A new, brief questionnaire (PEQ) developed in primary health care for measuring patients’ experience of interaction, emotion and consultation outcome

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Background. A deepened understanding of patients’ perspectives is essential in order to improve medical communication. By changing focus from patient satisfaction to patient experiences, more immediate, personal and affective responses may be captured.

Objective. Our aim was to develop a new consultation-specific questionnaire on patient experiences.

Methods. The questionnaire was developed in Norwegian primary care in three main phases. Phase 1: focus groups with patients in order to identify important aspects of patients’ experiences, and their words and language when describing such experiences. Phase 2: a questionnaire survey with 110 items including 660 patients. Extensive testing resulted in a reduction to 25 items on six dimensions. Phase 3: a questionnaire survey with 25 items including 1092 patients. Psychometric analyses and feedback from patients and physicians involved dimensionality and tests of validity and reliability.

Results. A final questionnaire was produced with 18 items on five dimensions: communication; emotions; short-term outcome; barriers; and relations with the auxiliary staff. The validity and reliability estimates were highly satisfactory. Three scales were skewed while two were more equally distributed. Forty-eight per cent of the patients described less than optimal communication experiences; some communication barriers were detected in 70% of the visits and less helpful experiences with the staff were reported in 55% of the visits. Twenty-four per cent of patients left with no positive feelings, and 48% scored low on the outcome scale (knowledge, perceived result).

Conclusions. The patient experience questionnaire (PEQ) emphasizes what patients value the most, i.e. interaction, emotions and outcome, and may represent a valuable tool for doctors who want feedback from their patients on the function of their doctor–patient relationships.

Keywords. Patient experiences, primary care, questionnaire.

Introduction

Efficient medical communication depends on an understanding of the patient perspective. It is useful for health care providers to obtain feedback from patients. Patient satisfaction questionnaires have provided meaningful information about patient preferences in medical care.1–4 There are, however, some limitations to satisfaction research.5–9 The general reluctance to give negative evaluations in particular about one’s own doctor is a well-known obstacle. Further, conventional preconceptions and information from others are known to influence evaluations about social events.10 In addition, most satisfaction items originate from cultural settings where consumerism in medicine is more prominent than in Norway.

In the present study, we present a new consultation-specific patient questionnaire, designed in general practice. Our overall aim was to facilitate understanding of the complex process that takes place in the consultation, and indicate specific areas for improvement.

The theoretical foundation was based upon a shift from cognitive evaluation, e.g. satisfaction, to a sharing
of experiences, in order to capture more immediate, personal and affective responses. We adopted a non-judgemental approach, in order to make it easier for patients to express their view freely. We wanted to accentuate patient centredness by designing the questionnaire in line with patients’ preferred content and by using their own words and statements.

The aim of this paper is to describe the development, design and psychometric evaluation of the final version of the patient experience questionnaire (PEQ).

Methods

The questionnaire was developed in Norwegian primary care in three main phases.

**Phase 1**

Patient experiences with their most recent medical encounter were recorded in six focus groups. A full account of methods and results of this part of the study is reported elsewhere. The interview guide, based on an extensive literature review, included open-ended questions and specific prompts on the following topics: health centre organization, equipment and staff, examination, information, communication, emotional experiences, expectations and coping. In all groups, themes that did not emerge spontaneously were brought up by the group facilitators by the end of the meeting, making sure that ample opportunity was given to report on all issues.

Interaction between doctor and patient (e.g. communication, emotional experiences and personal relationship with the doctor) and the immediate consultation outcome were the most important elements. Information, continuity of care and time with the doctor were also judged to be central. Six other themes received a little attention in a few groups (e.g. availability, doctors’ gender, time in the waiting rooms, auxiliary personnel, the clinical examination and technical skill), while access, building, equipment, waiting area and cost received no attention. Furthermore, a number of grammatical and verbal characteristics were found, including the avoidance of direct referrals to the doctors’ talk or actions, frequent use of the verbs ‘feel’ or ‘think’, evasiveness in connection with possible criticism and the use of limiting expressions when reporting negative emotions. Additionally, some characteristic expressive verbal phrases (i.e. “to have a good talk”, “to reach the doctor”) were found.

