ORIGINAL ARTICLE

Cross-Cultural Translation and Validation of Selected Tools to Evaluate Patients Satisfaction Level in Different Pain Management Settings

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Abstract

Background: Pain is the most common reason to seek medical care. Various medical issues can be evaluated by using different validated assessment instruments. The health care providers face methodological issues and problems associated with validated instruments at different clinical settings. to overcome this situation translation is the most common procedure. This study was designed to evaluate the applicability of common clinical evaluation tool after linguistic validation to assess the relation between pain reduction and level of satisfaction in patients with the outcome of pain management. Different tool such as VAS, MISS-21, APS-PQR and PSRS were translated and validated for using in emergency facility, post-operative ward and in chronic low back pain patient at outpatient setting.

Methods: The translation process included synthesis translation, forwardstranslation, backwards translation, reconciliation and pretesting steps. The success of the translation process was evaluated by scoring each item into comparability, similarity of interpretability and understandability, which ranged by Likert scales. The properties of the provincial language versions of the three questionnaires for pain management were relevant and comprehensive. The MISS-21 subscale was used to measure the satisfaction level of the patients with the consultation into four categories, and the results are expressed as the mean±SD. The unpaired t-test was performed. The APS-POQ-R consisted of 23 primary items in which the response was measured as a continuous scale.

Results: The mean value of patient satisfaction with the pain treatment was 7.42(±1.34). The item correlation and reliability (Cronbach's alpha) for all 20 items was 0.85. The PSSS was used to evaluate the satisfaction level in chronic low back pain. The comparison of the pain severity was expressed as the mean±SD, and a paired test was performed, which was significant.

Conclusion: These tools were suitable to assess the relationship between painreduction and level of satisfaction in patients. Adaptation of the translated and validated tools may be beneficial for the research community.

Keywords: Validation scale, Low back pain, Satisfaction, Adaptation

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Introduction

Pain is the third most common health problem and different studies reported that 78% to 86% of patients who attend the emergency department present with pain as the chief complaint and it is poorly managed[1]. In the context of Bangladesh, the burden of acute pain increased due to changes in socioeconomic background, especially urbanization, and the most common causes were road traffic accidents, injuries, history of falls from height and burns or physical assault. Downey and Zun[2] reported a correlation between pain reduction and the level of satisfaction in patients who had presented to the emergency department with pain as their chief complaint. Poorly controlled and unrelieved pain influenced the patients' functional status[3,4].The burden of patients attending the emergency department of any hospital primarily depends on the density of the population of the catchment area. One government medical college hospital situated in any metropolitan city handles more than one thousand patients per day. The emergency physicians manage pain on the basis of their pre-existing knowledge, and there is a possibility of inadequate pain management either due to physicians' lack of knowledge or lack of evidence-based guidelines in the hospital[5–8]. Effective postoperative pain management (POPM) has humanitarian role, but there are additional medical and economic benefits for the rapid recovery and discharge from the hospital[9]. There are no available data providing adequate and comprehensive information about POPM in our country[10,11]. In case of chronic pain, low back pain is the fifth most common reasons for the patients to visit physicians in the USA. The American Pain Society states that Acetaminophen and NSAIDs are the first-line management for chronic low back pain, and multidisciplinary rehabilitations are also crucial for the effective management of such pain[12,13]. This study observed and developed a conceptual validated three different tools to evaluate the existing pain management status, the satisfaction level of the patients with the treatment outcome for pain in the emergency department, postoperative pain and chronic low back pain. The application of the translated and validated tools may be beneficial for the research community to collect the information.

Methods

This was an observational and cross-cultural study. The assessment tools were nominated for translation, and it was important to conduct a literature review to determine whether a previously validated questionnaire existed. The validated tools mentioned that they had been developed to be administered among the proposed respondents. The tools were used in emergency department, postoperative ward and chronic low back pain to collect information from patients.

