

Ferrans and Powers Quality of Life Index for Spinal Cord Injury: to adapt in local language

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Research

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Abstract

Objective To translate and culturally adapt Telugu version of Quality of Life tool among Spinal Cord Injury patients. **Method** It's a prospective cross sectional study conducted at tertiary neuro centre care hospital. The English version was translated into Telugu by two expert medical professionals and cross checked by three experts in Telugu vocabulary. Nursing students who had good proficiency in reading and writing in English and Telugu languages were chosen for checking tool reliability. Initially English language was administered on satisfaction domain followed by importance domain with one month apart. After two months Telugu version was administered in same way as English version. The reliability analysis was done. **Results** The tool was administered on 50 nursing students. The Cronbach's alpha for satisfaction domain was 0.97 and importance domain was 0.91, indicating excellent reliability. **Conclusion** The Telugu version of QOL tool had excellent reliability. Therefore it can be administered in Telugu language for evaluating the quality of life of people with spinal cord injury.

Introduction

Spinal cord injury (SCI) is a major public health issue. In India, due to rapid advancement in motorization and industrialization the SCI are increasing every year. SCI results in motor and sensory impairment which may be temporary for short time or permanent throughout lifetime depending on the severity of injury and individual factors.^{1,2} Majority of SCI survivors will have permanent non-repairable damage to spinal cord thus they will suffer from secondary complications which will have major effect on their daily activities. Quality of life (QOL) is an important parameter of disabled patient, especially among SCIs. The parameter in QOL includes subjective and objective aspects of injured patient.³ Therefore; evaluating QOL among SCI patients is a challenging issue. The tool has been widely adapted and translated in major languages across the world. As per the census of 2001, the Telugu is a first language of over 74 million people in India. At present, Telugu is a third major language that is spoken in the country. Hence it is very important to have QLI in Telugu language. Thus, there is lack of reliable studies addressing QLI tool in Telugu language. The objective of the present study is to translate and culturally adapt the Ferrans and Powers Quality of Life (QLI), Spinal Cord Injury-III in Telugu language.

Methods

It's a prospective cross-sectional study conducted at the department of Neurosurgery, Narayana Medical College, Nellore. Permission through email was sought from Farren to translate and validate this tool in Telugu language. The study was approved by Institute Ethical Committee. The tool was translated by two medical professionals who were proficient in reading, writing, and speaking of Telugu and English languages. All 37 items of both parts of health quality; satisfaction and importance were translated.^{4,5} The translated items were read by three independent professionals. Independent readers have ensured that the translation in Telugu is accurate and flawless by giving their suggestions. The final draft of Telugu version was finalized after incorporation of suggestions and corrections of readers (attachment I).

Fifty nursing students, well proficient in English and Telugu languages were chosen for the study. The informed written consent was obtained from all the participant. Participants did not receive any incentives for their participation in the study. Two interviewers (not know to each other) administered the tool in English language on all the participants. All standard procedures for administering the tool were followed. The questions of satisfaction and importance domains were administered with one month apart. The Telugu translated questionnaire was administered after 2 months of administering English language. A gap of one month was maintained between administration of satisfaction and importance domain.

Statistical analysis

The data was analyzed with the help of Statistical Package for the Social Science, version 18. The Cronbach's alpha and correlation were calculated for difference between interviewee responses on English and Telugu questionnaire.

Results

The Cronbach's alpha coefficient was calculated for QLI in Telugu language among Telugu speaking population. The domains of satisfaction and importance had a Cronbach's alpha coefficient of ≥ 0.9 , indicating excellent reliability. Table 1 reveals result of the reliability analysis.

Table 1 Reliability table for Quality of Life tool

Ferrans and Powers Quality of Life	No. of items	alpha
Satisfaction domain	37	0.97
Importance domain	37	0.91

Discussion

There are many tools available but none are without limitations. The most accepted and commonly used tools are from developed countries and have been adapted in developing countries in their native languages. Among such tools the Ferrans and Powers Quality of Life (QLI) is very reliable and a valid tool that has been found very comprehensive and applicable in assessing the quality of life in SCI patients.^{3,6} The QLI Spinal Cord Injury - Version III, is a specific version which was specifically designed for spinal cord injury.⁷

The study result reports that satisfaction and importance domains of QLI in Telugu language had excellent internal consistency as reflected by Cronbach's alpha value ($\alpha \geq 0.9$). The intercorrelation between satisfaction and importance domains of QLI in English and translated Telugu language is very high. The result of all the Telugu translated items of tool are all most same as English language, because intercorrelation between the translation and English language is excellent. Hence both the satisfaction and importance domains of QLI in Telugu language have excellent reliability.

