information to aid in rehabilitation and treatment.</li> <li>• Encourage early detection of initial phase of post-stroke depression among stroke patients.</li> <li>• Ability to maintain and enhance the recovery progress during</li> </ul>

	<p>rehabilitation which focus on built-in social community treatment plans.</p>
<p>Contribution (theoretical and contextual research)</p>	<ul style="list-style-type: none"> <li>• Limited study in Malaysia which had explored the role of comprehensive factors on participation restriction and psychosocial factors on health-related quality of life (HRQoL) status among stroke patients.</li> <li>• Through this study, author may be able to explore the constant debate on the role of social support as a “buffer” or moderator of the negative psychological and physical impacts of post-stroke events.</li> <li>• Author also able to address the long-term mislook which aspects of patients have been affected mainly by their stroke condition and modify the factors affecting HRQoL in specific dimensions to maximize their health improvement and treatments.</li> <li>• Several topics applied theories, and concepts could be improved, as few studies focused on participation restrictions rather than physical functioning or activity limitations. Future studies may add a theoretical framework to increase theoretical rigor. Most phenomena are explained by one or two theories. New hypotheses can be generated to shed light on many topics.</li> <li>• One theoretical framework can be used for many subjects. Future research can improve the theoretical component. Future research should mix qualitative and quantitative methods. According to the research, questionnaires and interviews were the most common. The approach lacks originality and variety. Thus, creative quantitative research methods can be used. Academics can now choose from many data analysis techniques</li> </ul>

## References

- Amarshi, F., Artero, L., & Reid, D. (2006). Exploring social and leisure participation among stroke survivors: part two. *Int J Therapy Rehabil*, 13:199–207.
- Abubakar, S. A., & Isezuo, S. A. (2012). Health-related quality of life of stroke survivors: Experience of a stroke unit. *International journal of biomedical science: IJBS*, 8(3), 183–187.
- Asberg, K. H., & Wester, P. O. (2004). Risk-Stroke Collaboration. Self-reported depression and use of antidepressants after stroke: a national survey. *Stroke*, 35:936–941.
- Anderson, C. S. (1995). *The Epidemiology of Stroke-Related Disability: Frequency, Patterns and Determinants of Care*. Doctor of Philosophy: University of Western Australia.
- American Psychiatric Association. (1987). *Diagnostic and Statistical Manual of Mental Disorders: DSM-III-R*. Washington, DC: American Psychiatric Association.
- Burton, C. R. (2000). Living post-stroke: a phenomenological study. *J Adv Nursing*, 32:301–309.
- Carod-Artal, J., Egido, J. A., Gonza'lez, J. L., & de Seijas, E. V. (2000). Quality of life among stroke survivors evaluated 1 year after stroke. *Stroke*, 31:2995–3000.
- D'Alisa, A., Baudo, S., Mauro, A., & Miscio, G. (2005). How does stroke restrict participation in long-term post-stroke survivors? *Acta Neuologica Scandinavica*, 112:157–162.
- Desrosiers, J., Bourbonnais, D., Noreau, L., Bravo, G., Rochette, A., & Bourget, A. (2005). Participation after a stroke compared to normal aging. *J Rehabil Med*, 37:353–357.
- Dąbrowska-Bender, M., Milewska, M., Gołębek, A., Duda-Zalewska, A., & Staniszevska, A. (2017). The Impact of Ischemic Cerebral Stroke on the Quality of Life of Patients Based on Clinical, Social, and Psychoemotional Factors. *Journal of Stroke and Cerebrovascular Diseases*, 26(1), 101–107. doi:10.1016/j.jstrokecerebrovasdi.
- Dhamoon, M., Moon, Y., Paik, M., Boden-Albala, B., Rundek, T., Sacco, R. L., & Elkind, M. S. V. (2010). Quality of life declines after first ischemic stroke: The Northern Manhattan Study. *Neurology*, 75(4), 328–334.
- Dowswell, G., Lawler, J., Dowswell, T., Young, J., Forster, A., & Hearn, J. (2000). Investigating recovery from stroke: a qualitative study. *J Clin Nursing*, 9:507–515.
- Egger, M., Davey, S. G., & Altman, D. G. (2001). *Systematic Reviews in Health Care: Meta-Analysis in Context*, 2nd Ed. London: BMJ Publishing Group.
- Go, A. S., Mozaffarian, D., Roger, V. L., Benjamin, E. J., Berry, J. D., Blaha, M. J., ... & Turner, M. B. (2014). Heart disease and stroke statistics—2014 update: a report from the American Heart Association. *Circulation*, 129(3), e28-e292.
- Hackett, M. L., Yapa, C., Parag, V., & Anderson, C. S. (2005). Frequency of depression after stroke: a systematic review of observational studies. *Stroke*, 36:1330–1340.
- Hartman-Maeir, A., Soroker, N., Ring, H. L., Avni, N., & Katz, N. (2007). Activities, participation, and satisfaction one-year post-stroke. *Disabil Rehabil*, 29:559–566.
- Hackett, M. L., & Pickles, K. (2014). Part I: frequency of depression after stroke: an updated systematic review and meta-analysis of observational studies. *Int J Stroke*, 9:1017–1025.
- Haywood, K., Garratt, A., & Fitzpatrick, R. (2005). Quality of life in older people: A structured review of generic self-assessed health instruments. *Quality of Life Research*, 14(7), 1651–1668.
- Herrmann, N., Black, S. E., Lawrence, J., Szekely, C., & Szalai, J. P. (1998). The Sunnybrook Stroke Study: a prospective study of depressive symptoms and functional outcome. *Stroke*, 29:618–624.

