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Research Article

Association of work rehabilitation questionnaire self-report (WORQ) and stroke specific quality of life scale (SS-QoL) in chronic stroke survivors – cross sectional study

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ABSTRACT

Background: Ever increasing disability of stroke and it overall qualities of life has direct impact on work rehabilitation and return to meaningful life in chronic stroke survivors. Both SSQoL and WORQ scores were affected in the negative side in chronic stroke survivors, but there are limited available sources explain the association between these two valid and reliable stroke outcome measures. Aim of this study: This study aims to correlate the association between SSQoL and WORQ in chronic stroke survivors.

Methods: A cross sectional study was done with 255 chronic stroke survivors (112 males, 113 females) with ischemic (194) and hemorrhagic (61) stroke participants who fulfils the criteria of selection to analyse the relationship between SSQoL and WORQ in them. After demographic was taken, outcome measures of SSQoL and WORQ overall scores were recorded for data analysis.

Results: Correlation between outcome measures SSQoL and WORQ was done by Spearman's correlation test. Results show high statistically significant negative correlation between SSQoL and WORQ with Spearman's rho values of -0.896 with p≤0.01 and 99%. CI.

Conclusion: This study concluded that there was highly negative correlation between SSQoL and WORQ in chronic stroke survivors and it provides meaningful outputs into how stroke rehabilitation focusing on work rehabilitation.

Keywords: Stroke Specific Quality of Life Scale (SSQoL), Work Rehabilitation Questionnaire (WORQ), chronic stroke survivors, cross sectional study.

Introduction:

Stroke is a leading cause of death and disability worldwide. Globally, 25% of adults above 25 years will have a stroke in their lifetime. 6.5 million out of 12 million people worldwide will have their first stroke will die as a result of stroke progress and complications. For stroke survivors the impact can be devastating affecting physical mobility, eating, speech and language, emotions and thought processes and return to work. These complex needs can result in care and financial challenges for the individual and for their caregivers, as well as placing significant demands on health and social welfare provision.[1]
Incidence of stroke is ever increasing in India like low - and middle-income countries, often where healthcare

providers find it more challenging to provide the care that is needed for effective prevention, treatment and rehabilitation of stroke.[2] The global economic impact of stroke currently represents 0.66% of Global GDP and the total cost of stroke is estimated to one trillion dollars by 2030. In the span of last 40 years, the incidence of stroke in low- and middle-income countries has more than doubled. With the improvement in healthcare, more people survive stroke and then have to cope with the negative physical, psychological, social, and functional sequelae.[2]

Even in 2024, the prevalence of stroke remains a significant health concern globally. In the United States, stroke prevalence is estimated to impact approximately 3.7% of adults, contributing to substantial morbidity and mortality. Stroke prevalence globally has shown that nearly 80% of all stroke cases occur in regions with lower healthcare access, underscoring disparities in healthcare availability and stroke prevention efforts.

The importance of performing a comprehensive assessment of the overall QOL in post-stroke patients lies in identifying different aspects of patient's functionality; including mental, social and mobility aspects that are affected by the stroke. Since QOL in post-stroke patients evaluated using SS-QOL has not been studied yet in terms of other variables such as recurrence of stroke, degree of physical disability, comorbitities, and risk factors. The overall and domain-specific of QoL in post-stroke patients using the SSQoL scale was used to identify variables that may affect the quality of life after stroke. Subsequently, managing these aspects with the help of rehabilitation programs by multidisciplinary teams, will result in healthier outcomes in terms of therapeutic efficacy and, improvement in patients' psychosocial aspects and satisfaction.[4]

Stroke survivors often face significant challenges in returning to work, primarily due to physical, cognitive, and emotional impairments. Evaluating both work-specific functioning through WORQ and quality of life (using SS-QoL) allows for a more comprehensive understanding of the factors that impact work readiness and return to work.[3]

WORQ is a self-report questionnaire that evaluates the impact of various physical, mental, and social functional limitations on work capacity. It covers areas such as mobility, self-care, and communication, crucial for assessing rehabilitation needs in stroke survivors. While WORQ was initially designed as a questionnaire to detect and understand problems in work-related functioning from the client's perspective, the findings of this study suggest that WORQ may also be used to measure reliable change in work-related functioning of individuals and groups.[5] The WORQ demonstrated good reliability and satisfactory validity in assessing work-related functioning in individuals These findings support its use as a comprehensive tool for evaluating psychological, physical, and cognitive limitations. However, varied diagnostic performance in physical functioning items and potential floor effects suggest cautious interpretation in diverse clinical settings.[6]

Understanding the associations between work rehabilitation needs and quality of life can help guide personalized rehabilitation interventions aimed at improving life satisfaction and social reintegration in stroke survivors. Results of this research may inform healthcare providers about the critical domains to target in rehabilitation for maximizing functional recovery and quality of life. Investigating the association between WORQ and SSQoL in chronic stroke survivors has the potential to reveal meaningful insights into how rehabilitation focusing on work-related capacities can influence quality of life, providing a basis for more targeted and impactful interventions in stroke rehabilitation.

