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# Validation and adaptation of the hospital consumer assessment of healthcare providers and systems in Arabic context: Evidence from Saudi Arabia

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### ABSTRACT

One of the main purposes of healthcare organizations is to serve patients by providing safe and high-quality patient-centered care. Patients are considered the most appropriate source to assess the quality level of healthcare services. The objectives of this paper were to describe the translation and adaptation process of the Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) survey for Arabic speaking populations, examine the degree of equivalence between the original English version and the Arabic translated version, and estimate and report the validity and reliability of the translated Arabic HCAHPS version.

The translation process had four main steps: (1) qualified bilingual translators translated the HCAHPS from English to Arabic; (2) the Arabic version was translated back to English and reviewed by experts to ensure content accuracy (content equivalence); (3) both Arabic and English versions were verified for accuracy and validity of the translation, checking for the similarities and differences (semantic equivalence); (4) finally, two independent bilinguals reviewed and made the final revision of both the Arabic and English versions separately and agreed on one final version that is similar and equivalent to the original English version in terms of content and meaning.

The study findings showed that the overall Cronbach's  $\alpha$  for the Arabic HCAHPS version was 0.90, showing good internal consistency across the 9 separate domains, which ranged from 0.70 to 0.97 Cronbach's  $\alpha$ . The correlation coefficient between each statement for each separate domain revealed a highly positive significant correlation ranging from 0.72 to 0.89.

The results of the study show empirical evidence of validity and reliability of HCAHPS in its Arabic version. Moreover, the Arabic version of HCAHPS in our study presented good internal consistency and it is highly recommended to be replicated and applied in the context of other Arab countries.

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### Introduction

Worldwide, patients' experiences and their perspectives on service quality have increasingly become one of the main priorities for assessing health system performance and the quality of health-

care providers [1–8], especially among healthcare organizations (HCOs) moving toward patient-centered healthcare. On the other hand, although several survey instruments have been used to assess patients' satisfaction [9–16] assessing actual patient's experience with healthcare services may differ in terms of the meaning and constructs compared with the patient satisfaction survey.

Therefore, the Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) survey was developed to assess patients' experiences with hospital care quality. The survey was developed by the Centers for Medicare and Medicaid Services (CMS) in partnership with and funded by the Agency for Healthcare Research and Quality (AHRQ) [17]. The literature indicates

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that HCAHPS has high internal consistency [18,19]. The co-efficient alphas for sub-scales of CAHPS were as follows: 0.92 for communication with nurses, 0.87 for communication with doctors, 0.91 for communication about medication, 0.94 for responsiveness of hospital staff, 0.86 for pain management, and 0.89 for discharge information. Hence, the HCAHPS survey showed a good sensitivity for measuring the communication and interactions between providers and patients during hospitalization.

The healthcare system in Saudi Arabia can be classified as a national government healthcare system in which the government provides most of the healthcare services through a number of government agencies. The Saudi National Guard Health Affairs (NGHA) is one of the leading governmental healthcare agencies in Saudi Arabia. NGHA includes sophisticated healthcare institutions that provide tertiary healthcare services to National Guard employees and their dependents and the transferred cases from general hospitals. This study was conducted in King Abdulaziz Medical City (KAMC) in the city of Riyadh. KAMC is the largest healthcare institution of the NGHA, with bed capacity of more than 1000 beds.

The primary objective of this paper was to describe the translation and adaptation process of the HCAHPS into Arabic language, and to report the validity and reliability of the translated Arabic HCAHPS version. The HCAHPS has been widely used in the USA, and it has been translated and used with increasing frequency in European countries as well [18,20,21]. The literature indicates a gap of HCAHPS use in Arabic language, which further highlights the significance of this study and its valuable contribution.

## Materials and methods

This study used a cross-sectional design. The self-administered HCAHPS questionnaire was used to measure participants' perceptions of quality of care during their hospitalization. The study was carried out from June to December 2012 in the KAMC in Riyadh. The data analysis was completed using Statistical Package for the Social Science (SPSS) software.