- Hopman, W. M., & Verner, J. (2003). Quality of life during and after inpatient stroke rehabilitation. *Stroke*, 34:801–805.
- House, A., Dennis, M., Mogridge, L., Warlow, C., Hawton, K., & Jones, L. (1991). Mood disorders in the year after the first stroke. *Br J Psychiatry*, 158:83–92.
- Kim, J. S., Choi, S., Kwon, S. U., Seo, Y. S. (2002). Inability to control anger or aggression after stroke. *Neurology*, 58:1106–1108.
- Kim, P., Warren, S., Madill, H., & Hadley, M. (1999). Quality of life of stroke survivors. *Qual Life Res*, 8:293–301.
- Kielbergerova, L., Mayer, O., Vanek, J., Bruthans, J., Wohlfahrt, P., & Cifkova, R. (2015). Quality of life predictors in chronic stable post-stroke patients and prognostic value of SF-36 score as a mortality surrogate. *Translational Stroke Research*, 6(5), 375–383. doi:10.1007/s12975-015-0418-6.
- Kruithof, W. J., van Mierlo, M. L., Visser- Meily, J. M. A., van Heugten, C. M., & Post, M. W. M. (2013). Associations between social support and stroke survivors' health-related quality of life—A systematic review. *Patient Education and Counseling*, 93(2), 169–176. doi:10.1016/j.pec.2013.06.003
- Theeke, L., Lucke-Wold, A. N., Mallo, J., & Horstman, P. (2017). Life after stroke in appalacia. *Int J Nurs Sci*, 4:105–111.
- Liesbet, D. W., PeteR, T., EddY, D., Stefanie, D., Andreas, R. G., Eric, K., Birgit, S., Wilfried, S., & Koen, P. (2017). Long-term impact of stroke on patients' health-related quality of life. *Disability and Rehabilitation*, 39(14), 1435-1440. Doi: 10.1080/09638288.2016.1200676.
- Mackenzie, A., & Chang, A. (2002). Predictors of quality-of-life following stroke. *Disability and Rehabilitation*, 24(5), 259–265.
- Min, K. B., & Min, J. Y. (2015). Health-related quality of life is associated with stroke deficits in older adults. *Age Ageing*, 44:700–4.
- Montgomery, S. A., & Asberg, M. (1979). A new depression scale designed to be sensitive to change. *Br J Psychiatry*, 134:382–389.
- Murray, C. D., & Harrison, B. (2004). The meaning and experience of being a stroke survivor: an interpretive phenomenological analysis. *Disabil Rehabil*, 26:1000–1011.
- Naess, H., Lunde, L., & Brogger, J. (2012). The effects of fatigue, pain, and depression on quality of life in ischemic stroke patients: the Bergen Stroke Study. *Vasc Heal Risk Manag*, 8:407–13.
- Nor, A. M., Saperi, S., Syed, M. A. (2016). Functional limitation and health-related quality of life, and associated factors among long-term stroke survivors in a Malaysian community. *Med J Malaysia*, 71:313–21.
- Padua, L., Caliandro, P., Tonali, P. (2003). Quality of life during and after inpatient stroke rehabilitation. *Stroke*, 34: e180– e181.
- Rochette, A., Desrosiers, J., Bravo, G., St.-Cyr/Tribble, D., & Bourget, A. (2007). Changes in participation after a mild stroke: quantitative and qualitative perspectives. *Top Stroke Rehabil*, 14:59–68
- Rittman, M., Boylstein, C., Hinojosa, R., Hinojosa, M. S., Haun, J. (2007). Transition experiences of stroke survivors following discharge home. *Top Stoke Rehabil*, 14:21–31.
- She, R., Yan, Z., Hao, Y., Zhang, Z., Du, Y., Liang, Y., ... Qiu, C. (2021). Health-related quality of life after first-ever acute ischemic stroke: associations with cardiovascular health metrics. *Quality of Life Research*, 30(10), 2907–2917. doi:10.1007/s11136-021-02853-x.

- Schindel, D., Schneider, A., Grittner, U., Jöbges, M., & Schenk, L. (2019). Quality of life after stroke rehabilitation discharge: a 12- month longitudinal study. *Disability and Rehabilitation*, 1– 10. doi:10.1080/09638288.2019.1699173.
- Sprangers, M. A. G., de Regt, E. B., & Andries, F. (2000). Which chronic conditions are associated with better or poorer quality of life? *J Clin Epidemiol*, 53:895–907.
- Kim, P., Warren, S., & Madill, H. (1999). Quality of life of stroke survivors. *Qual Life Res*, 8:293–301.
- Sudlow, C. L. M., & Warlow, C. P. (1996). Comparing stroke incidence worldwide. What makes studies comparable? *Stroke*, 27:550–558.
- Thayabaranathan, T., Andrew, N. E., Kilkenny, M. F. (2018). Factors influencing self-reported anxiety or depression following a stroke or TIA using linked registry and hospital data. *Qual Life Res*, 27:3145–55.
- Van Mierlo, M. L., van Heugten, C. M., Post, M. W. M. (2016). Quality of life during the first two years post-stroke: the Restore4Stroke Cohort Study. *Cerebrovasc Dis*, 41: 19–26.
- Visser, M. M., Heijenbrok-Kal, M. H., Spijker, A. V. (2015). Coping, problem-solving, depression, and health-related quality of life in patients receiving outpatient stroke rehabilitation. *Arch Phys Med Rehabil*, 96:1492–8.
- Wan-Fei, K., Syed, H. S. T., & Munn, S. L. (2017). Depression, anxiety and quality of life in stroke survivors and their family caregivers: a pilot study using an actor/partner interdependence model. *Electron Phys*, 9:4924–33. doi:10.19082/4924.