Thus this study could explore whether higher scores on WORQ and SSQoL predict better return-to-work outcomes, providing a basis for targeted rehabilitation strategies.

Aim of this study:

This study aims to correlate the association between SSQoL and WORQ in chronic stroke survivors.

Objectives of this study:

- To determine the correlation between work rehabilitation outcomes (measured by WORQ) and quality of life in chronic stroke survivors (measured by SSQoL).
- To understand how functional abilities, such as those required for work, influence perceived quality of life in individuals who have experienced a stroke.

Research hypothesis of this study: Higher levels of functional ability and work-related capacity (indicated by WORQ) will be positively correlated with better quality of life scores (as per SS-QoL).

Methodology:

This cross-sectional study was done to assess both WORQ and SS-QoL scores in a single instance, providing insights into how these dimensions are associated with each other in the chronic phase of stroke recovery. After getting ethical approval for this study from Srinivas University Ethical Committee (17/Physiotherapy/2023), 255 participants were recruited through convenient sampling in this study. Sample size was calculated by using G power 3.1 version test. This study was carried in various stroke neuro rehabilitation centres in and around Madurai, Dindigul and Tirunelveli Districts of Tamilnadu. This study was conducted from September 2023 to March 2024.

Chronic stroke survivors of both ischemic and hemorrhagic after 6 months post stroke, aged 50 to 70, both

male and female subjects, MMSE – mini mental state examination score of more than 28, with linguistic understanding of English and Tamil languages to understand verbal descriptions and commands were included in this study.

Participants with other severe systemic diseases like coronary artery disease, myocardial infarction, psychological and cognitive disorders were excluded from this study. Written signed informed consents were taken for all participants in this study. This study followed the ethical guidelines of declaration of Helsinki 2013 for human subjects.

After recruitment of participants, their demographic data were recorded included age, sex, BMI and their clinical conditions of stroke. Investigator who has BPT after 3 years of graduation took scoring of outcome measures of this study of SSQoL English original version and WORQ original English version. SSQoL and WORQ outcome measures were recorded for data analysis.

Data Analysis:

Normality of data was checked by Komologrov Smirnov test. Demographic data of study participants were presented with frequency and descriptive data. Correlation between outcome measures of SSQoL and WORQ was done with non parametric Spearman's correlation test. Statistical analysis was done with IBM spss version 25.0 for windows. p≤0.01 and 99% confidence interval was kept to address statistical significance.

Results:

Data was not normally distributed. Demographic data of 255 study participants were reported with frequency and descriptive statistics (see table 1). Descriptive statistics of outcome measures SSQoL and WORQ were expressed in Median (IQR) as data were not normally distributed. (see table 2). Correlation between outcome measures SSQoL and WORQ was done by Spearman's correlation test. Results show high statistically significant negative correlation between SSQoL and WORQ with Spearman's rho values of -0.896 with p≤0.01 and 99%. CI (Confidence Interval). (see table 3)

Table 1: Socio-demographic and clinical characteristics of stroke survivors (n = 255)

Characteristics	**Chronic Stroke Survivors (n = 255)**
	n (%)
Age(mean ± SD)in years	59.21 ± 12.45
Male	142 (55.67%)
Female	113 (44.33%)
Urban	108 (42.35%)
Rural	147 (57.65%)
Uneducated	34 (13.33%)
Primary school	124 (48.62%)
Secondary school	22 (08.6%)
Tertiary (college & above)	77 (30.19%)
Hindus	176 (69.01%)
Orthodox Christian	43 (16.86%)
Muslim	24 (09.41%)
Protestant	7 (02.75%)
Catholic	2 (0.07%)
Single	25 (09.80%)
Married	177 (66.67%)
Divorced	8 (03.13%)
Widowed	25 (09.80%)
Farmers	83 (32.54%)
Employed	26 (10.19%)
Retired	28 (10.98%)
Small Business	33 (12.94%)
Others	85 (33.33%)
Hypertension	125 (49.02%)
Diabetes mellitus	80 (31.37%)
Uncompromised Heart problems	32 (12.55%)
Others	18 (07.05%)
Stroke Right	136 (53.33%)
Stroke Left	119 (46.67%)
Ischemic	194 (76.07%)
Hemorrhagic	61 (23.93%)
Stroke duration (month) mean ± SD	27.6 ± .7.24

SD – standard deviation

Table 2: Descriptive statistics of outcome measures SSQoL and WORQ scores.