Assessment tools used for patients:

1. Visual Analog Scale (VAS)[14]
2. Medical Interview Satisfaction Scale (MISS-21)[15]
3. Revised American Pain Society Outcome Questionnaire (APS- POQ-R)[16]
4. Participant Satisfaction Reporting Scale (PSRS)[17]

Study design

The translation and validation of tools were conducted in the following manner:

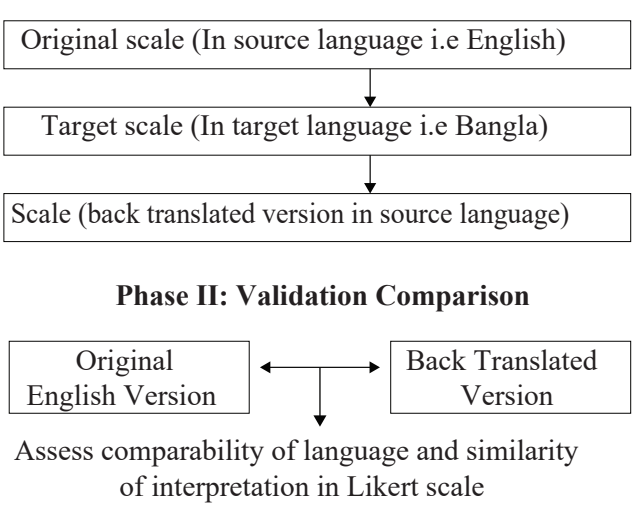

Fig. 1: Flow diagram of the translation(phase 1) and validation (phase 2) process[18–21]

Translation and validation procedurefirst translation

The VAS[14] consisted of a 10 cm long scale labelled from 0 to 10. This scale was translated and validated prior to use in the emergency department, postoperative ward and chronic low back pain management. The MISS-21[15], the APS-POQ-R[16] and the Participant Satisfaction Reporting Scale (PSRS)[17] were translated from the original language (i.e., English) to the target language (i.e., Bangla) by the researcher.

Forward translation

Two forward translations were performed, in which one of the translators was aware of the concepts of how the questionnaire would be translated and the other translator was unaware about the concepts and of nonmedical background.

Synthesis of translation

Synthesis of translation was done from the original questionnaire. A committee was formed of health professionals (Pharmacologists and language professionals) who had translated the tools. Then, a compiled translated version was synthesized for back translation.

Back translation for validation

The back translation of the tools were performed from the target language (i.e., Bangla) to the original language (i.e., English) by another three persons, of which one was Psychiatrist and the others were Pharmacologists. All of them were kept blinded to the original questionnaire. This was the validity checking process to ensure that the translated version reflected the same item content as the original version. Then, the original and back translated english versions were compared. The success of the translation process was evaluated by scoring each item in the two versions in terms of comparability of languages, similarity of interpretability and degree of understandability. For every item, Likert scales ranging from 1 (extremely comparable/similar/ understandable) to 4 (moderately comparable/ similar/understandable) up to 7 (not at all comparable/similar/understandable) were used. Then, the scores obtained were compared between the two versions, and any mean scores greater than 3 were further reviewed by experts. The mean score for each item of the tools were less than 3.

Expert committee endorsement

An expert committee was composed of one with special expertise in Bengali literature, and another Bangla-speaking researcher was included to incorporate adequate expertise in both Bangla and English as well as to have the inputs of nonmedical competent persons. Their active participation was ensured in the review, endorsement and approval process of the Bangla questionnaire before they were used for the study[21].

Pilot study

After expert committee endorsement, the draft version of the questionnaire was offered to the 100 eligible participants for the pilot study. The study was used to identify any problems with language and to assess the degree to which a participant understood each item and coordinated the content that was meant to be produced. The translated VAS was used to measure the severity of pain. The items of the tools were used to measure the satisfaction level of the patients, and the results were expressed as mean± SD. Then, the final translated tools were developed.

Results

Assessment of comparability of language and similarity of interpretation on a Likert scale. The result of each item in the two versions were scored in terms of comparability of languages, similarity of interpretability and degree of understandability. Likert scales ranging from 1 (extremely comparable/similar/understandable) to 4 (moderately comparable/similar/ understandable) to 7 (not at all comparable/similar/understandable) for each item. Then, the two versions were compared, and any mean score greater than 3 needed an official review of the translation. The mean score for each item of the tools was less than 3 (**Table I**).

Medical Interview Satisfaction Scale (MISS 21): The average age of the participants were 32.03 ± 11.65 years; <20 to > 50 years. The number of males were 48, and 52 females were enrolled in the study. The patients who were suffering from acute abdominal pain entered the emergency department.

