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# Translation and Cross-cultural Adaptation of an Instrument to Measure Patients' Perception of the Quality of Care in Kinshasa Hospitals and Health Centers

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## Abstract

**Objective:** To edit, translate and adapt culturally the SERVQUAL modified in India from English into French for use in the Democratic Republic of Congo (DRC).

**Methods:** The cross-cultural adaptation process of an instrument measuring the patients' perception of quality of care requires a translated version that is conceptually equivalent to the original, and culturally acceptable to the target population. Our study aimed at translating from English into French the SERVQUAL instrument used in India. Two translators fluent in English translated the SERVQUAL into French and 2 back translators translated the tool from French into English. The back-translated version was examined by a panel of experts to verify its concordance with the original version. The pretest carried out on 15 patients leaving a medical visit checked on the understandability, clarity and acceptability of the tool. The final French version of the SERVQUAL after the feedback was produced and approved by the panel of experts.

**Results:** A few items were questioned by the panel of experts. After the pretest, during the cognitive debriefing phase, the French-language version of the SERVQUAL was well accepted and understood by all of the expert members; thus this operation demonstrated the robustness of the process of translation and cross-cultural adaptation. After this agreement by the experts, the tool was ready to be pretested by a convenience sample again to assess its understandability, clarity and acceptability to translate and cross-culturally adapt in DRC.

**Conclusions:** The final version of the SERVQUAL cross-cultural adapted for use in DRC proved easy to understand and use.

**Keywords:** Patients' perception; Quality of care; Translation and back-translation; Cross-cultural; SERVQUAL

## Introduction

Measurement of patients' perception of quality of care is essential in clinical practice and scientific research. Based on the scores obtained with measuring instruments, decisions are made on the application of subsequent diagnostic tests and treatments.

While many studies have reported high attendance of healthcare facilities in Kinshasa, no study has ever assessed the quality of care as perceived by patients [1]. Reducing morbidity and mortality through increased use of the service in turn requires public health intervention built on a clear understanding of patients' perception of healthcare services within their cultural context [2]. Besides using outcome of care as a basis for measuring its quality, patients' perception provides another opportunity of assessing it from their perspective. This is one of the major determinants of the uptake of healthcare services [3]. This parameter provides an opportunity to identify deficiency in healthcare, as well as motivators and barriers for the uptake of healthcare services. It can also be used for gathering feedback from recipients of healthcare

services for the purpose of increasing their friendliness, and using the same to improve quality of care [4-6]. This is the biggest challenge faced by the healthcare market in defining and measuring this parameter. However, a suitable instrument is required to measure it.

Others have made attempts to develop multi-dimensional scales to measure quality of healthcare services in the developing nations [7]. Our study seeks to adapt such an instrument for use in hospitals in Kinshasa after editing it for vernacular French.

The most popular tool for measuring quality of care is the Service Quality (SERVQUAL) developed for the marketing perspective with the support of the Marketing Science Institute [8]. As SERVQUAL was most suited to the hospital environment [9], it was modified and used to explore the service quality in a healthcare setting in India. To our knowledge, no questionnaires for measuring patients' perception of quality of care are available for clinical or research use in the DRC [10]. Because of our need for such an instrument, this study was designed to bridge this gap and make the appropriate conversion/translation suitable for this purpose in the DRC.

We have measured the perception of health services users in DRC with a purpose to avail information to policy makers about areas that need improvement where the quality of healthcare is at stake.

The perception of quality of care has never been assessed in the Democratic Republic of Congo. The present study was conducted to document if a tool aimed at measuring clients' perception could help to get reliable data that could possibly be used to improve health care delivery.

## Methods

This study was methodological involving the translation from English into French of an instrument measuring the patient's perception of quality of care [11] and its cross-cultural adaptation for use in DRC. It has been approved by the National Ethics Committee at the Kinshasa University School of Public Health. The translation process and the cross-cultural adaptation of the SERVQUAL followed the procedure described in reference [12].

## Patients

Patients existing a medical consultation at the "Centre Hospitalier du Mont Amba" (CHMA) where systematically approached to be interviewed. Before the interview the patients were screened to get an idea whether they were aged 18 years or more, whether they were literate or not and to obtain an informed consent. Were excluded patients with mental impairment, those who were illiterate and those who could not provide an informed consent. A total of 15 patients, 5 males and 10 females agreed to participate.

The purpose of this phase was used to assess the acceptability, clarity and understandability of the translated adapted version.

## Adaptation Process

The different phases of the cross-cultural adaptation process were carried out strictly in accordance with internationally accepted guidelines [13]. These phases are: acquisition of permission for cross-cultural adaptation and for the use of the SERVQUAL-India [14]; translation of the SERVQUAL-India from English into French; reconciliation; back-translation; review and harmonization of the back-translation; review of the French version of the SERVQUAL by a panel of experts; and cognitive debriefing meeting, reconciliation and preparation of the final version of the questionnaire.

