Patients’ perspective in Chilean primary care: a questionnaire validation study

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Abstract

Objective. The aim of this study was to adapt and validate an instrument for assessing quality of care from the patients’ perspective in the context of Chilean primary care.

Methods. The ‘Health Centre Assessment Questionnaire’ is made up of six multiple-item scales and two single-item scales addressing eight key areas of primary care activity. A further two single-item scales ask about the overall satisfaction and the way in which the centre deals with patients’ health issues. The adaptation process was developed according to methods described in the specialized literature. The instrument was initially pre-tested in a sample of 100 primary care patients. The validation was carried out in 10 urban public primary healthcare centres where 2896 patients were invited to complete the questionnaire. The validity and reliability of the instrument was assessed using standard psychometric techniques.

Results. Ninety nine per cent (2870) of those approached completed the questionnaire. It was acceptable to most of the patients as reflected by the high response rate, and a full range of possible scores in most of the scales. Reliability was good as reflected by high internal consistency and homogeneity. Validity was supported by the confirmation of scaling assumptions, the moderate correlations between multiple-item scales, and by the confirmation of our ‘a priori’ hypothesis.

Conclusions. The questionnaire could be a useful instrument for assessing a number of important dimensions in Chilean primary care. It is acceptable, reliable and valid. Further work is required to evaluate its validity against external criteria and its test–retest reliability.

Keywords: GPs, primary care, quality questionnaire, middle-income country, psychometrics, validation studies

Introduction

Quality of care measurement and improvement are issues that have received special attention in many health systems around the world in the last decade [1–5], resulting in the development and validation of several instruments for its assessment [6–8]. In Chile, quality of care is one of the core issues of the current health system reform, with health authorities stating that “quality improvement both in individual and collective health services necessarily requires the setting up of processes that assess and improve users’ satisfaction” [9]. The Chilean health context is characterized by a mixed healthcare system in which the public sector provides 68.3% of the services, 17.6% are delivered by a private profit-making sector, and 14.1% are covered by a non-profit-making private sector. The public insurer (FONASA, which is a hybrid of social insurance and tax-financed entity) covers part of primary care and most of hospital care for patients in the public sector. Local municipal governments cover the other part of public primary care, and they own the facilities (health centres) where primary healthcare is delivered by multi-disciplinary teams composed of doctors, nurses, midwives, dentists, clinical psychologists and social workers.

The first step in any quality of care assessment process is the definition of quality. There are several and complex definitions of quality of care, which often lead to confusion in the field. However, there is an agreement about the multi-dimensional nature of the concept, with access (if patients can get the services they need) and effectiveness (if these services provide more benefits than harms) being the two most recurrent dimensions mentioned [10, 11]. The latter can be divided in two aspects: clinical or technical effectiveness (application of technical knowledge) and inter-personal effectiveness (communication skills, personal attributes: trust, support, etc.), each one requiring different assessment and evaluation methods [11].

General practice is the most frequent point of contact between the population and their health system, where people can find a wide array of promotional, preventive and curative services [12]. This combination of amplitude and diversity, places important challenges for the assessment of quality of care in general practice, often resulting in partial and focused evaluations looking into specific clinical areas

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and not allowing for an analysis of the different factors that might be affecting it [13, 14]. Likewise, the needs, preferences and opinions of patients and users of the system acquire special relevance in this context and should be considered at the moment of monitoring or assessing quality of care. Grol et al. [15] have suggested that for quality improvement to succeed, greater consideration and recognition of patients’ opinion is essential. Maxwell has also stated that in quality assessment, measurement from the technical point of view is not enough, and the measurement of inter-personal aspects, where the users’ opinions are of the utmost importance, should also be considered [16, 17].

Considering these issues, a number of instruments to assess quality of care in general practice from the patients’ perspective have been developed and validated both in USA and Europe [6, 8, 18, 19]. These instruments have intended to assess those aspects most valued by users in general practice using ‘sound’ methods of measurement. Although several initiatives have been implemented in Chile to assess users’ satisfaction in primary care, the opinion of patients and service users has not always been incorporated; they have mainly considered the views of health professionals; they have been focused on specific clinical encounters [20]; or the instruments used have not been subjected to a rigorous evaluation of their measurement properties [21–23]. A way forward could be the use of validated questionnaires; however, an instrument which has been developed for one group of users may not necessarily be appropriate in a different setting. The adaptation of the instrument to the particular setting where it will be used is therefore necessary [24].