This study targeted inpatients at KAMC during their hospitalization. We targeted patients on the same day of their discharge to obtain data regarding their hospital stay experience. We excluded the transition care questions in our Arabic HCAHPS version because the purpose of these questions was to assess the patient's perspective in the days or weeks following hospital discharge.

The exclusion criteria used in this study were the same as those identified by the original English version of HCAHPS: (1) patients with cognitive disability; (2) patients under 16 years of age; (3) patients in ICU; and (4) patients in ER. The patients in the above categories were excluded because the patient survey was developed for use with (i) adult patients and (ii) patients who are in a stable non-serious condition. It was assumed that most ICU, ER, and psychiatric patients would be too ill or not sufficiently disposed to participate in this research. In addition, there were associated ethical, cognitive, and capability reasons for their exclusion.

### Translation and adaptation process

The following describes the translation and adaptation process of HCAHPS used in this study.

The original English version of the Consumer Assessment of Healthcare Providers and Systems Hospital Survey (HCAHPS) was translated into Arabic, with the translation framework developed by Squires et al. [22,23] serving as a methodological guide for the translation and adaptation process. The translation process included the following steps: (1) translation of the original HCAHPS

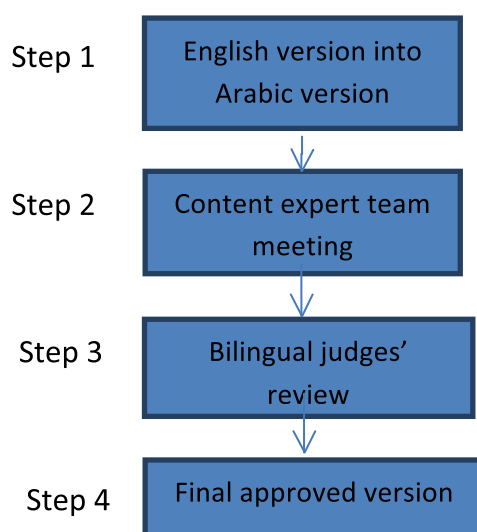


Fig. 1. Translation process of HCAHPS.

English version into Arabic by a qualified bilingual translator working in the Research Unit of the College of Public Health and Health Informatics in King Saud bin Abdulaziz University for Health Sciences; (2) the Arabic version was translated back into English and then reviewed by a team of content experts team to ensure that the translation did not change the meaning of the content (*content equivalence*); (3) both the Arabic and English versions were given to the Staff Support Services Department, Translation Section, at the NGHA to verify the accuracy and validity of the translation and identify the similarities and differences between the two versions using their bilingual translators who know both English and Arabic languages (*semantic equivalence*). The goal in this step was to identify and resolve the inadequate expressions/concepts of the translation and any discrepancies between the two versions, if any, and to ensure they are identical in content and meaning (*conceptual equivalence*), using the bilingual translation method. For this purpose, two independent bilingual judges reviewed both versions separately and independently, and then, they met to discuss their findings by comparing the Arabic with the English version. These were found to be similar to a large extent, with occasional observations on some words and edits, which were discussed among them until one final version similar to the original in terms of content and meaning (*content equivalence*) was agreed upon, and the judges endorsed the Arabic version with their official stamp.

The final version with the official endorsement was used for the pilot study. The flow chart shows the translation and adaptation process (Fig. 1).

### Pilot study

The final Arabic version of the HCAHPS was pre-tested in a pilot study among discharged patients representing those who will be participating in the HCAHPS survey in the future. The simple random method was used for the pilot study. The purpose of the pilot study was to check the clarity and suitability of questions, so that confusing or ambiguous questions could be rephrased or eliminated. The pre-test evaluated a total of 36 participants including males and females from all age groups (18 years of age and older) and different socioeconomic characteristics. The Arabic HCAHPS version in the pilot study used the self-administration method, with voluntary patients, and an expert was available at the discharge points to explain to participants what was the question, what they thought when they heard a particular phrase or term, and what

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