During the translation phase from English into French, 2 translators, one Congolese and the other a French woman fluent in

English, independently translated SERVQUAL-India. Subsequently, a review committee of experts met to produce a first French version. This first version was back-translated into English independently by 2 professionals fluent in English and French. The back-translation was then reviewed by the same committee of experts, who produced a back-translated English version to match the French version of SERVQUAL. The panel of experts was made up of 3 members from the Ministry of Health, the persons who translated the English version, the person who did the backward translation, and the principal investigator. This French version was used during the cognitive debriefing phase, after which another version was produced. Finally a reconciliation was made to produce the final French version of SERVQUAL [15]. The goal of the cognitive debriefing was to point out problematic questions on the instrument and resolve them to make its questions understandable.

Before the interview, the study was explained in detail to each patient. This exercise was also the opportunity to test the understandability, clarity and acceptability of the translated questionnaire in the target population. The questionnaire was given to each participant by a trained interviewer. Individuals were informed that they should not worry about the accuracy of their responses, but rather report what they understood, the difficulty of each question or statement in the questionnaire, and its level of acceptance [16]. At the end, individuals were asked to make a general comment about the questionnaire so that their responses could be assessed. All comments were recorded on a specific form.

The expert committee met again to produce the final French version of SERVQUAL. To this end, the latest provisional version of the measure was analyzed item by item [17]. The cognitive debriefing findings were discussed, and relevant changes made. The French version of the measure was produced.

## Results

The average duration of an interview was estimated at 28 minutes and Standard Deviation (SD)=19 minutes. All 15 patients interviewed were Congolese residing in Kinshasa. Their mean age was 37 years (SD=13.7). Their level of education enabled them to understand French (post-primary level). Four of these patients were adult male (27%). Of all the patients, 9 (60%) sought healthcare for malaria [18]. Three men came for chronic illnesses (diabetes and hypertension) and 3 patients had been discharged from hospital, one after treatment for pneumonia, one from nutritional disorders, and the third after correction of a strangulated hernia (Table 1).

Characteristics	n	Percentage (%)
Mean age, years (SD)	37.0 (13.7)	
<b>Gender</b>		
Male	5	33.3
Female	10	66.7
<b>Marital status</b>		
Married/co-habiting	14	93.3
Not married	1	6.7

<b>Education</b>		
Not educated	0	0
Primary	0	0
Secondary	15	100
Superior /University	0	0
<b>Reason for consultation</b>		
Malaria	9	60
Hypertension/diabetes	3	20
Other conditions	3	20
<b>Method of consultation</b>		
Ambulatory	12	80
Hospitalization	3	20
<b>Together (Total)</b>	15	100

**Table 1:** Sample characteristics during the pre-test of the questionnaire (n=15).

During the translation and retro-translation phases, no questions or corrections were raised. On the other hand, during the approval phase by the panel of experts some items of the backward translation version had to be partially revised because a small change in its formulation was required. However, as the concept remained unchanged, therefore no significant changes were considered to have been carried out.

The following items attracted the attention of the panel of experts in Items 2, 10, 19 and 24 that had been replicated in the original version.

The item 2 “The waiting rooms, clinical and diagnostic test rooms, pre-operative and post-operative (or patient/resident ward) rooms, intensive care units, wards, bathrooms and toilets were adequate, comfortable and clean”. And the item 10 reading as follows: “The waiting rooms, clinical and diagnostic test rooms, pre-operative and post-operative (or patient/resident ward) rooms, intensive care units, wards, bathrooms and toilets were adequate, comfortable and clean” in Table 2.

# Item in the original version	Item
2	The waiting rooms, clinical and diagnostic test rooms, pre-operative and post-operative (or patient/resident ward) rooms, intensive care units, wards, bathrooms and toilets were adequate, comfortable and clean.
10	The waiting rooms, clinical and diagnostic test rooms, pre-operative and post-operative (or patient/resident ward) rooms, intensive care units, wards, bathrooms and toilets were adequate, comfortable and clean.
19	Patients feel safe in getting treated by the doctors of this hospital.
24	Patients feel safe in getting treated by the doctors of this hospital.

**Table 2:** Items with problems.

The item 19 “Patients feel safe in getting treated by the doctors of this hospital”.

The item 25 “Patients feel safe in getting treated by the doctors of this hospital”.

During the cognitive debriefing phase, it was decided to delete item 10, which was considered as a duplicate of item 2, and also delete item 24, which was a duplicate of item 19. In addition, item 2 was too long and was a source of difficulty for nearly three-quarter of the respondents. Therefore, in the final reconciliation phase, the expert committee agreed to expand it into six items for easier understanding.