The aim of this study was to adapt and validate an instrument to assess quality of care from the patients’ perspective in the context of Chilean primary care.

Methods

An instrument was developed considering adaptation and validation stages, following the standards established in the specialized literature [24, 25].

Adaptation of the instrument

Literature review: Chilean and international literature was reviewed in order to identify instruments that measure quality of care in general practice from patients’ perspective. We used a combination of text-words and MeSH terms in PubMed related with primary care/general practice, patients’ perspective/satisfaction and instrument/questionnaire. The criteria used for the selection of the instruments were an explicit consideration of the patients’ perspectives in its development process, a formal process of validation of its measurement properties, and its availability.

Translation: Each selected instrument was translated from the language in which it was originally developed, into Spanish.

Back-translation: Each version generated in Spanish was back-translated into its original language, except for those originally developed in Spanish.

Revision Committee: A multi-disciplinary committee, headed by the main researcher, compared the original versions and their translations. Discrepancies were solved by consensus. The inclusion or exclusion of each item was discussed using the nominal group technique. The format and wording of specific items could be modified if consensus was achieved in the committee.

Pre-test or Pilot: The instrument was self-administered in the waiting room before attending appointments to a convenient sample of 100 patients in an urban public primary healthcare centre, in order to check errors in the translations or any grammatical problems. Respondents had to be >15 years old, literate and attend one of the three health programs selected (morbidity, maternal and child care).

Validation of the instrument

Sampling procedure. The adapted instrument was administered to a sample of 2896 patients attending 10 public primary care health centres in order to evaluate its psychometric properties. Every patient attending an appointment with a doctor, nurse or midwife in three randomly chosen days within a month was approached by one member of the field team.

Our operational definitions of psychometric terms were as follows:

Validity: The extent with which the instrument is actually measuring what it purports to measure. We explored validity from different perspectives:

True validity: Whether the instrument ‘seems’ to measure what it intends to measure. This was assessed informally by the Revision Committee.

Content validity: Whether the instrument contains all the aspects which are relevant to the construct that it evaluates. It was analysed through the scaling assumptions and the correlations between scales (see below).

Construct validity: Whether the results obtained using the instrument confirm expected relationships. This was assessed making ‘a priori’ comparisons between groups.

Reliability: The extent to which the instrument measures quality of care in a reliable and reproducible way. This was given by homogeneity and internal consistency.

Internal consistency was evaluated using Cronbach’s α coefficients for each scale (expected values >0.70 suggest adequate internal consistency). Cronbach’s α coefficients were calculated once the individual items were excluded (an important increase in the coefficient suggests that the specific item is not measuring the same dimension than the rest of the items of scale).

Homogeneity was evaluated using correlations between each item and its own scale eliminating the item (expected values >0.20 suggest homogeneity on the scales).

The scaling assumptions (whether the items are on the ‘right’ scale); Using the comparison of the correlations between each item with its own scale and with the other scales (the individual items must be more correlated with the scale they belong to than with any other scale in the questionnaire).

‘A priori’ hypothesis test: We postulated that users who overall evaluated the health centre better (as reflected in the answers to
the overall item ‘Satisfaction’) would provide higher ratings in the specific evaluative scales of the instrument. In order to do this, the sample was divided in two groups according to the answers in that item. The mean scores in each of the six evaluative scales for both groups were then compared using a t-test.

**Results**

**Adaptation of the instrument**

Seven instruments were identified from the search: three of them developed in Chile [20–22] and four abroad [6, 8, 18, 26]. According to the pre-established criteria, two instruments were selected: the General Practice Assessment Questionnaire (GPAQ) developed in the UK [8] and one developed in an urban area of the Región Metropolitana, Santiago, Chile [21]. The former was based on a questionnaire developed in USA—the Primary Care Assessment Survey [6]—modified for use in British general practice and focused on access, inter-personal aspects and continuity of care. The latter was based on a qualitative study assessing patients’ priorities in primary care services and it highlighted the importance of different aspects of the health centre infrastructure for Chilean users.