A study from Brazil translated QLI for SCI into Portuguese cultural vocabulary and reported that the kappa coefficient was statistically stable of all the items of the tool. ⁸ A study translated QLI in Norwegian version and reported excellent reliability with alpha value of 0.93. ⁹ Various studies have reported internal consistency reliability ranging from 0.73 to 0.93 for health and functioning domains of QLI. ^{10,11} In order to adapt QLI for SCI in the Telugu speaking population their cultured vocabulary was used. Exact translation and substitution of English sentence with same meaning in Telugu was done by expert person. The present study results report that Telugu translated QLI have excellent reliability and can be used among Telugu population.

Conclusion

The Telugu translated Quality of Life Index Spinal Cord Injury - Version III showed that the tool is suitable from satisfaction and importance domain point of view and provides way for easy application to evaluate the QOL among SCI people.

Declarations

- Ethics approval and consent to participate Study was approved by IEC (page:4)
- Consent for publication: Yes
- Availability of data and material: Not Applicable
- Competing interests: None
- Funding: Nil
- Authors' contributions Next page
- Acknowledgements None
- Authors' information (optional) None

	TVS	AKK	NRSB	MJ	RKJ	RL	BVS	AA
Concepts	☐	☐	☐	☐	☐	☐	☐	☐
Design		☐	☐	☐	☐	☐	☐	☐
Definition of intellectual content	☐	☐	☐	☐	☐	☐	☐	☐
Literature search	☐	☐	☐	☐	☐	☐	☐	☐
Data acquisition	☐	☐	NA	☐	☐	☐	☐	☐
Data analysis		☐	☐	☐	☐			
Statistical analysis	☐	☐	☐	☐	NA	☐	☐	☐
Manuscript preparation	☐	☐	☐	☐	☐	☐	☐	☐
Manuscript editing	☐	☐	☐	☐	☐	☐	☐	☐
Manuscript review	☐	☐	☐	☐	☐	☐	☐	☐

References

1. Chiu WT, Lin HC, Lam C, Chu SF, Chiang YH, Tsai SH. Review paper: epidemiology of traumatic spinal cord injury: comparisons between developed and developing countries. *Asia-Pacific journal of public health*. 2010;22:9–18.
2. Rajasekaran S, Kanna RM, Shetty AP. Diffusion tensor imaging of the spinal cord and its clinical applications. *The Journal of bone joint surgery British volume*. 2012;94:1024–31.
3. May LA, Warren S. Measuring quality of life of persons with spinal cord injury: external and structural validity. *Spinal Cord*. 2002;40:341–50.
4. Ferrans CE, Marjorie JP. Quality of Life Index [online]. Available at: <https://qli.org.uic.edu/>.
5. Ferrans CE, Marjorie JP. Ferrans and Powers quality of life index© generic version - III [online]. Available at: <https://qli.org.uic.edu/questionnaires/pdf/genericversionIII/generic.pdf>.
6. Ferrans CE, Powers MJ. [Quality of life index: development and psychometric properties]. *Recherche en soins infirmiers* 2007;32–37.
7. Tulskey DS, Kisala PA, Victorson D, et al. Overview of the Spinal Cord Injury – Quality of Life (SCI-QOL) measurement system. *J Spinal Cord Med*. 2015;38:257–69.
8. Reis PAM, Carvalho ZMdf, Darder T, et al. Cross-cultural adaptation of the Quality of Life Index Spinal Cord Injury - Version III. *Revista da Escola de Enfermagem da USP*. 2015;49:401–8.
9. Rustøen T, Wiklund I, Hanestad BR, Burckhardt CS. Validity and reliability of the Norwegian version of the Ferrans and Powers Quality of Life Index. *Scand J Caring Sci*. 1999;13:96–101.
10. Derick Mussen H. Ferrans And Powers Quality Of Life Index [online]. Available at: <https://www.mussenhealth.us/quality-life/ferrans-and-powers-quality-of-life-index.html>.
11. Kimura M, Silva JVd. Ferrans and Powers quality of life index. *Revista da Escola de Enfermagem da USP*. 2009;43:1098–104.

Appendix

Appendix I

I – Telugu version Ferrans and Powers Quality of Life (QLI), Spinal Cord Injury-III