Original Article

Hindi Translation and Cross-Cultural Reliability and Validity of Patient Satisfaction Questionnaire Short Form (PSQ-18)

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Abstract

Introduction: Patient satisfaction is an important indicator of the overall standard of health care and use of questionnaire in the language comprehended by patients is the method commonly used. This study was done to translate Patient Satisfaction Questionnaire Short Form (PSQ-18) from English to Hindi, and determine cross-cultural reliability and validity of the translated version.

Study Design: Cross sectional.

Material and methods: The PSQ-18 English version was translated to Hindi version by adapting the technique of back to back translation. 100 patients attending the outpatient department of the hospital were subjected to the tool, demographic data collected and scoring of responses was done as per the instructions manual. Cronbach's alpha was calculated to assess internal consistency of the questionnaire.

Results: There was no language or content related problem during translation and the translated version was accepted well by participants with a response rate of 97%. The mean age of the participants was 50.59 years with males and females almost equally represented. The mean total score of the PSQ -18 ranged from 52 to 78. The Cronbach's alpha for the total PSQ 18 translated in Hindi was 0. 445.

Conclusions: The reliability of current Hindi translated version of PSQ-18 was not satisfactory as the Cronbach's alpha was low. As patient satisfaction assessment is important for quality health care, review of the content of the translated construct or development of new tool suitable in our setting should be considered.

Key Words: Patient-satisfaction, Cronbach's alpha, reliability, validity, demographics.

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Introduction

Patient satisfaction has gained its recognition as an important measure to assess the quality of health care all around the world, over last few decades and research has been recommended to establish patient satisfaction as a determinant of quality [1, 2]. However, the definition of patient

care has been related to patient attitude, patient related outcome measures, patient experiences, and how the patient expectations and the services received can be matched and have been studied by researchers but not with conclusive consensus [3]. The assessment of quality of treatment in terms of level of satisfaction in healthcare industry is a critical challenge. The developing countries are also now focusing attention to availability and accessibility of medical care to its citizens and perceiving the need to improve patient satisfaction through improved clinical facilities, behavior of the medical, paramedical and other staff and hospital infrastructure [4]. Physical comfort, emotional support, and respect for patient preferences are the important determinants of patient satisfaction [5]. Efforts are being made to measure the patient satisfaction and to improve the services at public health facilities along with the inclusion of these aspects in the health policy [6, 7]. A patient satisfaction questionnaire (PSQ) was developed in 1976 at Southern Illinois University (SIU) School of Medicine with a goal to develop a short, self-administered satisfaction survey that would be applicable to general population [8]. The original PSQ consisted of 80 items and was developed by Ware and his colleagues [8]. A more recent version of the questionnaire is the PSQ-III. It is a 51-item questionnaire survey that addresses the global satisfaction with medical care as well as satisfaction with six aspects of care: technical quality, interpersonal manner, communication, financial aspects of care, time spent with doctor, and accessibility of care. The PSQ-18 is a short form version that retains many characteristics of its full-length counterpart and substantially correlates with PSQ-III. Where there is a need for short survey and PSQ-III is not feasible to administer, the PSQ-18 may be appropriately used as it takes approximately 3-4 minutes to complete [9]. Various studies have been done in India on patient satisfaction and efforts have been made to develop questionnaires, suitable for local use but there is no translated version of a standard tool, PSQ-18, used across the world to measure the patient satisfaction, in Hindi language, the

national language in India [4]. Tool development needs time and does not allow cross cultural validation of widely used established tools. For upcoming researchers, chances of picking cross cultural differences and developing better tools for use in own country, in own local language, through studies on reliability and validity become available when translation of well documented tools like PSQ -18 are opted for. The objective of this research study was to develop a Hindi translated version of Patient Satisfaction Questionnaire Short Form (PSQ-18) and after translation from English to Hindi to test the cross-cultural reliability and validity of the PSQ-18 (Hindi version).