**Phase 2**

Based on these findings, a first questionnaire draft with 110 items was designed and a survey conducted including 660 general practice patients on a national basis. We recruited GPs from various parts of Norway, making sure that both rural and urban areas were represented. The patients were then recruited consecutively for 2 days in each clinic. The design process before the survey included editing and rephrasing of items after checking for ambiguity, clarity and relevance. An expert group consisting of representatives from general practice, sociology, psychology and psychometric science reviewed the various drafts. A pilot survey, including a short interview with 20 general practice patients immediately after the completion of the questionnaire, was also conducted prior to the large survey.

The patients’ own words and phrases from the focus group study largely made up the questionnaire items. In line with the main findings from the qualitative study, these items were worded simply, with little direct mention of the doctor and with as little potential criticism as possible. In this first draft, items on areas that did not appear important to the patients in the focus groups, such as availability and access, were also included. The number of items within each topic reflected its relative importance. Only a few topics were excluded in this first survey (e.g. cost and doctors’ technical skills), the latter because the informants consistently referred to their doctor’s communication abilities when asked about their technical skills.

The questionnaire also included questions on general satisfaction, on future behaviour (i.e. would you like to come back to the same doctor?) and four open-ended questions for free text response on particular positive or negative aspects of the visit, areas for improvement and comments about the questionnaire.

Based on extensive statistical analyses (data not presented) including descriptive analyses, factor analysis and reliability analysis, together with feedback from participating doctors and comments from participating patients, the questionnaire was revised and reduced to 25 items. Reasons for exclusion were high missing rates (>5%), low variance, factors with an eigen-value <1, low factor loading and/or negative influence on Cronbach’s alpha. Additionally, items that were judged to add little or no new information, or were experienced as unclear, ambiguous or irrelevant were omitted. During this process, all items on availability, access, equipment and building were removed, and the number of items on experiences with the auxiliary staff was reduced to two, in addition to waiting time. The items on emotions were rephrased due to unsatisfactory missing rates and item loadings (see further discussion below). Further, the overall satisfaction items did not comply with psychometric requirements and were taken out, except one that was kept for validation purposes. The six remaining dimensions were named positive and negative communication, information, result of the consultation, emotions and experiences with the auxiliary staff.

**Phase 3**

A second survey was then carried out among general practice patients. Thirty-four doctors were recruited at random on a voluntary basis. The majority of the
Medical items were added, including age, gender, reason for consultation, previous medical experiences and self-assessed status of health. Three items covered waiting time, time spent with the doctor and whether they had seen their own doctor. For validation purposes, four yes/no questions on unfulfilled expectations were included. Finally, one 5-point question on overall satisfaction from very satisfied to rather dissatisfied completed the supplementary questions.

The PEQ consisted of 14 items structured as statements, with degree of agreement recorded on a 5-point Likert scale. Six items were questions with response pattern on a 5-point scale with end points from ‘no more’ to ‘much more’, and from ‘nothing’ to ‘a lot’. Five questions were formed on 7-point scales from worried, sad, frustrated, fatigued and tense, to relieved, cheerful, calm, strengthened and relaxed, respectively (Table 1).

Data transformation and statistical analyses
Negatively worded items were turned to give all item scores the same direction. Histograms and descriptive analyses were made. The dimensionality of the 25-item version was investigated by maximum likelihood factoring followed by varimax rotation. Factors with an eigen-value >1 were retained. Minimum item loading was 0.6. Cronbach’s alpha was applied as a measure of reliability (internal consistency). As one aim was to reduce the number of items, each item was scrutinized for its contribution to variation, validity, reliability and content before a final decision to retain it was made.

Sum scales were computed by summing items, divided by the number of items within each score. Correlations were assessed by Spearman’s correlation coefficient. Convergent validity was accepted if an item correlated more highly with its own than with other scales. Maximum allowable inter-scale correlation was related to the internal consistency of each scale (Cronbach’s alpha). The inter-item correlations were also calculated. Bivariate calculations between scales and validation questions were made by Z-test, Mann–Whitney and Kruskal–Wallis tests due to skewed scales and ordinal data. Additionally, parametric calculations were performed (Student’s t-test).

