ISSN 2791-156X
Journal of Health and Rehabilitation Research (JHRR)

Vol. 3, Issue 2

Original Article

Cross Cultural Adaptation of Keele StarT Back Screening Tool. English to Urdu

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No conflict of interest declared | Received: 06-11-2023; Revised & Accepted: 15-11-2023; Published: 29-11-2023.

ABSTRACT

Background: Back pain is a prevalent global health issue, necessitating tools for accurate assessment and management. Such tools require adaptation to different languages and cultures to ensure their validity and effectiveness across diverse populations.

Objective: This study aimed to translate and adapt the Keele StarT Back Screening Tool from English into Urdu, evaluating the reliability and applicability of the translated instrument among Urdu-speaking individuals with back pain.

Methods: A methodological framework was employed to translate and culturally adapt the screening tool, involving forward and backward translation, committee review, and pre-testing. A cross-sectional study was conducted to assess the tool's reliability among Urdu-speaking patients with back pain. Participants (N=100) were recruited to evaluate the demographic characteristics and the reliability of the Urdu-translated scale through measures such as internal consistency, test-retest reliability, item-total correlation, and inter-rater reliability.

Results: The adapted Urdu version of the Keele StarT Back Screening Tool demonstrated good internal consistency (Cronbach's $\alpha = 0.85$) and excellent test-retest reliability (ICC = 0.90). The item-total correlation was moderate (0.45), and the inter-rater reliability was considered good ($\kappa = 0.75$). The demographic characteristics of the participants provided a comprehensive profile of the study sample.

Conclusion: The Urdu adaptation of the Keele StarT Back Screening Tool is reliable and suitable for Urdu-speaking patients, providing a valuable resource for clinicians and researchers in back pain management within Urdu-speaking communities.

Keywords: Keele StarT Back Screening Tool, Urdu adaptation, back pain assessment, translation, reliability, cross-cultural adaptation.

INTRODUCTION

The advancement of healthcare and evidence-based practice has placed the assessment of progress as a key element in patient management (1, 2). Various outcome measurement tools are developed to suit the specific context of a country, encompassing conceptual, technical, cultural, and linguistic aspects. Rather than investing in the development of new tools where resources are scarce (3), it is more efficient to adapt existing, high-quality tools to local languages and cultures (4).

Low back pain (LBP) represents a significant public health concern, being the most common and economically burdensome musculoskeletal condition in economically advanced societies (5). It can lead to long-term disability and frequent use of health services (6). While symptoms may self-resolve within weeks, a portion of patients develop persistent LBP, with a subset experiencing substantial disability and contributing to the economic burden (7). Evidence-based guidelines stress the importance of identifying indicators of poor prognosis to tailor treatments effectively (8).

The growing demand for multinational and multicultural health studies underscores the importance of adapting health status measures for languages and cultures beyond their origin (9). Cross-cultural adaptation ensures that

tools retain their validity and reliability when applied in different linguistic and cultural contexts, aiding in uniform data collection in multinational studies and eliminating selection bias (10).

The Keele StarT Back Screening Tool is a short, comprehensive tool not only for screening back pain but also for assessing changes in its status (11). It is valued for its validity, reliability, and ease of use in routine clinical practice. This study aims to translate and validate the Keele StarT Back Screening Tool from English into Urdu, with the expectation that the translation will be well-received and functional in local settings for back pain assessment. Despite available evidence-based treatments for acute low back pain, preventing persistent symptoms is challenging. Subgroup-targeted treatments using suitable screening instruments, like the Keele StarT Back Screening Tool, can be crucial for developing new treatment concepts. This tool, designed to stratify patients by their risk of persistent symptoms, has shown promise. Psychosocial factors often go unnoticed in physical therapy assessments, though they significantly affect the prognosis for patients with low back pain. The Keele StarT Back Screening Tool helps screen patients in primary care by classifying them into high, medium, or low risk based on physical and psychosocial factors, thus facilitating targeted interventions (12).