Two independent forward and two independent backward translations of the GPAQ were made. The Revision Committee based its deliberations on translated items from the GPAQ plus those identified as relevant from the national instrument. This process produced a first version of the ‘Health Centre Assessment Questionnaire’ (Cuestionario de Evaluación de su Centro de Salud, CECS) which contained 50 close-ended and three open-ended items. Thirty-four of the close-ended items required rating (evaluative) and the other 16 called for descriptive information (report). The evaluative items were initially grouped into 10 scales covering the dimensions described in Table 1.

The instrument was piloted in a sample of 100 patients comprising 86% of women with a mean age of 35.5 years (SD 13.7; range 15–72 years). In general, the instrument was understood by respondents and only minor modifications on the format were suggested. However, specific items—public conveniences, administrative personnel and waiting times—had to be frequently clarified by the field team.

In order to tackle these issues, the Revision Committee decided to separate three of the original close-ended items which resulted in an increase in four evaluative items (from 34 to 38), grouped into the same 10 scales of the original version. With the aim of reducing the burden of response of the instrument three ‘variant’ of the questionnaires were proposed, each focused on services delivered by specific Primary Care Providers (PCP): doctor, nursing care and maternal care. Each ‘variant’ assessed the same seven common dimensions (access, infrastructure, administrative personnel, paramedics, continuity, satisfaction and resolution), but only one of the three dimensions concerning the specific service to which patients were attending (communication care from PCP-doctor, PCP-nurse, PCP-midwife). Variables were measured in a Likert-type scale with six categories of answers per item with a score range of 1–6 (very bad to excellent). The scores for each of the multi-item scales were calculated as the arithmetical mean of scores for their respective items. Similarly, the score for single-item scales was reported as the score of each individual item.

**Table 1** Dimensions included in the scales of the CECS questionnaire

<table>
<thead>
<tr>
<th>Scale label</th>
<th>No. of items (item no. in the questionnaire)</th>
<th>What is intended to measure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Access</td>
<td>10 (1, 2, 11a, 12b, 13b, 15b, 15d, 15f, 16a, 16b)</td>
<td>How well patients can get the services they need. It considers geographical and other barriers for getting health professional personal services</td>
</tr>
<tr>
<td>Infrastructure</td>
<td>7 (3, 4, 5, 6, 7a, 7b, 8)</td>
<td>How well the physical structure and cleanliness of the building is maintained (including ventilation and heating)</td>
</tr>
<tr>
<td>Administrative personnel</td>
<td>3 (9a, 9b, 9c)</td>
<td>How well services of administrative staff are delivered</td>
</tr>
<tr>
<td>Paramedics</td>
<td>1 (10)</td>
<td>How well services of paramedical personnel are delivered</td>
</tr>
<tr>
<td>Continuity</td>
<td>1 (18b)</td>
<td>What is the perception of continuity in medical care in the health centre</td>
</tr>
<tr>
<td>Communication care from PCP-doctor</td>
<td>8 (19 a–h)</td>
<td>The evaluation of communication and inter-personal skills of physicians</td>
</tr>
<tr>
<td>Communication care from PCP-nurse</td>
<td>3 (21 a–c)</td>
<td>The evaluation of communication skills and quality of care delivered by nurses in the health centre</td>
</tr>
<tr>
<td>Communication care from PCP-midwife</td>
<td>3 (23 a–c)</td>
<td>The evaluation of communication skills and quality of care delivered by midwives in the health centre</td>
</tr>
<tr>
<td>Satisfaction</td>
<td>1 (24)</td>
<td>What is the global level of satisfaction with the care delivered by the health centre</td>
</tr>
<tr>
<td>Resolution</td>
<td>1 (25)</td>
<td>How patients rate the capability of the health centre to deal with their health problems</td>
</tr>
</tbody>
</table>
Each scale can thus be interpreted in a range from 1 as the lowest to 6 as the highest possible score.

