

Translation and Validation of FLACC scale in Urdu Language

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ABSTRACT

Aim: To translate and validate FLACC scale in Urdu language

Methods: At the Ghurki Trust and Teaching Hospital (GTTH), cross-cultural linguistic validation research using non-probability convenient sampling was carried out for 7 months, from July 2021 to January 2022. Two native Urdu speakers with sound English language understanding, one from medical background and second from educational background translated the English FLACC scale. Two English-certified linguists who did not have access to the English version subsequently reverse-translated these two versions into English. These Urdu translations and back translations were critically analyzed and reviewed by a committee of paediatric physical therapists and paediatric clinical practitioners, and a final Urdu version was prepared. After approval of the final translation, this Urdu FLACC scale was applied in the post-operative paediatric population to assess its validity and reliability. After 2 hours, bilingual subjects were administered the English version, while others were again assessed with the Urdu FLACC scale to check linguistic interchangeability and test-retest reliability. Informed consent was taken and documented as well; this study was approved by the Ethical Review Board of Lahore Medical and Dental College, Lahore, Punjab, Pakistan. SPSS version 26 was used for data entry and as well as analysis. Inter-rater reliability was evaluated by using Intraclass correlation coefficients, which determines the strength of association and measure of chance-corrected agreement. The construct validity of the FLACC tool was evaluated by using ABC of content validation and content Validity Index Calculation.

Results: The mean age and standard deviation of patients was 5.333+1.5599. The ABC of Content Validation Index, which yielded an average proportion of 0.97. The Cronbach's alpha of translated FLACC scale is 0.701 when applied on population. Intraclass correlation coefficient ranged from 0.319-0.701 with acceptable reliability.

Conclusion: The FLACC scale's translated Urdu version shows good validity and reliability.

Key terms: Consolability, Pain, Preverbal population, Validity, Reliability, neonatal ICU

INTRODUCTION

The fifth vital sign, pain, alerts us to a health issue with our body. A painful sensory or emotional experience connected to, or similar to, existing or potential tissue damage is what the International Association for the Study of Pain (IASP) defines as pain. There are many different sorts of pain, and how each person experiences them is unique. According to the National Academy of Sciences (1985), pain and other sensory modalities share many similarities. First, there are distinct pain receptors. These nerve endings, which are found in the majority of bodily tissues, only react to stimuli that are harmful or have the potential to be harmful. Second, the messages started by these painful stimuli are sent to the spinal cord via certain recognized nerves². The main afferent nociceptor is the collective name for the neuron and sensitive nerve ending in the tissue. In the spinal cord, the main afferent nociceptor makes contact with second-order pain-transmission neurons. The brain stem reticular formation, thalamus, somatosensory cortex, and other higher centers get the message from the second-order cells via well-defined channels.

An article on neural correlates of aversive anticipation also shows in a meta-analysis that shows sensory receptors can show aversive activity that can alter the behavior to a stimuli³.

The assessment and prompt and efficient treatment of pain is one of a person's fundamental human rights. To diagnose, recognize, or quantify pain in the paediatric population, however, is difficult for paediatric nurses. Children or patients who are preverbal are unable to express their suffering in a typical subjective way. Children who are preverbal run the risk of having inconsistent pain identification and insufficient pain treatment due to their inability to communicate and measure their discomfort⁴.

There are a range of measures available to assess pain in preverbal kids in order to lessen the difficulties experienced by paediatric nurses and the rehabilitation team and to record pain as soon as possible before any significant issues might emerge. F (face), L (leg), A (activity), C (cry), and C (consolability) are some of them that are often used on the FLACC scale. The FLACC scale assesses behavioral pain in post-surgical children (valid for 2 months to 7 years) who are unable to address their pain. It consists of the five major components mentioned above and a total score of 0–10, with 0 representing no pain

The FLACC scale includes categories of crying, facial expression, posture of the trunk, leg position, motoric restlessness, and consolability, which were reported by Buttner and Finkle to be reliably associated with pain. Previous studies have reported high reliability and validity in assessing acute pain in paediatric patients (5) Some studies also show scores correlated with parent scores (P 0.001) and decreased after analgesics (P 0.001), suggesting good validity⁶. This scale is in wide use all around the world and it is also translated into different languages. However, to this point in time, reliable assessment tools for detecting paediatric pain, such as the FLACC Behavioral Scale, have been unavailable in Pakistani hospitals due to language barriers. Using the cross-cultural translation procedure of the forward and back-translation method of Beaton et al's classification⁷ its major steps are knowledge of the tool, forward translation, screening, backward translation, testing validity and applicability, and conclusion, to translate and validate the new version of the Urdu scale.