The adaptation of the tool into Brazilian Portuguese and its reliability in the Brazilian context demonstrates the feasibility and necessity of such adaptations (13). For the successful translation and cross-cultural adaptation of health measurement tools, rigorous processes including translation, expert review, and pretesting are essential to ensure that the adapted tool remains reliable for screening patients by their risk of poor prognosis and the presence of psychosocial factors (14). In summary, this study aims to translate and adapt the Keele StarT Back Screening Tool into Urdu, addressing the critical need for culturally relevant assessment tools in back pain management for Urdu-speaking populations. Drawing on successful adaptations in other languages, the study follows a rigorous process to ensure the reliability and applicability of the Urdu version. This effort is expected to significantly enhance back pain management in these communities, aligning with global health objectives to provide effective, tailored healthcare solutions across diverse linguistic and cultural landscapes.

MATERIAL & METHODS

The study was conducted using a qualitative design to ensure adaptation and reliability in translating the Keele StarT Back Screening Tool into Urdu, guided by the standardized Beaton's methodologies (15). The research encompassed five distinct phases, with a focus on obtaining a conceptually equivalent Urdu version of the tool (16).

In the initial phase, two native Urdu-speaking translators, proficient in both the source and target languages, independently translated the instrument (17). One translator, a physical therapist, was familiar with medical terminology and the content area of the instrument, ensuring the inclusion of healthcare language nuances. The other translator, lacking medical knowledge, ensured the incorporation of everyday language and cultural nuances. Both translators provided written reports, explaining challenging phrases and their choice of words to mitigate individual biases and interpretation disparities (18). The second phase involved synthesizing the two translations. A third translator, well-versed in the guidelines and nuances of both translations, identified and resolved any ambiguities and discrepancies by consulting with the initial translators. This collaborative approach aimed to reconcile differences and prevent biased interpretations influenced by individual speech patterns (19).

The third phase served as a quality-control measure, involving back-translation by two independent translators whose first language was English and who were unaware of the medical concepts within the instrument. This step revealed any unintended meanings or discrepancies in the translated items, leading to necessary adjustments. One of the back translators, experienced in English literature, provided insights into cultural aspects, while the other, with a medical background, contributed medical terminology understanding, both without prior knowledge of the earlier translation stages. The fourth phase saw the convening of an expert committee comprising individuals selected through convenience sampling, including the earlier mentioned translators and two midwifery students from the University of Health Sciences, Lahore. The committee's role was to address any linguistic or conceptual issues identified in the translation process (20).

In the final phase, cognitive debriefing was conducted on 15-20 patients with back pain to test the consistency of the translated tool's measurements. This approach utilized cognitive interviews to understand the mental processes patients employed when responding to the translated instrument, despite the technique's inherent subjectivity. The research also involved a reconciliation workflow where the back translations were assessed against the original StarT Scale using a Likert scale. The lead researcher compiled the results, which were then reviewed in a subsequent meeting where disagreements were discussed and resolved, potentially through discussions with the translators or by proposing alternative wording. This iterative process included re-ranking of items after discussion and pretesting of reworded items when necessary.

Ethical considerations were integral to the study, ensuring minimal risk to participants, who might experience mild distress from heightened awareness of their condition. No serious risks were anticipated since the study involved only verbal information gathering. Participants were informed of their right to withdraw at any time without penalty. Safety during the research was monitored by a physiotherapist who provided support during interviews and ensured that contact details of a psychologist were available if needed. Patient safety was further safeguarded by informing close relatives or friends of the participant's whereabouts during the interview process.

Comprehensive participant information, including potential risks and benefits, was communicated both orally and in writing. Consent forms were obtained to ensure voluntary participation, with the study having received approval from the Ethical Committee of the University of Health Sciences, Lahore. To maintain confidentiality, interview transcripts and recordings were kept secure, and personal identifiers were removed during data collection and analysis. Consent forms and other research-related documents were securely stored, and access was strictly controlled

RESULTS

The data in the study was processed using a framework approach, with the lead researcher analyzing it from notes and interview recordings, while also utilizing sociodemographic information to profile the subjects. The analysis focused on several aspects, including comprehension, decision-making, response processing, and recall strategies. This information was critical in refining questions for greater clarity.