**Validation of the instrument**

The final validation process of the CECS was carried out on a sample of 2896 users attending 10 urban public primary health care centres of the Central Metropolitan Health Authority (Servicio Salud Metropolitano Central). Ninety nine per cent of them (2870) returned the questionnaire with full information for the analysis. The inclusion criteria and survey procedures used were the same as in the pilot phase. The mean age of survey respondents was 36.68 ± 15.44 SD years, with 91.1% of women. Other patients’ characteristics are summarized in Table 2. They do not differ from those observed in the total population attending the health centres selected.

Table 3 summarizes the scores of the six multiple-item scales of the instrument. There was no extreme ‘floor’ or ‘ceiling’ effects in any of the six scales. Regarding the overall evaluation items, 73.8% of respondents were satisfied with the service provided and 51% felt the health centre had solved their problems excellently or fairly well. Missing data were observed in <1% of the individual items.

**Psychometric properties**

With the exception of the ‘administrative personnel’ scale (α = 0.671), all Cronbach’s α coefficients were >0.70, and no significant changes in those coefficients were observed when individual items were excluded from each scale, suggesting good reliability. The homogeneity of the CECS was assessed using the item-total correlations. All these correlations were in excess of 0.20, which suggests homogeneity for each of the scales (Table 4).

The scaling assumptions of the CECS were tested by examining the correlations between each item and its own scale and its correlation with the other scales (data not shown). All of the six multi-item scales achieved 100% scaling success. The correlations between the different scales (Table 4) support the construct validity of the CECS. Only three out of 12 (25%) inter-scale correlations were >0.45 and all of them were well in the range of 0.2–0.6 suggested in the literature. These moderate inter-scale correlations provide evidence of good discriminant validity, i.e. the scales point at the same generic concept but at different dimensions of it.

Respondents who were ‘satisfied’ with the care provided scored significantly higher on each of the CECS scales than those who declared themselves to be less satisfied, supporting our ‘a priori’ hypothesis and CECS criterion validity (Table 5).

**Discussion**

We have documented the acceptability and provided evidence on the psychometric properties of the CECS questionnaire in Chilean primary care. The instrument includes several aspects that have been considered key in the assessment of patients’ satisfaction in different countries, such as access, infrastructure, continuity, communication with different health professionals, satisfaction and the way in which the centre deals with patients’ health issues [7, 15, 27, 28]. These aspects seem to be similar to those found in our local setting [20, 29], despite the limited number of national studies that analyse this issue. We can therefore say our questionnaire includes in its design the most valued aspects from the users’ perspective.

The three ‘variants’ of our instrument (communication care from PCP-doctor, PCP-nurse, PCP-midwife) intended to reduce the number of items in order to reduce the burden of response. However, it was not possible to verify a significant reduction in the time spent by users to answer it and, on the other hand it made the statistical analysis more complex. We therefore consider that a future version of the instrument should include the items of all the variants in one unique instrument, but it should also consider the impact of this in questionnaire length, the patients’ willingness to respond and the skip patterns needed.

The results suggest that the CECS is valid and reliable. Face validity was supported by the analysis carried out by the Revision Committee that considered that the instrument measures what it was supposed to assess. Content validity was supported by the analysis of scale assumptions which were accomplished in all cases, indicating that the items are on the ‘right’ scale. Likewise, the moderate correlations between different scales indicate that the instrument is measuring the same underlying construct, but each scale points to different dimensions of it. Construct validity was supported by the verification...
of our main working hypothesis: that users who evaluated the health centre better globally would have better scores in each of the specific evaluative scales of the instrument. On the other hand, the instrument showed adequate internal consistency and homogeneity for its different scales, except for one of them, achieving adequate reliability standards [25].

In the study, the instrument was answered by patients requesting health services at the Centre and it was completed inside the waiting room, usually before receiving professional care. Considering that only 5% of the patients required assistance of a member of the field team to fill in the questionnaire, it seems to have a higher degree of applicability.

Limitations
Although the instrument attempts to cover the patients' global evaluation about the services provided by health centres, this evaluation could be influenced in an important way by the patient's experience about the specific care delivered at the moment of answering the questionnaire. Likewise, the evaluation performed by the patients could depend on their expectations about the services they will receive at the health centre. Both questions will deserve future research about factors of our main working hypothesis: that users who evaluated the health centre better globally would have better scores in each of the specific evaluative scales of the instrument. On the other hand, the instrument showed adequate internal consistency and homogeneity for its different scales, except for one of them, achieving adequate reliability standards [25].

