Chettinad Health City Medical Journal
Volume 13, Issue 2 - 2024, Pg. No. 21-25
Peer Reviewed & Open Access Journal

Research Article

Development of a Questionnaire to Assess Factors Affecting Return To Work Post Stroke

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DOI: https://doi.org/10.24321/2278.2044.202424

I N F O

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How to cite this article:
Chitra J, Deeksha. Development of a Questionnaire to Assess Factors Affecting Return To Work Post Stroke. Chettinad Health City Med J. 2024;13(2):21-25.

Date of Submission: 2024-01-07
Date of Acceptance: 2024-05-27

A B S T R A C T

Introduction: Stroke accounts for 42% of cases with mild disability and 43% of cases with moderate disability, hence being one of the primary causes of disability. A successful Return To Work (RTW) post-stroke has been demonstrated to improve the patient's quality of life and a general sense of well-being. The percentage of stroke survivors returning to work varies globally "from 14% to 73%". Due to limited access to health care, education, career opportunities, and social participation, people with disabilities are more likely to become financially and socially dependent. A tool that assesses various factors affecting RTW post-stroke will give insight into limiting dependency and comprehensive vocational rehabilitation in the future. Hence, developing a tool to assess factors affecting RTW post-stroke is essential.

Method: The Return To Work Factors Assessing Questionnaire in Stroke (RTWFAQS) was developed using a multi-step method divided into two phases. Phase I was involved in developing a questionnaire, which included conceptualisation and item generation through the deductive method. Phase II was one round of expert validation of items in the questionnaire and identifying the Content Validity Index (I-CVI).

Results: The I-CVI of the domain was found to be 0.92, which indicates strong content validity.

Conclusion: The RTWFAQS domains may be suitable for the assessment of factors affecting RTW post-stroke based on the results of round one expert validation.

Keywords: Factors, Return To Work, RTWFAQS, Stroke

Introduction

Globally, the prevalence of risk factors for non-communicable disease is changing along with the disease pattern, life expectancy, mortality, causes of death, sociodemographic factors, and population distribution patterns. As per the Global Work Fact Sheet 2022, the annual number of recorded stroke cases is above 12.2 million, with 101 million individuals who have experienced a stroke.[1] "The incidence of stroke in India was 135 per 100,000 patients, with 42% of patients experiencing mild disability and 43% experiencing moderate disability". Evidence has shown that a successful RTW post-stroke improves the quality of life, overall satisfaction, and financial well-being.[2] Not working may entail isolation and negatively impact the affected person's life.[3] Globally, the percentage of stroke survivors who RTW differs between 14% to 73%. According to a study in South India, only 20% of survivors of stroke were successful in returning to work, out of 62% who were

working before the stroke with half changing jobs.[4] The inability to perform everyday activities makes the stroke patient rely on someone to care for them, probably, almost full-time. Due to environmental and psychological variables, stroke survivors have abnormalities in body structure and function and restrictions on their activities.[5] However, depending on the stroke's severity and the affected side, it may be feasible to convert a work impairment into a work capacity. It will be a huge relief for stroke survivors, their close family members, and the community when they are independent and able to contribute economically and socially to the family and the larger community.[5]

General health outcome measures are meant to summarise or recapitulate the results of the majority of health problems among patients and populations. At the same time, disease-specific outcome measures assess the effects of certain diseases on the functional state of patients.[5] The rehabilitation programme will be made easier and the quality of life of the stroke survivors enhanced with a well-validated tool to determine the factors affecting Return To Work (RTW) after the stroke. Hence this study is aimed to develop a tool to assess the work status as well as factors affecting the individual's RTW post-stroke.

Methodology

The study was approved by the Institutional Ethics Board of the Institute of Physiotherapy. The Return To Work Factors Assessing Questionnaire in Stroke (RTWFAQS) was developed using multistep methods, broadly divided into two phases.

Firstly, item development included the following two phases: Phase (I) Identification of the domains and item generation, and Phase (II) Consideration of Content Validity.