Ethics
The Regional Ethics Committee approved the study.

Results
The patients
A total of 1092 out of 1431 questionnaires were completed, which gives a response rate of 76%.

Mean patient age was 47 years (SD 20), ranging from 1 to 91 years; 744 (67%) were females, 618 (57%) were married or cohabiting, 285 (26%) had received higher education, 312 (29%) patients had seen a female doctor, and 823 (75%) had been to their personal doctor.

The factors
Table 1 shows the result of the final maximum likelihood factor analysis with varimax rotation. The final factor model was appropriate according to the Kaiser–Meyer–Olkin measure (0.8) and Bartlett’s test of sphericity (0.000).13–15 The five retained factors were named communication, emotions, short-term outcome, barriers and relations with the auxiliary staff. They accounted for 68% of the total measured variance. The five factors corresponded to the six postulated dimensions; the short-term outcome factor incorporated the items on information and results of the visit. Seven items with low disparity and/or lesser factor loading and/or a negative correlation to the value of Cronbach’s alpha were excluded.

Apart from the items on emotions, the proportion of items missing was <3%.

Emotion items
In the first survey, 10 emotional items were formed as questions with responses on a 5-point scale from ‘very much’ to ‘not at all’. The missing rate was ~10%, several items especially on negative emotions were unacceptably skewed and all items on positive emotions scored low on the factor analysis. Hence, the presented modification to the 7-point scale included both positive and negative feelings.

In the final survey, all five items on emotions had a significant amount of missing data, which varied from 11 to 17%. Most patients described various degrees of positive emotional reactions. However, a number of patients also reported negative reactions; 24% described themselves as weary, while 10% left the consultation room feeling worried, tense or sad. A noteworthy proportion assigned their emotional mood midpoint between cheerful and sad (26%), strengthened and worn out (32%).
relieved and worried (20%), and relaxed and tense (21%). Only 5% reported frustration. This item also had a low factor loading and was therefore excluded. Factor loadings for the remaining four items were all above 0.72.

Due to unanimous agreement between patients and experts on the importance of the emotional theme, and also on the importance of the factor in the factor analysis, the remaining four items were retained in the final PEQ version (Appendix).

**Convergent/discriminatory validity and reliability estimates**

All items correlated more highly to their own scale than to other scales (complete data not shown); item to own scale correlation coefficients varied between 0.69 and 0.86. The inter-factor correlation coefficients were <0.43 for all factors. The reliability estimates of internal consistency (Cronbach’s alpha) were between 0.77 and 0.90 for four factors, and 0.54 for the one factor with two items only (Table 1). Total reliability for the all 18 items was 0.82.

The inter-item correlation coefficients for all items were greater within factors (0.5–0.7) than between factors (0.05–0.46).

**The scales**

The resulting sum scales for each of the five factors are given in Figure 1A–D. Four scales run from 1 to 5, and the emotion scale runs from 1 to 7. A high score represents a good communication experience, positive emotions, positive consultation outcome, no communication barriers and good relations with the staff. Not unexpectedly, communication, barriers to communication and experience with the staff turned out rather skewed, while short-term outcome and emotions provided more even distributions. Nevertheless, 48% of the patients described their experiences with communication as less than optimal, detected some communication barriers in 70%, and reported less helpful experiences with the auxiliary staff in 55% of the consultations. Furthermore, 24% left with negative or no positive feelings, while 48% of the patients scored below the median value of 3 on the outcome scale.