Outcome Measures	Median (IQR)
SSQoL	135 (16)
WORQ	80 (13)

IQR – Inter Quartile Range

Table 3: Correlation between SSQoL and WORQ scores by Spearman's rho test

Correlations				
			SSQoL	**WORQ**
Spearman's rho	SSQoL	Correlation Coefficient	1.000	**-.896****
		Sig. (2-tailed)	.	**.000**
		N	255	255
	WORQ	Correlation Coefficient	-.896**	1.000
		Sig. (2-tailed)	.000	.
		N	255	255
**. Correlation is significant at the 0.01 level (2-tailed).				

Discussion:

Data analysis of this study shows that there was statistically significant highly negative correlation between outcomes of SSQoL and WORQ scores with Spearman' rho values of 0.896 and p≤0.01. This study results confirmed that there were high scores in WORQ which demonstrate the work rehabilitation and return to work of chronic stroke survivors when it was correlated with SSQoL scores which are low or vice versa.

Both SSQoL[8-11] and WORQ[3,12-14] were highly valid and reliable questionnaires in various languages and original English version which explain the overall quality of life in stroke survivors and return to work and work rehabilitation respectively. Even though stroke patients are recovering from neuro muscular related complications better in terms of their ambulation and physical activities of daily living, their psychosomatic and emotional parts of life which are affected most is reflecting this study results.

12 domain SSQoL scores ranges from minimum 49 to maximum 245, with higher scores indicating better quality of life, whereas overall maximum score of WORQ is 100, with higher score in WORQ indicates high work disability. This study statistics show that the median (IQR) was 135 (16) for SSQoL whereas 80 (13) for WORQ. This outcomes of this study reflects chronic stroke survivors are having moderate scores of SSQoL had greater difficulty in return to work. The higher median (IQR) values of WORQ are stating that the great challenges universally chronic stroke survivors facing.[15,16]

Published literatures are reporting that chronic stroke survivors irrespective of their type of stroke ischemic or hemorrhagic were having low to moderate SSQoL scores.[17-19] That limits their social activities participation, hampered psycho-social and emotional life. As like that their return to work and relevance and contribution in their family are negatively creeping.[20,21] This study results are exactly reflecting this trends in return to work of chronic stroke survivors with increased mean (IQR) score in WORQ and their negative association with SSQoL.

Limitations: This study is only an observational cross sectional study which gives the relationship of two outcomes of SSQoL and WORQ in chronic stroke survivors. Heterogeneity of participants did not help us to get psychosomatic and clinical specific correlations between SSQoL and WORQ is chronic stroke survivors.

Future recommendations: Longitudinal prospective cohort can be done on SSQoL and WORQ related and functional outcomes in chronic stroke survivors. Clinical condition specific association studies can be performed like in only ischemic stroke or hemorrhagic stroke.

Conclusion:

This study concluded that there was highly negative correlation between SSQoL and WORQ in chronic stroke survivors and it provides meaningful outputs into how stroke rehabilitation focusing on work rehabilitation and return to work capacities which may have positive effects on overall quality of life, and that give a basis for more meaningful and impactful interventions in chronic stroke survivors.

References:

1. Guyatt GH, Feeny DH, Patrick DL. Measuring health-related quality of life. Annals of internal medicine. 1993 Apr 15;118(8):622-9.
2. Opara JA, Jaracz K. Quality of life of post–stroke patients and their caregivers. Journal of medicine and life. 2010 Aug 8;3(3):216.
3. Finger ME, Selb M, De Bie R, Escorpizo R. Using the International Classification of Functioning, Disability and Health in physiotherapy in multidisciplinary vocational rehabilitation: a case study of low back pain. Physiotherapy Research International. 2015 Dec;20(4):231-41.

