A short questionnaire for measuring the quality of patient visits to family practices

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Abstract

Objective. To describe a short questionnaire for measuring the quality of patient visits to family physician practices, and to assess the questionnaire’s validity and reliability.

Design. Multi-stage research was carried out in three phases: Phase I—qualitative research based on 36 in-depth interviews; Phase II—quantitative research using a questionnaire to survey 360 respondents; and Phase III—quantitative research using a shortened version of the questionnaire to survey 1330 respondents. The reliability of the questionnaire was measured by using Cronbach’s α coefficient.

Setting. Family physician practices in Poland.

Participants. Adult patients of family physicians.

Intervention. None.

Main Outcome Measures. The patient–doctor relationship and primary health care availability.

Results. A final questionnaire was produced with 16 items in three components: (1) patient–doctor relationship and consultation outcome; (2) barriers and difficulties; and (3) accessibility of care. For each component, the Cronbach’s α values were 0.92, 0.82 and 0.64, respectively. The overall reliability for all 16 items was 0.92.

Conclusions. The Quality of Visit to Family Physician questionnaire is a reliable tool that can be used by family physicians to obtain feedback from patients about patient–doctor relationships and visit outcomes, barriers and difficulties experienced by patients in seeking family physician care, and the availability of care.

Keywords: quality of health care, primary care, family practice, questionnaires, patients

Introduction

Assurance of a high level of quality of health care is a constant challenge faced by every health-care system. The patient–doctor relationship and health care availability are important determinants of quality in the primary care setting [1–6]. Availability is the ease with which a person may receive care [7]. The patient–doctor relationship is more difficult to define. According to Donabedian [7], the doctor–patient relationship while listing the characteristics of a good doctor–patient relationship, draws attention to their dual role; is not only a source of patient satisfaction, it also serves to reassure and encourage the patient. The positive dimensions of doctor–patient relationships are: facilitation of the patient’s expression of feelings and expectations related to his/her health care, conveyance of clear information to the patient, establishment of mutually agreed upon goals, promotion of an active role for the patient in achieving a positive outcome, and provision of empathy and encouragement [8].

In Poland, similar to many other countries in Central and Eastern Europe, the quality of care from the patient’s perspective has become a focus of attention only within the last two decades [4, 9–11]. Still, most research on patient satisfaction centered on the quality of hospital care, while few studies addressed primary care. Moreover, researchers encountered methodological problems, in particular a lack of ready-to-use, valid and reliable instruments. In the majority of Polish studies, questionnaires were prepared by the researchers themselves [11]. Some tried to adopt foreign instruments (e.g. EUROPEP) to the Polish situation [12].
The National Center for Quality Assurance in Health Care in Poland designed its own questionnaire to measure patient satisfaction, which is now used in the process of accreditation of health-care institutions [13]. Numerous studies aimed at assessing the quality of health care have been undertaken, typically by measuring the level of patient satisfaction [2, 6, 14, 15]. Assessment of patient satisfaction provides meaningful information about the quality of health care; however, there are some limitations to satisfaction research. One of the pivotal problems is that patient satisfaction surveys deliver little variation of responses, with the majority of respondents expressing positive opinions [16]. Current research trends in assessing the quality of care have shifted toward obtaining detailed responses from patients about their experiences, rather than simply evaluating ‘satisfaction’ by using categorical responses such as very good, good, average, bad and very bad [17–19]. It is a known paradox in medical literature that ‘patients can be satisfied with care that is not high quality and can be dissatisfied with high-quality care’ [20]. Using a mix of qualitative and quantitative research methods to assess quality can address this problem. Qualitative methods such as in-depth interviews are an essential part of any attempt to learn about how patients define quality and describe experiences with the health-care system [20]. In Poland, qualitative data on patient evaluation of health care are very scarce, and quantitative data prevail [11].

This paper represents an attempt to develop a short, reliable questionnaire that takes into account issues that are important from the patient’s point of view and avoids the measurement solely of patient satisfaction with care. It describes the assumptions and procedures used in creating the questionnaire, application of the questionnaire to assessing the quality of visits to family practices, and estimates of its validity and reliability.

**Methods**

At the conceptual stage of the research we recognized a need for in-depth recognition of themes, priorities and feelings, as well as the terms used by patients to express their opinions and concerns. To this end, a qualitative research design was used to prepare a set of statements and questions for further quantitative studies [21, 22].

Multi-stage research was carried out in three phases: Phase I—qualitative research based on in-depth interviews of 36 patients; Phase II—quantitative research using a questionnaire to survey up to 600 patients; and Phase III—quantitative research using a shortened version of the questionnaire to survey up to 1500 patients. The study began in 2006 with a comprehensive literature review on patient satisfaction and experience of health care. In-depth interviews were conducted between May 2007 and January 2008. The first quantitative research was conducted in 2008, and the second between September 2008 and March 2009. There were no substantive changes within the primary care system in Poland during the time covered by our study. The questionnaires were distributed to primary care practices after verifying that the rate of respiratory tract infections was stable. Consent of the Bioethics Committee of the Medical University of Białystok was obtained in order to conduct the research.