**The validation questions**

Ten per cent of the patients wanted more done (i.e. tests, referrals), 16% had additional questions and 19% wanted better explanations. These patients scored significantly more negatively on communication, emotions, short-term outcome and experience with the staff, and reported significantly more communication barriers.
FIGURE 1  (A–E) Sum scales for each of the five factors illustrated by histograms and statistical properties [mean, median, standard deviation (SD) and 95% confidence interval (CI)]. A high score represents a good communication experience, positive emotions, positive consultation outcome, no communication barriers and good relations with the staff.
(P ≤ 0.001). The overall satisfaction item showed that 60% of the patients were very satisfied with the visit, 33% were fairly satisfied, while 8% were slightly to very dissatisfied. A statistically significant difference according to this variable was also shown for all five factors (P < 0.001), confirming the hypothesized relationship between the various elements of experience and overall satisfaction.

Discussion

To our knowledge, this study presents the first consultation-specific questionnaire on patient experiences, not limited to satisfaction terms. It is also the first questionnaire developed throughout in a Scandinavian primary care setting. From the qualitative starting point throughout two large-scale surveys, it became apparent that the personal interaction, in particular with the doctor, and the take home message in terms of insight, knowledge, results and feelings contributed most to the direction and rating of the experience.

The strong emphasis on various aspects of the doctor–patient relationship was in line with previous literature. With regard to information and results, we know that many patients want an understanding of their medical problems, and value medical information as a way of coping with the uncertainty of illness. The importance of consultation-specific short-term results is supported by reports in which discussion of treatment was a predictor of visit satisfaction, and that request fulfillment accounted for 19% of the variance in satisfaction with the clinical consultation.

Some aspects more or less integrated in satisfaction questionnaires received little or no attention in the focus group discussions, and failed to meet the various criteria for inclusion in the final PEQ. This could be taken as an expression of relative insignificance as compared with the personal meeting between health care providers and patients. In general assessments of quality in health care, aspects such as availability, accessibility, cost, equipment, building, and general or future satisfaction may be more important.

Doctors' technical skill has been regarded as one of the four most important dimensions of patient satisfaction, but not so in the PEQ. The explanation we would suggest is that these differences are rooted in cultural dissimilarities. Patients in primary care in Norway seem to take doctors' qualifications for granted, and comments about abilities were related to communicative and not technical skills. Correspondingly, the physical examination did not seem very significant as such, seemingly because it was considered adequate and in line with patients' modest expectations. In more competitive health care environments with a stronger customer focus, such as in the USA, these aspects may well play a more prominent role.

The questionnaire presents scales of patient experiences in five different domains. As an expression of their sensitivity, the scales on inter-human aspects, e.g., communication (with the doctor), barriers (to good interaction) and relationship with the auxiliary staff, were rather skewed towards approval, even though great care was taken to neutralize potential criticism in order to reduce acquiescence response set bias. Nevertheless, approximately one in two respondents expressed areas for some improvement in communication and experience with the staff, while two out of three detected interaction barriers in the consultation. It could be argued that many patients with less than optimal scores did reply close to 'the top', and may therefore be quite contented. It is, however, important to recognize that positive scores on these scales do not necessarily signify a good experience. It is difficult to express negative opinions. In connection with negative reaction, patients' language tends to be evasive, modest and non-committal. Therefore, we advocate that on topics where social desirability is a well-known obstacle, a small deviation should be viewed as a potential for improvement.

Further, the scales on consultation-related emotions and perceived outcome showed an advantageous variation. The normal distributed outcome scale demonstrates a large range of experiences. It is thought-provoking that almost every second patient gained little or no insight into what to do and what to expect in connection with their medical problem, and did not think the visit would contribute to fewer problems or that it would influence notably their way of behaving. It is beyond the scope of this paper to discuss fully the implications of this finding. However, a need for increased efforts in educational and behavior modification techniques in patient education, that go beyond explaining and prescribing, does seem warranted.

In our previous study, we found that emotional responses were present and were important to patients, even in consultations that initially were described as short, uncomplicated and no ‘big deal’. Furthermore, although emotions in the here and now seldom were addressed in the medical visits, the patients really appreciated it when they were. Nonetheless, this emotional factor represents a challenge for improvement in the PEQ. Although important, emotions seem difficult and threatening to express, in particular when they are negatively directed towards another person, e.g., anger or frustration. The present emotional module does fulfill psychometric criteria, but the missing rate for this one scale is definitely too high. In future versions, we will again rephrase these items, by focusing more on moderate wording and limiting expressions.