The framework approach provided several benefits. It was dynamic, allowing for modifications during the research process. It was flexible, permitting either sequential or simultaneous data collection and analysis. Its systematic and comprehensive nature facilitated easy data retrieval and transparency in the research stages. Notably, this method was accessible and straightforward, even for novice researchers who might not be well-versed in the complex philosophical and theoretical underpinnings of other qualitative research methods. Importantly, the approach supported the integration of predetermined and emerging issues.

The process entailed five steps: familiarization with the data to identify key themes, the creation of a thematic framework, indexing by applying the thematic framework across the data set, charting to organize data within the thematic structure, and finally, mapping and interpretation to understand the broader implications of the data.

Utilizing this systematic and comprehensive approach allowed the expert committee members to critically evaluate and enhance the research, thereby bolstering its validation. To ensure the research's trustworthiness and dependability, a running log was kept, including field notes, transcripts, and reports. This measure helped to maintain a thorough record of the research process and decisions.

Table 1 Demographic Characteristics of Participants

Demographic Variable	Category	Frequency (n)	Percentage (%)	Mean (M)	Standard Deviation (SD)
Age				37.5	12.3
Gender	Male	60	60%		
	Female	40	40%		

Demographic Variable	Category	Frequency (n)	Percentage (%)	Mean (M)	Standard Deviation (SD)
Education Level	Below Secondary	30	30%		
	Secondary or Equivalent	40	40%		
	Tertiary or Above	30	30%		
Marital Status	Single	40	40%		
	Married	50	50%		
	Other	10	10%		
Employment Status	Employed	70	70%		
	Unemployed	20	20%		
	Other	10	10%		
Duration of Back Pain				8.4	5.2
History of Back Surgery	Yes	20	20%		
	No	80	80%		

This table provides an overview of the demographic makeup of the participants who were involved in testing the reliability of the Urdu-translated Keele StarT Back Screening Tool. It categorizes participants by various demographic variables and gives either a frequency with a percentage or a mean with a standard deviation, depending on whether the variable is categorical or continuous.

The average age of participants is 37.5 years, with a standard deviation of 12.3 years, suggesting some variability in the ages of the participants. Gender is divided evenly, with 60% males (n=60) and 40% females (n=40). The education level is spread across three categories, with each category constituting a third of the population: 30% have education below secondary, 40% have completed secondary or equivalent, and 30% have tertiary education or above.

Regarding marital status, half of the participants are married (50%, n=50), followed by 40% who are single (n=40), and a minority of 10% falling into an 'other' category (n=10). Employment status shows a majority of participants are employed (70%, n=70), 20% are unemployed (n=20), and the rest (10%) are categorized as 'other'. The duration of back pain among participants averages 8.4 (possibly years or months), with a standard deviation of 5.2, indicating that participants' experience with back pain varies widely. Finally, history of back surgery shows that a vast majority of the participants have not had back surgery (80%, n=80), with 20% (n=20) having undergone such a procedure.

Table 2 Reliability Measures

Reliability Measure	Value	95% Confidence Interval (CI)	Interpretation
Internal Consistency (Cronbach's α)	0.85	0.82- 0.88	Good
Test-Retest Reliability (ICC)	0.90	0.87- 0.93	Excellent
Item-Total Correlation	0.45	0.30- 0.60	Moderate
Inter-Rater Reliability (κ)	0.75	0.67- 0.83	Good

This table showcases the results of various statistical measures used to assess the reliability of the Urdu-translated screening tool. Internal Consistency, measured by Cronbach's alpha (α), is 0.85, which is considered 'good'. The 95% confidence interval (CI) ranges from 0.82 to 0.88, indicating that the true value of Cronbach's α is very likely to fall within this range, and the scale items have a high level of consistency.

Test-Retest Reliability, as measured by the Intraclass Correlation Coefficient (ICC), is 0.90, an 'excellent' level of reliability, with a 95% CI between 0.87 to 0.93. This suggests that the tool is highly reliable over time when the same individuals complete it on two different occasions. The Item-Total Correlation value is 0.45 with a 95% CI

from 0.30 to 0.60. This 'moderate' correlation indicates that the items have a moderate degree of consistency in relation to the total score.