Material and Methods

This pilot study was conducted at a tertiary care hospital providing charitable super-specialty care in the disciplines of Anesthesiology and Critical Care, Cardiology, Cardio-thoracic and Vascular surgery, Medical and Surgical Gastroenterology, Neurology, Neurosurgery, Ophthalmology, Psychiatry, Pulmonary Medicine, Nephrology, Urology, Oncology and diagnostic and supportive services from Radiology, Pathology, Microbiology and Transfusion Medicine. The study was approved by the Institution Ethics Committee (IEC). The Patient Satisfaction Questionnaire Short Form (PSQ – 18) a short form of PSQ III containing 18 items related to patient satisfaction including general satisfaction (item 3 and 17), technical quality(items 2,4,6,14), interpersonal manner (items 10, 11), communication (items 1,13), financial aspects (items 5,7), time spent with the doctor (items 12,15) and accessibility and convenience (items 8,9,16,18) was used in the study[10]. Ethical approval was taken from IEC and the PSQ-18 was translated after following the guidelines and specifications provided by RAND Health [9]. The translators were briefed on socio-demographic characteristics of target population, mode of administration of the survey instrument, and where the survey will be administered. They were provided with specific instructions about the target language Hindi reading, being aimed for in the translation and widely understood by a variety

Table 1: Demographic Distribution of study subjects

Demographic	Number	Percentage (%)
Age		
1-20 Yr	3	3.1
21-40 Yr	20	20.6
41-60 Yr	50	51.5
61-80 Yr	24	24.7
Mean Age		
Male	51.35 Yr	
Female	49.62 Yr	
Total	50.55 Yr	
Gender		
Male	52	53.6
Female	45	46.4
Marital Status		
Single	5	5.2
Married	91	93.8
Religion		
Hindu	55	56.7
Muslim	38	39.2
Sikh	1	1.0
Jain	2	2.1
Education		
Illiterate	29	29.9
Literate, but no formal education	7	7.2
5th / 8th Pass	21	21.6
10th Pass	13	13.4
12th Pass	16	16.5
Graduate	8	8.2
Post Graduate	2	2.1
Total Subjects	97	100.0%

of speakers in Indian scenario. Before proceeding to translation the translators were provided with original language (English) survey instrument in order to review to identify items, terms or concepts that are difficult to translate. Forward – backward – forward translation from English language to Hindi language was done. The forward translation was conducted by the translators who were native speakers of Hindi language after meeting with the survey users who were the medical social workers. The problems regarding terms and concepts were discussed and information on intent of English language was also discussed. Back-translation from Hindi language into English was conducted. Review of translation was done by bilingual reviewers. Both English language instrument and Hindi back- translations were reviewed and discrepancies were ruled out. A total of 100 patients were randomly recruited from the various clinical outpatient departments

(OPDs) of the hospital after obtaining a written informed consent. The patients' general socio-demographic details were obtained and they were interviewed on the point to point basis of 18 items from the translated PSQ -18 (Hindi version) by the medical social workers. The participants were recruited from different OPDs for ensuring heterogeneity for external validity and were proficient with Hindi language comprehension. To calculate the reliability and validity, data obtained after interviewing the patients in accordance with the instructions in the manual for the patient satisfaction questionnaire short version and translated version of PSQ -18 in Hindi was studied for demographics and the results were analyzed by calculating Cronbach's alpha. Statistical analysis was done using Statistical Package of Social Science (SPSS Version 20; Chicago Inc., USA). Data comparison was done by applying specific statistical tests to find out the statistical significance of the comparisons. Quantitative variables were compared using mean values and qualitative variables using proportions. Cronbach's alpha was calculated by using two-way mixed effects model.

Result

Of the 100 respondents, 3 respondents did not finish the interview suggesting a good response rate of 97%. The final sample comprised of 97 patients in which 52 (53.6 %) were males and 45 (46.4%) were females. The mean age of the sample was 50.59 years including the average age of the male and female participants as 51.35 years and 49.62 years respectively. The demographics of study subjects in accordance to age and gender have been shown in Table 1. Most of the study subjects (51.5%) were in the age group 41-60 years out of which 53.6% were males and 46.4% were females. Most of the participants (93.8%) were married and followed Hindu (56.7%) and Muslim religion (39.2%). 29.9% were illiterate and 59.6 % were literate till standard 12th (Table 1). The mean total score of the PSQ -18 ranged from 52 to 78. The mean score for domains like general satisfaction was 7.87±1.39; for technical quality 15.08±1.41, for the interpersonal manner was