Table II shows the MISS-21 subscale used to measure the satisfaction level of the patients with the consultation into four categories: distress

relief (with analgesic 6.58 ± 0.46 and without analgesic 6.62 ± 0.46), communication comfort (with analgesic 1.32 ± 0.46 and without analgesic 1.38 ± 0.55), rapport (with analgesic 6.50 ± 0.41 and without analgesic 6.51 ± 0.45) and compliance intent (with analgesic 3.70 ± 0.39 and without analgesic 3.73 ± 0.19). The unpaired t-test was performed, and the result was not significant statistically.

Revised American Pain SocietyOutcome Questionnaire (APS- POQ-R)

This questionnaire was used to evaluate thesatisfaction level with postoperative pain.

Table III provides the mean standard deviations for the 20 primary continuous items. The additional items measured how a nurse or doctors encouraged non pharmacological methods. The participants (n=100) reported that they had not received information about their pain treatment options. The pharmacological methods for the management of postoperative management were documented but are not mentioned here. The APS-POQ-R consisted of 23 primary items in which the response was measured by 0 to 10 NRS, which was treated as a continuous scale. The mean value of patient satisfaction with the pain treatment was 7.42 ±1.34.

Item correlations and reliability

The results of correlations and tests for internal consistency reliability (Cronbach's alpha) for the 20 items showed that a lower score was associated with a more positive response. Reversed scoring was used for items where a higher score was more favorable. Cronbach's alpha for all 20 items was 0.85. The item-to-item correlations for each of the original stem questions were assessed for the magnitude and direction of relationships.

Participants satisfaction reporting scale:

The PSRS questionnaire was used to evaluate the satisfaction level with chronic low back pain. The bar diagram (Figure 2) provides the patient satisfaction level measured by the PSRS score, in which 46 patients were satisfied between 61% and 70%.

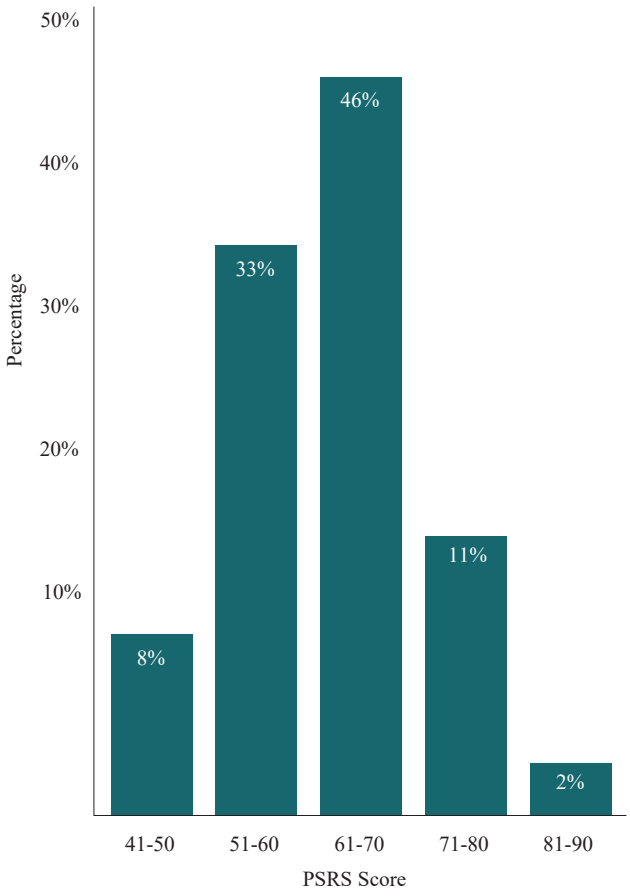

Fig. 2: Patient satisfaction level measured by the PSRS score

The change in pain severity (VAS score) from baseline to one week of treatment was 7.26 ± 0.77, and after 1 week, the mean pain severity was 5.02 ± 0.79. The paired t-test was performed, which was significant **(Table IV)**.