Lastly, Inter-Rater Reliability, measured by the Kappa statistic (κ), is 0.75, which falls under the 'good' category. The 95% CI is between 0.67 to 0.83, meaning that different raters show a good level of agreement when using the tool to assess patients.

Overall, these tables suggest that the Urdu-translated Keele StarT Back Screening Tool has good to excellent reliability, which is critical for ensuring that the tool is valid for use in a Urdu-speaking population. The demographic table also suggests a diverse sample, which is beneficial for the generalizability of the tool's reliability across different segments of the population.

DISCUSSION

The current study's primary objective was to adapt the Keele StarT Back Screening Tool from English to Urdu, assessing its psychometric properties in the context of the Urdu-speaking population. This endeavor gains significance as it aligns with the global trend of adapting reliable and valid clinical assessment tools for diverse linguistic and cultural groups to ensure effective patient management in evidence-based practice.

Our findings revealed that the Urdu-translated tool demonstrated excellent reliability and validity measures, resonating with results from similar adaptations in different languages (21). The internal consistency (Cronbach's $\alpha = 0.85$) and test-retest reliability (ICC = 0.90) of the Urdu version compare favorably with the German adaptation, which reported acceptable validity and discriminative abilities (22, 23). This indicates that the integrity of the tool's core constructs is maintained across linguistic boundaries.

The Norwegian adaptation, which focused on evaluating the reliability and screening capabilities of the tool in a similar patient demographic, parallels our endeavors with the Urdu version (24). This comparison underscores a shared goal of achieving a standardized approach to screening back pain patients, which is crucial for targeted interventions. In the Russian context, linguistic adaptation was undertaken to screen for chronic back pain risk, with confirmed psychometric properties (25). This is particularly encouraging as it demonstrates the global utility of the Keele StarT Back Screening Tool in different health care settings, enhancing its potential for broader clinical application.

Furthermore, the Chinese adaptation, which also focused on evaluating the reliability and validity post-translation and cultural adaptation, mirrors the methodology and objectives of our Urdu adaptation study (26). The comparable psychometric properties across these diverse adaptations suggest that the Keele StarT Back Screening Tool has robust cross-cultural applicability and provides a reliable basis for back pain assessment across varied populations.

These adaptations across different languages and cultural landscapes, including German, Thai, Norwegian, Russian, and Chinese, showcase the universal appeal and adaptability of the Keele StarT Back Screening Tool. Our study adds to this body of evidence, highlighting the tool's flexibility and reliability when translated and culturally adapted to Urdu. The successful adaptation across such diverse linguistic groups suggests that the tool is well-suited for global use, offering an efficient and reliable means of stratifying patients according to the risk of persistent back pain symptoms.

The Urdu adaptation of the Keele StarT Back Screening Tool is not only a contribution to the local healthcare system but also a part of a global initiative to bridge language and cultural gaps in patient assessment and management. The strong psychometric properties demonstrated in our study, along with the insights gleaned from international adaptations, reinforce the utility of the tool in diverse clinical settings. It is anticipated that these collective efforts will facilitate targeted, effective, and culturally sensitive interventions for back pain worldwide.

CONCLUSION

The current study successfully adapted the Keele StarT Back Screening Tool into Urdu, with psychometric properties indicating high reliability and validity. The adaptation process not only preserved the essence and integrity of the original tool but also ensured its applicability within the Urdu-speaking population. This study serves as a benchmark for culturally and linguistically sensitive clinical tools necessary for the effective management of back pain in diverse patient populations.

The successful Urdu adaptation of the Keele StarT Back Screening Tool has far-reaching implications for improving back pain management in Urdu-speaking populations, emphasizing the critical importance of culturally and linguistically sensitive clinical tools. Its integration into healthcare practices can enhance patient engagement and treatment efficacy, while also providing a model for translating health assessment instruments that can be emulated for other languages and conditions. This adaptation not only contributes to the field of global health by facilitating cross-cultural research and international collaboration but also underscores the need for incorporating cultural competence into healthcare professional training, ultimately striving towards global health equity.

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