Phase I included defining the domain and generating items that could be added as per the review of literature. The domain and item of the questionnaires were developed by the deductive method that is by the literature review on predictors of RTW post-stroke.[6] The factors affecting RTW post-stroke were divided into five domains - work status (D1), work capability (D2), emotional support (D3), psychosocial (D4), and rehabilitation factors (D5). The questionnaire's first domain incorporated both closed-ended and open-ended items, whereas subsequent domains were scored using a 5-point Likert scale and at the conclusion of this domain, the participants were allowed to express any additional factors that were affecting their RTW post-stroke. The questionnaire also had demographic details including the dominant side, type of stroke, the side affected, duration of hospital stays, duration since diagnosis, surgical or medical history, rehabilitation status, and health insurance. Along with these, two scales were incorporated i.e., FIM (Functional Independence Measure) and Modified Kuppuswamy Scale to identify the functional and socio-economic status of the participants.

The 44-item tool was validated by a group of eight members of the expert panel who are experts in neurology physiotherapy with an average experience of at least 10 years. For each item, each expert indicated their choice (to remove, keep, or modify), and provided remarks for the modified items. The evaluation of each item's relevance level was constructed by its corresponding 4-point scale (1: not relevant, 2: somewhat relevant, 3: quite relevant, and 4: highly relevant). Based on the eight expert suggestions, some items were modified and added. The final draft of RTWFAQS with 44 items was generated after the first round of expert validation.[7]

The Content Validity Index (I-CVI), Universal Agreement Calculation (S-CVI/UA), and Averaging Calculation Method (S-CVI/Ave) were computed to indicate the Content Validity of the questionnaire in Phase II.[7]

Results

The questionnaire domain validity was assessed using the (I-CVI) item-level content validity index by 8 experts with a score of 0.92. The scale–level content validity index based on the average method (S-CVI/Ave) and scale-level content validity index based on the universal agreement method (S-CVI/UA) were interpreted with scores of 0.92 and 0.6, respectively using Microsoft Excel 2016.

Relevance scores of 1 (relevance scale 3 or 4) and 0 (relevance scale 1 or 2) were noted. The universal agreement score of 1 was assigned to the item that achieved 100% experts' agreement and 0 where not all experts provided a relevance rating calculated by summing up the relevant rating provided of 1. The I–CVI score was calculated by the expert's agreement divided by the number of experts (Table 1). S-CVI/Ave was calculated by taking an average of I-CVI scores across all items, which gave a total score of 0.92 (Table 2). The S-CVI/UA score was calculated by the average of UA scores across all items, which gave a total score of 0.6.[8]

Table 1.Experts in Agreement and Item Validity Index on the Domains of the questionnaire

Item	Expert 1	Expert 2	Expert 3	Expert 4	Expert 5	Expert 6	Expert 7	Expert 8	Experts in Agreement	I-CVI
D1	1	1	1	1	1	1	1	1	8	1
D2	1	1	1	1	1	1	1	1	8	1
D3	1	1	1	1	1	1	1	1	8	1

ISSN: 2278-2044
DOI: https://doi.org/10.24321/2278.2044.202424

D4	1	0	1	1	1	0	0	1	5	0.6
D5	1	1	1	1	1	1	1	1	8	1

I-CVI: Item validity index

Table 2.Universal Agreement, S-CVI/Ave, and S-CVI/UA Based on Expert Agreement

Item	Experts In Average	I-CVI	UA*
D1	8	1	1
D2	8	1	1
D3	8	1	1
D4	8	0.6	0
D5	8	1	1
-	S-CVI/Ave	0.92	-
-	-	S-CVI/UA	0.6

I-CVI: Item validity index, UA*: Universal agreement, S-CVI/Ave: Scale level content validity index based on the average method, S-CVI/UA: Scale level content validity index based on the universal agreement method

Discussion

To the best of the author's knowledge, this was the first study to develop a questionnaire on the factors affecting stroke survivor's ability to return to work. Along with demographic data, RTWFAQS consisted of 44 items organised into five domains: work status (D1), work capability (D2), emotional support factors (D3), psychosocial factors (D4), and rehabilitation factors (D5). Every domain had both open and close-ended questions, which allowed the participants to identify factors that affect their ability to RTW post-stroke.