Table I. Medical Interview Satisfaction Scale (MISS)-21

Original English version	Back-translated english version	Comparability of language Mean ±SD	Similarity of interpretability Mean ±SD	Degree of understandability Mean ±SD
The doctor told me just what my trouble is	Doctor asked me about my main complaint	1.75 ± 0.50	1.25 ± 0.50	1.25 ± 0.50
After talking with the doctor, I know just how serious my illness is	After talking to the doctor I was able to understand the severity of my illness	1.25 ± 0.50	1.25 ± 0.50	1.25 ± 0.50
The doctor told me all I wanted to know about my illness	Doctor was able inform me everything about my illness that I wanted to know	1.5 ± 0.57	1.5 ± 0.57	1.25 ± 0.50
The doctor seemed interested in me as a person	Doctor appeared personally interested in my care	2.0 ± 0	2.0 ±0	2.0 ± 0

Table II: Comparison of MISS-21 scores with or without analgesics for abdominal pain management (presented as grouped in subscales)

MISS-21	With analgesic (n=60) Mean ± SD	Without analgesic (n=40) Mean ± SD	P value
Distress relief subscale (DR) (6 items)	6.58 ±0.46	6.62±0.46	0.677ns
Communication comfort subscale (CC) (4 items)	1.32 ±0.46	1.38±0.55	0.538ns
Rapport subscale (R) (8 items)	6.50 ±0.41	6.51±0.45	0.901ns
Compliance Intent subscale (CI) (3 items)	3.70±0.39	3.73±0.35	0.670ns
Overall (21 items)	5.12±0.24	5.15±0.19	0.429ns

Data are expressed as the mean ± SD. P value reached from unpaired t test, *=significant, ns= not significant

Table III: Means and Standard Deviations for Each of the 20 Primary Continuous Items on the Original APS-POQ-R Descriptive Statistics

	N	Min.	Max.	Mean ± SD
In the first 24 hours, how much pain relief did you receive? Please circle the one percentage that best shows how much relief you have received from all of your pain treatments combined (medicine and non medicine treatments)	100	3.00	9.00	7.31±1.28
Were you allowed to participate in decisions about your pain treatment as much as you wanted to?	100	0.00	9.00	2.83±3.08
Circle the number that best shows how satisfied you are with the results of your pain treatment while in the hospitals	100	0.00	10.00	7.42±1.34

Table IV: Comparison of pain severity from baseline to one week (n=100)

	Baseline Mean ± SD	At 1 week Mean ± SD	P value
Pain (VAS score)	7.26 ± 0.77	5.02 ± 0.79	<0.001*

*=Significance of difference P <0.001 (paired t-test)

Discussion

The satisfaction level of the patient in emergency pain management was assessed by MISS-21. The tool was validated prior to use in the study following the standard translation and validation process. The comparability test was done as a part of validation and the result of the test was <3, which was significant and reliable for application in clinical practice. This study also provided the evidence for MISS-21 psychometric properties which suggested that it was a valid and reliable instrument for the assessment of patient satisfaction with pain management in emergency department.

In case of post- operative pain APS-POQ-R was used to assess the patient satisfaction level after cesarean section. The cross-cultural research for validation of this tool was done. The correlation and tests for internal consistency reliability (Cronbach's alpha) for the 20 items were done. For the majority of items a lower score was associated with a more positive response. Reversed scoring was used for items where a higher score was more favorable. Cronbach's alpha for all 20 items was 0.85. The item to item correlations for each of the original stem questions were assessed for the magnitude and direction of relationships. PSRS was used to evaluate the satisfaction level in chronic low back pain.

The purpose of this study was to develop a tool to evaluate the satisfaction with treatment of chronic low back pain, evaluate the reliability and validity of this instrument, and then examine the predictors and consequences of the satisfaction. From the findings of the present study, the validated tools can be used to measure the patients' satisfaction level in different pain management and evidence based practice can be made possible to improve the quality of management.

Conclusion

The properties of the provincial language versions of the VAS scale and three questionnaires for pain management were relevant and comprehensive to collect the information in case of three categories of pain. These tools were suitable to assess the relationship between pain reduction and level of satisfaction in patients. The adaptation of the translated and validated tools may be beneficial for the research community to gather information and improve pain management.

Declaration

Ethics approval:

The study protocol was approved by Institutional Review Board (IRB) of Bangabandhu Sheikh Mujib Medical University.

Author Contributions:

Conception and development of the idea: RA, MP, MSR
Data collection: RA, MP, MSR
Data analysis: RA, MP Writing - Original Draft Preparation: RA, MSR
Review & Editing: RA, MP

Funding: None

Conflict of Intersts: None

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