Table 2: Statistics for PSQ-18 Subscales and Constituent Items

PSQ-18 Domains	MEAN	SD	Range	Cronbach's α	Cronbach's α if item deleted
General Satisfaction	7.87	1.39	3-10	0.615	0.400
Item 3	4.03	0.603	-	-	0.345
Item 17	3.84	0.986	-	-	
Technical Quality	15.08	1.41	12-18	0.365	0.408
Item 2	4.07	0.484	-	-	0.514
Item 4	2.77	1.08	-	-	0.411
Item 6	4.10	0.714	-	-	0.414
Item 14	4.13	0.786	-	-	
Interpersonal Manner	6.89	1.13	4-10	0.987	0.568
Item 10	2.65	1.29	-	-	0.385
Item 11	4.24	0.609	-	-	
Communication	8.06	0.876	6-10	0.160	0.418
Item 1	4.13	0.513	-	-	0.401
Item 13	3.93	0.665	-	-	
Financial Aspects	7.04	1.42	4-10	0.271	0.480
Item 5	2.70	1.27	-	-	0.394
Item 7	4.34	0.815	-	-	
Time Spent with Doctor	6.94	1.43	3-10	0.204	0.382
Item 12	3.93	0.725	-	-	0.430
Item 15	3.01	1.15	-	-	
Accessibility & Convenience	14.27	1.84	9-18	0.053	0.444
Item 8	3.82	0.722	-	-	0.427
Item 9	3.41	1.04	-	-	0.389
Item 16	3.74	0.740	-	-	0.444
Item 18	3.29	1.181	-	-	0.400

6.89±1.13, for communication was 8.06±0.876, for financial aspects was 7.04± 1.42 and for time spent with the doctor the mean score was 6.94±1.43. The mean score for accessibility and convenience was found to be 14.27 ± 1.84 (Table 2). The Chronbach's α for the total PSQ 18 translated in Hindi was 0. 445 and for subscales general satisfaction , technical quality , interpersonal manner , communication , financial aspects, time spent with doctor and accessibility and convenience was 0.615, 0.365, 0.987, 0.160, 0.271, 0.204 and 0.053 respectively . Only Items under interpersonal manner showed good internal consistency, and all other items showed poor reliability of the translated scale. Cronbach's alpha if item deleted was ruled out and was found comparatively high by deleting the item Q4, Q5, Q10 and valued 0.514, 0.480, .0.568 respectively (Table 2).

Table 3 shows Pearson's Correlation of PSQ-18 Subscales with various parameters. Age and education shows positive significant correlation with general satisfaction and interpersonal manner. Age and education had negative correlation with Accessibility & Convenience. They had no linear relationship with Technical Quality, Financial Aspects & time spent with doctor.

Discussion

The present study was an attempt to develop a Hindi translated and validated version of PSQ - 18 short form with testing of reliability. This was with an aim to create a tool for future patient satisfaction studies. The fact that the local language tool which the respondents interpret better would be the best for surveys of similar kinds was kept in mind as an advantage while translating and adapting the already existing questionnaire in English. Additional advantage of translating a questionnaire into local language instead of developing a new one is that in different linguistic populations within one country tools in many local languages will be required to be developed [11].

Parameter	General Satisfaction	Technical Quality	Interpersonal Manner	Communication	Financial Aspects	Time Spent	Accessibility & Convenience
Age	0.208*	-0.080	0.250*	0.136	-0.094	0.031	-0.157
Education	0.208*	-0.080	0.250*	0.136	-0.094	0.031	-0.157

The item wise and subscale analysis done on translated questionnaires ensures relatively uniform interpretation and analysis of data as the basic tool is the same and is a good option to adapt the tools as per cross cultural differences . The choice of PSQ-18 for translation was also because of similar reasons that 18 items in the tool covered all aspects of patient satisfaction and needed appropriate time and less drop outs, as evident from response rate of 97% in our study [11]. The questionnaire we used in our study, the PSQ-18 was never translated earlier in Indian national language, Hindi which is interpreted well in our region of the country. We also wished to save time for developing new tool and assumed that universality will be maintained in spite of cross cultural differences as the basic structure will be remaining the same and standardization, construct and validity would be retained as in other studies [12].