The first domain of the questionnaire consisted of a total of 16 questions which were related to the work status of the participant and provided answers to whether the patient had returned to work or not. If the participants had not returned to work, the first five questions answered the present activity level of the participants. If the participants had returned to work, the rest of the questions of the domain would help in identifying the present financial status, work modifications, and type of assistance if it was received. The item in this domain had been added as per the study done to identify "the factors predictive of return to work post-stroke in patients with mild-moderate disability in India".[2]

Successful RTW after a stroke depends on the medical evaluation of fitness for work and the severity, rate, and extent of the disability. Each job has particular requirements regarding various combinations of physical and/ or mental capabilities.[9] In line with this, and according to Lindgren et al., sensorimotor, cognitive, depressive, fatigue, and stroke-related impairments can result in activity limitations and participation restrictions, which affect RTW and the potential to stay working.[10] Understanding how stroke-related impairments affect the work and efficiency of the job was made possible by the Work Capability component of the questionnaire. This domain consisted of a total of six questions related to the ability of the individual to work skillfully as before and provided answers to questions about a person's ability to work, including whether they could continue to do so skillfully or handle a workplace that required multitasking. Workplace requirements apply to each paid and unpaid employment i.e., work carried out by homemakers at home.

The process of RTW is challenging and complex; it includes a large number of stakeholders. According to Nilsson et al., the success of RTW has been associated in a significant way with the support extended by employers and coworkers, in addition to the relationship between the injured employee and their supervisor.[11] In line with a study by Coole et al., the semi-structured interview explored the perspectives and experiences to determine factors associated with successful RTW.[12] This domain included six questions related to emotional support, motivation, knowledge, and involvement of the family members during the recovery phase of the stroke and its impact on RTW. In relevance to this, Greenwood et al., through the review of the qualitative study, described the difficulties, rewards, and strategies for coping associated with providing care for a stroke survivor.[13]

Through the semi-structured interview, Vestling et al. explained the perspectives and experiences of stroke survivors who had returned to work to further aid the RTW process[14] and Gilworth et al. explored the expectations and experiences regarding the RTW process through individual interviews with people at various stages of recovery, particularly among those who had not returned to work[15]. Hence the psychosocial domain was constructed to assess particularly the personal factors that affected a person's RTW. The eight questions in this domain explored the issue of how individual circumstances impacted post-stroke RTW. Through this domain, it will be possible to comprehend the feelings of being unable to work as before, feeling excluded when performing any activities, being dissatisfied at work, and its impact on RTW. It also included questions related to the adjustment of the subject to the workplace or home environment post-stroke.

A systematic review by Wei et al. determined the outcomes of RTW following a stroke in the working age group and concluded that vocational rehabilitation, conventional rehabilitation, or a combination was needed to improve the RTW rates and enhance the quality of life.[16] Before disability

ISSN: 2278-2044
DOI: https://doi.org/10.24321/2278.2044.202424

benefits are introduced, RTW initiatives should ideally start as they may encourage dependency. Due to the waning of effectiveness of RTW programmes over time, the timing of intervention is particularly important. A randomised control trial conducted by Ntsiea et al. showed that workplace intervention comprising workability analyses and workplace visits facilitated RTW.[17] Hence the rehabilitation component assessed the significance of rehabilitation on RTW in post-stroke populations. Rehabilitation and its commencement after the onset of stroke have a vital role in the recovery of the subjects. Thus, the six questions in this domain addressed the effects of rehabilitation facilities on RTW, including their accessibility, length of stay, and stakeholder involvement.

In co-relation with the above studies, the present questionnaire was developed to identify the work status, and factors affecting RTW post-stroke. With the further round of expert validation and psychometric properties assessment, this questionnaire could be used as an outcome measure in the rehabilitation which aids the RTW process of the subjects.

Conclusion

The domains of the RTWFAQS may be suitable to assess the factors affecting post-stroke survivors' RTW based on the first round of expert validation with a content validity index of 0.92. Further studies i.e., one more round of expert validation, face validity, and reliability will be done to assess the questionnaire's psychometric properties.

Acknowledgement

The authors thank all the expert panel who volunteered for the content validity of the study and their cooperation.

Source of Funding: None

Conflict of Interest: None

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ISSN: 2278-2044
DOI: https://doi.org/10.24321/2278.2044.202424