Thus, the first and far-most aim of the present study is to translate the FLACC behavioral scale into Urdu. Urdu is the national language of Pakistan, and the majority of almost 189 million of the country's population could easily read, write, and understand it, along with the millions of other individuals scattered worldwide. Translating the FLACC scale into Urdu will not only

Received on 13-04-2023

Accepted on 22-06-2023

DISCUSSION

The purpose of my study was to translate the FLACC scale into Urdu to help preverbal or paediatric patients assess pain. Permission was granted by the University of Michigan to translate the scale for public benefit and educational purposes. We translated this scale by using the forward and backward methods of translation by Beaton classification. As a previous study showed, backward translation is better than direct translation^{12,13}.

After the translation procedure, a content validation procedure was done with the help of 10 physiotherapists. When the scale was successfully translated, a pilot study was conducted, as well as a test retest phase, to determine the scale's efficacy. Some minor revisions were made according to the testing conclusion, and then this scale was applied to a number of 20 children with post-procedural pain in the Ghurki Trust and Teaching Hospital in Lahore, Punjab, Pakistan. The difference between the original and translated versions of the FLACC scale was described by test analysis. The intra-class coefficient resulted in 0.319 for single measures and 0.701 for average measures.

In the original study, the FLACC scale showed a high correlation between observers ($r = 0.92$), while some studies show a diversity from moderate to high reliability. In this study, we showed that our Urdu FLACC scale showed good validity and reliability¹. This study showed a good value of Cronbach's alpha of 0.701 in the testing phase and 0.944 in the validation phase. The original FLACC scale Cronbach's alpha score was 0.882¹⁴. Indonesian version of FLACC scale was tested for cleft palate procedure patients and it showed that the results of the Spearman correlation analysis, was considered to be valid because of the r values of each sub-scale that were higher than the r table value (r value > 0.317). Reliability with Cronbach's alpha value of 0.875, this version of FLACC scale also showed good reliability and validity in children with surgical procedure¹⁵.

In China a study was conducted in post cardiac surgical children to assess their behavior and pain through COMFORT-B and FLACC scale, the study concluded that both scales were very help full in measuring pain and behavioral changes in this vulnerable population¹⁶.

The Greek version of FLACC scale showed high internal consistency with Cronbach's alpha of 0.88¹⁷. Japanese version of FLACC scale showed Cronbach's alpha of 0.735 for low and 0.928 for high pain levels¹⁸. Arabic version of FLACC showed 0.89 value for Cronbach's alpha.

The non-random selection of participants, who were chosen based on their availability during the study period, posed a limitation to this study and may have decreased the generalizability of its findings. Studies from a single Pakistani city were considered in this study. Due to time and budget limitations, this study was limited to the patients of a single hospital because it was intended to be instructional.

CONCLUSION

The FLACC scale's translated Urdu version shows good validity and reliability.

Authorship and contribution Declaration: Each author of this article fulfilled following Criteria of Authorship:

1. Conception and design of or acquisition of data or analysis and interpretation of data.
2. Drafting the manuscript or revising it critically for important intellectual content.
3. Final approval of the version for publication.

4. All authors agree to be responsible for all aspects of their research work

Conflict of interest: Nothing to declare

Funding source: Nil

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This article may be cited as: Omer AK, Waqas S, Tariq M, akram HB, Mughul MW, Faisal S. Translation and Validation of FLACC scale in Urdu Language. *Pak J Med Health Sci*, 2023;17(8):2-4.