4. Alotaibi SM, Alotaibi HM, Alolyani AM, Dali FA, Alshammari AK, Alhwiesh AA, Gari DM, Khuda IK, Vallabadoss CA. Assessment of the stroke-specific quality-of-life scale in KFHU, Khobar: A prospective cross-sectional study. Neurosciences Journal. 2021 Apr 1;26(2):171-8.
5. Ramos-Lima MJ, Brasileiro ID, Lima TL, Braga-Neto P. Quality of life after stroke: impact of clinical and sociodemographic factors. Clinics. 2018;73:e418.
6. Husmann A, Escorpizo R, Finger ME. Examining work-related functioning in a physical therapy outpatient clinic: validity and reliability of the Work Rehabilitation Questionnaire (WORQ). Journal of occupational rehabilitation. 2020 Jun;30(2):156-66.
7. Hansen A, Lauridsen HH, Escorpizo R, Søgaard K, Søndergaard J, Schiøttz-Christensen B, Mortensen OS. Reliability and Construct Validity of the Work Rehabilitation Questionnaire Domains in Patients with Persistent Low Back Pain. Journal of Occupational Rehabilitation. 2024 Nov 8:1-1.
8. Pedersen SG, Heiberg GA, Nielsen JF, Friborg O, Stabel HH, Anke A, Arntzen C. Validity, reliability and Norwegian adaptation of the Stroke-Specific Quality of Life (SS-QOL) scale. SAGE open medicine. 2018 Jan 6;6:2050312117752031.
9. Silva SM, Corrêa FI, Pereira GS, Faria CD, Corrêa JC. Construct validity of the items on the Stroke Specific Quality of Life (SS-QOL) questionnaire that evaluate the participation component of the International Classification of Functioning, Disability and Health. Disability and Rehabilitation. 2018 Jan 16;40(2):225-31.
10. Cruz-Cruz C, Martinez-Nuñez JM, Perez ME, Kravzov-Jinich J, Ríos-Castañeda C, Altagracia-Martinez M. Evaluation of the stroke-specific quality-of-life (SSQOL) scale in Mexico: a preliminary approach. Value in health regional issues. 2013 Dec 1;2(3):392-7.
11. Ewert T, Stucki G. Validity of the SS-QOL in Germany and in survivors of hemorrhagic or ischemic stroke. Neurorehabilitation and neural repair. 2007 Mar;21(2):161-8.
12. Husmann A, Escorpizo R, Finger ME. Examining work-related functioning in a physical therapy outpatient clinic: validity and reliability of the Work Rehabilitation Questionnaire (WORQ). Journal of occupational rehabilitation. 2020 Jun;30(2):156-66.
13. Finger ME, Wicki-Roten V, Leger B, Escorpizo R. Cross-cultural adaptation of the Work Rehabilitation Questionnaire (WORQ) to French: a valid and reliable instrument to assess work functioning. Journal of occupational rehabilitation. 2019 Jun 1;29:350-60.
14. Finger ME, Escorpizo R, Tennant A. Measuring work-related functioning using the Work Rehabilitation Questionnaire (WORQ). International journal of environmental research and public health. 2019 Aug;16(15):2795.
15. Yousef HA, Khalil HW, Nazzal MS, El-Salem KI, Hawamdeh ZM, Almeida P. Prevalence and predictors of return to work among stroke survivors in Jordan. Work. 2020 Jan 1;67(4):817-27.
16. Olaoye OA, Soeker SM, Anthea R. Predictors of return to work among stroke survivors in south-west Nigeria. Hong Kong Journal of Occupational Therapy. 2021 Jun;34(1):13-22.
17. Chou CY. Determinants of the health-related quality of life for stroke survivors. Journal of Stroke and Cerebrovascular Diseases. 2015 Mar 1;24(3):655-62.
18. Mahran SA, Abdulrahman MA, Janbi FS, Jamalellail RA. The health-related quality of life in stroke survivors: clinical, functional, and psychosocial correlate. Egyptian Rheumatology and Rehabilitation. 2015 Oct;42:188-95.
19. Rajan B, Pruthvish S, Lalitha K, Tyloth M, Murthy NS. Assessment of quality of life among stroke survivors: A longitudinal study. Int J Community Med Public Health. 2019 Mar;6(3):1316-23.
20. Ntsiea MV, Van Aswegen H, Lord S, Olorunju S S. The effect of a workplace intervention programme on return to work after stroke: a randomised controlled trial. Clinical rehabilitation. 2015 Jul;29(7):663-73.
21. Edwards JD, Kapoor A, Linkewich E, Swartz RH. Return to work after young stroke: a systematic review. International Journal of Stroke. 2018 Apr;13(3):243-56.