Item 5, which read as follows: “Employees of excellent hospitals will have neat appearance”; the committee of experts had thought that the question was incomplete had suggested the following wording “Employees of excellent hospitals should have a neat appearance”, its French translation being found in Table 3. Item 36 of the English version seemed incomplete, so translators had to deviate from its meaning to make sense for the translation into French. “Frequency in delays or cancellation of scheduled surgeries due to reasons such as non-availability of operation theatres or surgeons, or lack of preparation of patients for surgery.” Its French translation is found in Table 3.

SERVQUAL- French version before debriefing phase	SERVQUAL- French version after debriefing phase
It is easy to get to the hospital.	It is easy to get to this hospital.
The different units are well furnished, decorated, well ventilated and clean at all times.	The lodges are well furnished, well decorated, well ventilated and clean at all times.
The employees of very good hospitals have a neat appearance.	The employees of better hospitals look after their image.
This hospital offers the right services from the first visit.	From the first visit, the treatment is impeccable in this hospital.
There was not too much delay or cancellation of planned surgeries for reasons such as lack of operating room or surgeon, or lack of patient preparation for surgery.	Delays or cancellations of scheduled surgical procedures for reasons such as unavailability of operating room or surgeons, or lack of patient preparation for surgery are not frequent.

**Table 3:** Changes to the final version recommended by the committee of experts to make more sense in French.

The item 34 “The hospital provides for an inquiry-cum- complaint counter at a prominent place”.

The French translation was not equivalent like the English statement. Its French translation was

“L’hôpital possède une boîte à suggestions mise en évidence”.

The item 40 “This hospital has consulting hours convenient to all their patients”

Its French translation was “l’hôpital fixe les heures de rendez-vous qui arrange tout le monde”.

After scrutiny by the expert committee, grammatical errors and inappropriate expressions were found, and therefore the suggestions indicated in Table 3 were made. The committee deemed it necessary to reword the final version concerning the headers. The questionnaire was formatted as Likert scale, with the response options arranged in a horizontal sequence. The final version of the document incorporated those changes.

## Discussion

This study provides a robust assessment of responsiveness to measure patients' perception of quality of care with a widely used assessment tool, modified from India's “The SERVQUAL”, in a population of patients attending a Healthcare Center. This scale was translated into French and adapted for use in the DRC. In the SERVQUAL modified version in India, the results show that the participants' perceptions did not exceed their expectations, as they were dissatisfied with the level of healthcare services rendered by both public and private sector hospitals. The perceived quality has not been a subject of many investigations by researchers regarding either its measurement or impact on the use of health services. The reports of studies carried out in Upper Guinea are the only ones available [19]. Cross-cultural adaptation is relevant in this case, because currently there is no instrument measuring patients' perception of quality of care in seeking healthcare in the DRC. The decision to culturally adapt the SERVQUAL rather than to develop a new instrument was guided by the fact that the adaptation of a previously described and validated measurement tool, which has been modified, translated and validated into other languages-makes it possible to compare results across analyses undertaken in different countries [20,21]. In addition, the development of a new measurement instrument would be more laborious, time-consuming, and very expensive.

By comparing the results obtained using the 2 tools from India and the DRC, they were almost equally effective. In the former, the mean expectation scores were high compared to the perception scores - ranging from 3.3 to 0.08 for the public hospitals and from 3.8 to -1 for the private hospitals. In the DRC study, the mean perception score ranges from 3.5 to 1.7.

## The India study

### Public hospitals

**Expectation:** The lowest public hospital expectation score was obtained from question 15.; this hospital provides proper safety and comfort measures (e.g. handrails in aisles, rooms and bathrooms, ramps suitably designed for wheelchairs and stretchers, elevators and spacious corridors); the highest came from question 40; this hospital has consulting hours convenient to all its patients.

**Perception:** The lowest public hospital perception score was obtained from question 40; this hospital has consulting hours convenient to all their patients. The highest came from question 30; this hospital has its patient's best interests at heart).

### Private hospitals

**Expectation:** The lowest private hospital expectation score was obtained from question 11; amenities such as continuous electricity and water supply, housekeeping and sanitation facilities, comfortable conditions such as temperature, ventilation, noise and odour are available. The highest expectation score was obtained from question 32; employees had the knowledge to answer patients' questions).

**Perception:** The lowest private hospital perception score was obtained from question 19; patients feel safe in getting treated by the doctors of this hospital. The highest perception score was obtained from question 32; employees had knowledge to answer patients' questions. Out of 5 dimensions, private hospitals perform better than public hospital in 4 of them, namely Physical Aspects, Encounter, Process and Policy, whereas public sector hospitals did better than private sector only in one dimension, Reliability. Overall the private sector performs better in Encounter dimension, but specific Encounter-Responsiveness public sector has the lowest score.