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<table>
<thead>
<tr>
<th>CECS scale</th>
<th>Cronbach’s α</th>
<th>Range of item-total correlations</th>
<th>Access</th>
<th>Infrastructure</th>
<th>Administrative personnel</th>
</tr>
</thead>
<tbody>
<tr>
<td>Access</td>
<td>0.77</td>
<td>0.33–0.52</td>
<td>0.50</td>
<td>0.55–0.63</td>
<td>0.50</td>
</tr>
<tr>
<td>Infrastructure</td>
<td>0.84</td>
<td>0.55–0.63</td>
<td></td>
<td>0.52</td>
<td>0.41</td>
</tr>
<tr>
<td>Administrative personnel</td>
<td>0.67</td>
<td>0.50–0.67</td>
<td>0.37</td>
<td>0.30</td>
<td>0.33</td>
</tr>
<tr>
<td>Communication care from PCP-doctor</td>
<td>0.95</td>
<td>0.76–0.86</td>
<td>0.45</td>
<td>0.39</td>
<td>0.52</td>
</tr>
<tr>
<td>Communication care from PCP-nurse</td>
<td>0.93</td>
<td>0.83–0.88</td>
<td>0.36</td>
<td>0.30</td>
<td>0.37</td>
</tr>
<tr>
<td>Communication care from PCP-midwife</td>
<td>0.93</td>
<td>0.83–0.90</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1These sections of the instrument were applied to eligible groups of patients depending on the type of primary care provider.

Table 5 Mean CECS multi-item scale scores for 'more satisfied' and 'less satisfied' respondents

<table>
<thead>
<tr>
<th>Scales</th>
<th>Global satisfaction question</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Less satisfied</td>
<td>More satisfied</td>
</tr>
<tr>
<td>Access</td>
<td>2.99</td>
<td>3.49</td>
</tr>
<tr>
<td>Infrastructure</td>
<td>2.93</td>
<td>3.40</td>
</tr>
<tr>
<td>Administrative personnel</td>
<td>3.40</td>
<td>3.91</td>
</tr>
<tr>
<td>Communication care from PCP-doctor</td>
<td>3.62</td>
<td>4.10</td>
</tr>
<tr>
<td>Communication care from PCP-nurse</td>
<td>3.46</td>
<td>4.02</td>
</tr>
<tr>
<td>Communication care from PCP-midwife</td>
<td>3.86</td>
<td>4.44</td>
</tr>
</tbody>
</table>

1According to CECS item asking how satisfied patients are with the care delivered by the centre (see question 24 of online Supplementary material). 'Less satisfied' corresponds to 'completely', 'very' and 'fairly' dissatisfied and 'neutral'. 'More satisfied' corresponds to 'completely', 'very' and 'fairly' satisfied.
affecting the assessment that patients make about primary care services delivered by specific organizations.

One of the main limitations is related to the limited number of health centres included in the study. Although the sample consisted of ~3000 patients, it only represents 10 health centres in five urban municipalities of Santiago Metropolitan Region. Once the shortcomings identified have been solved, we plan to use the instrument in a more diverse sample of primary care organizations including, if possible, rural and remote areas.

We did not assess the test–retest reliability of the instrument because of the limitations in our funding, but this will be an issue to explore in the near future. We will also plan to explore the dimensions underlying the responses in a bigger sample of patients through a confirmatory factor analysis.

Conclusion

An instrument for the assessment of quality of health care provided in Chilean primary care from the patients’ perspective has been adapted and validated. The results show its reliability and content, construct and face validity for most of its scales. Further work is required to evaluate the validity of the questionnaire against external criteria, its test–retest reliability, and the performance of the ‘administrative personnel’ scale. Once this is available, it could be a useful instrument for health centres, local authorities, health authorities and researchers interested in assessing a number of important dimensions of primary care activity and in proposing interventions to improve them.

Finally, we are fully aware that the evaluation from the patients’ perspective only represents one part of the quality of care assessment and, therefore, must be complemented with the measurement of clinical and organizational aspects of care [11, 30].

Supplementary material

Supplementary material is available at INTQHC Journal online.

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