PSQ-18 has been advocated for use in various clinical settings as it covers important seven dimensions of patient satisfaction, is accepted by patients for concision and briefness, is adaptable and reliable for use and can help improve specific domains of patient care if used in surveys [13]. Most of the respondents in our study were from the age group 21-60 years productive and responsible age group and were uneducated section of the society availing charitable services of a Government hospital with minimum expectations. However, patient satisfaction surveys are equally important in any sector so as to provide health as a basic entitlement of a citizen with quality as a major component. The low Cronbach's alpha of the present study indicated poor internal consistency for the translated tool though the scores for subscales and items were satisfactory.

The reliability for the subscales was also not in acceptable ranges. The translation of PSQ - 18 English to Hindi version used in this pilot study was not established to be reliable and for future studies of patient satisfaction retranslation or development of a new tool could be feasible option in order to identify areas of improvement in quality of patient care. The reason that the patients in our survey were not well educated or illiterate, could ascertain the fact that the questions were not clearly interpreted and understood and the responses were given without the real comprehension.

The patients though consented to participate in the survey, were regularly attending the patient clinics as per entitlement for free health service. This could have led to poor attention towards interviewer. One of the major limitations of our study was that the number of questions were only 18 and each subscale had minimum 2 and maximum 4 questions and also that the sample size of 100 was small though it was only for the purpose of establishing the reliability and validity of translated version .

The cross culture adaptability to an English version of a short form of the questionnaire could not be established in our setting. One study translated the French version of the PSQ for outpatient physiotherapy in German and the reliability and validity was satisfactory along with comprehensibility [14]. A low value of alpha in our study could be due to a low number of questions, poor interrelatedness between items or heterogeneous constructs. We propose to have statistical inferences drawn through computation of correlation of items as poor correlation also could be a reason for poor reliability calculated by Cronbach's alpha. A relook at the translation and repeating the method could also be attempted and the tool could be re-subjected as a

questionnaire modified version to a larger sample size. Also due to the diversity of health care system in a country like ours, a new patient satisfaction questionnaire could be made in local language, Hindi for our region. Results of this study would have helped the medical professionals to utilize the survey questionnaire in general population in assessing the level of satisfaction in Hindi language. Rao et al., have been successful in developing a separate tool with scales suitable to Indian population which had a reliability of scales >0.7 with correlations ranging from 0.19 to 0.65 for subscales [15].

Literature review, in-depth interviews, review of the pretest by public health experts and translation of the items to Hindi language and verification by experts of the Likert scale and items included as well use of easily comprehensible scales were used in the process. A new tool also could be developed in our setting as the type of patients; health care system (charitable), population demographics and poor Cronbach's alpha of the translated version used in our pilot study suggest the same.

Conclusion

This pilot study aimed to translate the PSQ-18 English version to Hindi language which was achieved. The questionnaire is the most simple, cost effective method to perform a survey on patient satisfaction evident from response rate in our study. However the adaptation process in our setting was not satisfactory as reliability was evaluated and low Cronbach's alpha was achieved. At present the Hindi version could not be recommended to be used for research or survey purpose. However a precise translation could again be done and a larger sample size could be taken to be able to demonstrate cross-cultural adaptability with acceptable reliability and validity. As it has become important to assess patient satisfaction levels through surveys new tools also could be developed suitable for the demographics, linguistic needs and type of health care facilities and respondents for quality health care to improve facilities and amenities being

provided to patients. As the Governments adapt health as an entitlement to its citizens, it becomes all the more important to ensure best possible usage of the funds and health for all.

Conflict of interests

The authors declare that there are no conflicts of interests.

Author contribution

MS carried literature search and prepared the draft manuscript.

NS participated in literature search, manuscript preparation, computing the scores and compiling the results.

AD participated in translation and subjecting questionnaires to patients work and interpretation of the results.

MP conceived the study, participated in design and edited the final manuscript.

All authors read and approved the final manuscript for submission.

Ethical considerations

This study was approved by the Institutional Ethics Committee of the, Bhopal Memorial Hospital and Research Center, Bhopal, MP, India. (Letter no. BMHRC/IEC/desp/29/2014). Consent for participation was taken from the patients as per IEC and institutional norms.

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