## The DRC Study

The pretest of the instrument was carried out only in one public health center, in which the lowest mean patients' perception score

came from question 17; "this hospital insists on error-free records". This question with the lowest score of patients' perception was closely followed by question 15; "this hospital provides for proper safety and comfort measures (e.g. handrails in aisles, rooms and bathrooms, ramps suitably designed for wheelchairs and stretchers, elevators and spacious corridors)". The highest mean patients' perception score was obtained from question 40; "this hospital has consulting hours convenient to all its patients". In DRC study, the lowest patients' perception score was recorded in 3 scale dimensions, namely Reliability, Encounter and Physical Aspects. The present study aimed to translate and culturally adapt the SERVQUAL modified in India because this scale is a well-designed questionnaire that contains well-formulated questions and is structured by dimensions. The methodology used in the translation and cross-cultural adaptation of the Indian modified SERVQUAL for use in DRC [22] ensures proper validation of content. In addition, SERVQUAL is valid, robust and reproducible, [23] in addition to being discriminative [24] and responsive to longitudinal changes [25]. Several studies have successfully used the SERVQUAL to assess response to several quality services [26]. Therefore, guidelines on the management of the quality of services in general describe SERVQUAL as an important instrument for quantification of quality of hospital services and assessment of patients' perception of quality of care [27-30], since there are few objective and well-validated instruments of use. One factor that ensures the applicability of SERVQUAL in a hospital environment in DRC is the methodology used in the process of translation and cross-cultural adaptation of the questionnaire, which demonstrably preserves the sensitivity of the measure, as well as promoting an appropriate level of equivalence between the different versions [30]. In addition, the internal structure, semantics and psychometric characteristics of a measure may change when translated into another language. This is more common if the process of cross-cultural equivalence is incorrectly performed. The need to take into account cultural influences on the perception of the quality of healthcare is increasingly being recognized in multicenter and multinational studies. The purpose of adapting an instrument measuring the perception of quality of care is to obtain measurements that are appropriate and valid in different cultural groups. This means developing or adapting a measure that is conceptually equivalent in different cultures.

In our study, the difficulties encountered in the translation phase resulted from the need to produce a conceptual translation, whereas there were no difficulties in translating words referring to physical aspects of the hospital or a health center. There were no difficulties in translating attitudes or behavior of a care-giver, or to activities in daily life. However, some English language idioms and phrases, such as "The ergonomic (layout) is conducive for physically challenged" and "The meals are offers food", were a matter of review and discussion. The experts committee suggested these formulations: "The ergonomic (layout) is conducive for the physically challenged" and "The meals are offers of food". The panel of experts, which was composed of bilingual persons, had approved the retro-translated version and had undertaken to evaluate its corresponding French version in order to detect errors, make suggestions and analyze the content and structure.

Cognitive debriefing sessions are essential in the cross-cultural adaptation process because even a detailed methodological process does not ensure equivalence between target and source versions. The questionnaire was presented to 15 participants to determine its acceptability, clarity and understandability. Although the participants had varied educational levels, no significant difficulties preventing them from understanding the questionnaire had been identified. This

demonstrates that the translated tool can be given to individuals from various socio-cultural classes. An analysis of the responses given during the cognitive debriefing process showed that only a few items needed revision because of difficulties in understandability. This finding is of great relevance because it shows the robustness of the process of translation and cross-cultural adaptation. The respondents' comments on the questionnaire were very positive. All 15 patients said in general that the questionnaire was clear, easy to understand, and easy to answer, with simple and quick-to-follow instructions. In addition, the questionnaire was considered to be significantly relevant for the measurement of the patients' perception of quality of care. In conclusion, as mentioned above, it is important to make available an appropriate instrument for measuring patients' perception of quality of care in developing countries. We hope our contribution helps towards this objective. It also proposes a scale for measuring patients' perception of quality of care, which has its roots in the modified SERVQUAL in India. SERVQUAL-India has been translated into French spoken in DRC and adapted for use in DRC. The final French version of the questionnaire, designated SERVQUAL-RDC, was easy to understand and user-friendly, as well as being a single measure of patient's perception of quality of care delivery in health centers in DRC. Analysis of users' perception of quality of care offers a useful complement to the measurement of the quality of care seen from the perspective of professionals or the public authorities of the Health.

## Limitations

However, this work, like any other human work, encounters a certain number of limitations, of which we shall discuss some. The first is that it would have been useful to ensure that respondents were bilingual in order to compare the responses to the two French and English versions of SERVQUAL. The second limitation is referring to the sample size. Indeed, the sample size 15 patients could not allow us to better gauge the reliability, validity and responsiveness of the instrument.

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