The PEQ is short and can be completed in a few minutes in the waiting room. The overall high response and completion rate support acceptability. Face and content validity was ensured through extensive qualitative and quantitative analyses. Construct validity was confirmed...
by factor analysis in two surveys with a large number of patients from various parts of Norway, and by comparison with several validation questions on unfulfilled expectations and overall satisfaction. Reliability was excellent for four of the five scales, and satisfactory for the fifth two-item scale.

Further evidence for construct validity will be provided by examining hypothesized differences of scores by characteristics of the patients (e.g. age, gender, reason for encounter, previous medical experiences and self-assessed status of health) and of the medical visit (e.g. waiting time, time spent with the doctor, usual doctor and doctor’s gender). The ability of the questionnaire to capture differences between individual doctors or units is equally important, and will be addressed in a follow-up paper.

In conclusion, the presented results support the reliability, validity, acceptability and usefulness of a new patient experience questionnaire with emphasis on interaction, emotion and consultation. Although it will be the aim of future studies to perfect it, we advocate that the PEQ may already be put to use for scientific as well as practical purposes, for instance visit-specific care quality assessments. Most of all, it may be of use for primary care doctors who want feedback from their patients on the function of their doctor–patient relationships in terms of interaction, emotion and consultation outcome.

Acknowledgements

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References

11 Steine S, Lørum E, Finset A. Hva er viktig for pasienten i møtet med allmennmøtterikeren? [The most important consultation elements for primary care patients.] *Tidsskr Nor Lægeforen* 2000; 120: 349.
Appendix

PEQ
Patient experience questionnaire
2000

In order to provide better service, we ask for your experience in this medical visit, what it felt like for you and what you think it will mean to you and your health situation

(Please answer all questions, even if you saw your doctor without any specific ailment or problem in mind)

Outcome of this specific visit

1. Do you know what to do to reduce your health problem(s)?
   (Or how to prevent problems?)
   - Much more
   - Some more
   - A bit more
   - Not much more
   - No more

2. Do you know what to expect from now on?
   - Much more
   - Some more
   - A bit more
   - Not much more
   - No more

3. Will you be able to handle your health problems differently?
   - No, not at all
   - Not much
   - A bit
   - Some
   - A lot

4. Will it lead to fewer health problem(s)?
   (Or help prevent problems?)
   - No, not at all
   - Not much
   - A bit
   - Some
   - A lot

Communication experiences

5. We had a good talk
   - Agree completely
   - Agree
   - So-so
   - Disagree
   - Disagree completely

6. I felt reassured
   - Agree completely
   - Agree
   - So-so
   - Disagree
   - Disagree completely

7. The doctor understood what was on my mind
   - Agree completely
   - Agree
   - So-so
   - Disagree
   - Disagree completely

8. I felt I was taken care of
   - Agree completely
   - Agree
   - So-so
   - Disagree
   - Disagree completely

Communication barriers

9. It was a bit difficult to connect with the doctor
   - Agree completely
   - Agree
   - So-so
   - Disagree
   - Disagree completely

10. Too much time was spent on small talk
    - Agree completely
    - Agree
    - So-so
    - Disagree
    - Disagree completely

11. It was a bit difficult to ask questions
    - Agree completely
    - Agree
    - So-so
    - Disagree
    - Disagree completely

12. Important decisions were made over my head
    - Agree completely
    - Agree
    - So-so
    - Disagree
    - Disagree completely

Experience with the auxiliary staff

13. I sensed that other patients could listen in when I was talking to the staff
    - Agree completely
    - Agree
    - So-so
    - Disagree
    - Disagree completely

14. I felt like one of the crowd
    - Agree completely
    - Agree
    - So-so
    - Disagree
    - Disagree completely
Emotions immediately after the visit

After this visit I felt:

(Please circle one number for each line)

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<tr>
<th>Strengthened</th>
<th>Worn out</th>
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Thank you for your time and collaboration!