During the first phase of research, in-depth interviews were conducted with 36 patients. A detailed description of the research and results of this part of the project were presented in another paper [23]. Nine family practices were deliberately chosen from different parts of Poland, encompassing both rural and urban environments (small and large cities). At each family practice, interviews with four patients, who had sequentially visited their family doctor, were conducted. The person conducting the interviews (LM) came to the family practice, described the purpose of the study to the patients, asked for permission, and then set an interview date.

For the most part, interviews were conducted at the patients’ homes. Open-ended interview questions included: ‘What are your experiences with the use of family doctor services?’, ‘Have you experienced any particularly dissatisfying situations?’, ‘What was your last visit to the family doctor like?’ The shortest interview lasted 25 min and the longest 2 h. With each patient’s consent, all interviews were recorded on tape and then transcribed into written form.

In-depth interviews were carried out to learn what questions to ask and how best to ask them when assessing the quality of a patient’s visit. In analyzing the content of the interview transcripts, it was established that the assessment of a family physician consists of the following components: the doctor–patient interaction, contextual factors (e.g. waiting time), general assessment, competence of the doctor and personality traits (e.g. nice, arrogant) [23]. In addition, a semantic analysis of the respondents’ statements provided information that was used for the development of the questionnaire from the linguistic side. Terms and words used by patients were applied in a subsequent survey questionnaire.

During Phase II, based on the results of the qualitative research in Phase I, a first draft of the questionnaire was designed, which included 70 questions about various aspects of family physician care and six questions on the respondent’s personal information. All questions (except one) were close-ended. In the single open-ended question, placed at the end of the questionnaire, respondents were asked for additional comments on physician care. Items to be included in the questionnaire were first discussed within a team (researcher, physician, nurse and sociologist) and then in consultation with patients. Confusing or ambiguous questions were removed, rewritten or replaced.

In this phase, quantitative research was conducted on a sample of 600 patients. Three geographic regions of Poland were selected: northeast, southwest and central. In each of these three regions, eight family practices were selected, located in both urban and rural areas. In each of these, 25 patients who made subsequent appointments were given the 76-question survey, which they filled out at home and returned by mail to the Department of Family Medicine and Community Nursing of the Medical University of Białystok. This was intended to increase the return rate of the questionnaires, which amounted to 60% (360/600). On the basis of
extensive statistical analysis (data not shown), i.e. descriptive statistics, cluster analysis, factor analysis, reliability calculations, as well as information obtained in responses to open-ended questions and consultations with various experts (family physician, sociologist, statistician), a second, abbreviated version of the survey was prepared for further quantitative studies. The reasons for excluding certain questions included the following: high missing rates, low variance and low factor loading. Additionally, we omitted questions that produced little variation in answers and those for which respondents frequently chose ‘difficult to say’ answers.

The third phase of the research involved a study using a shortened version of the questionnaire, which consisted of 30 questions and four personal information questions. Fifteen hundred questionnaires were distributed to 30 family practices throughout the country. Practices were selected by using lists of primary care practices which had signed contracts with the National Health Fund (NFZ) in 2008. In case of refusal, another institution was chosen. Finally, at least one practice in each of the 16 regional branches of the NFZ was selected; in some branches there were two practices and in a few there were three. In each practice, 50 questionnaires were distributed to consecutive patients who came to their family physician. Respondents filled out an anonymous questionnaire immediately after the appointment and placed it in a specially prepared box. The staff working at the reception desk (usually nurses) oversaw the distribution of the questionnaires in accordance with the instructions they had received. The survey was intended for adults only.

**Questionnaire**

Nineteen questions from 30 were related to family physician visits. Other questions concerned: health self-assessment (one question), reporting of a chronic disease (two questions), the reason for visiting the doctor (one question), the frequency of visits (one question), whether the visit was to one’s personal doctor or to another doctor (one question), and recommending a given doctor to other patients (one question). For the purposes of validation, there was a question about satisfaction with the visit and a question about meeting expectations during the visit. In addition, there were two open-ended questions. Out of the 19 key questions, 16 were statements with five categories of responses (from ‘definitely do not agree’ to ‘definitely agree’) and three questions were statements with five categories of responses (from ‘definitely not’ to ‘definitely yes’). Both the statements and questions were formulated positively and negatively (Table 1). Prior to analysis, the negatively formulated statements were transformed so that a higher rank of response corresponded to a better assessment. The final version of the questionnaire after analysis is presented in the appendix.

**Statistical analysis**

Statistical analyses were performed using Statistica version 8 (StatSoft Inc., Tulsa, OK, USA). Principal component analysis with Varimax rotation was performed to indicate which statements and questions examine similar aspects of the quality of visits (the set of such statements and questions were referred to as a ‘scale’). The aim of this analysis was to reduce the number of statements and questions to be included in the final questionnaire [24]. The Kaiser–Meyer–Olkin measure of sampling adequacy was used. Reliability was calculated by examining the scale’s internal consistency (Cronbach’s α coefficient). The desired alpha value is within the limits of 0.7–0.8; however, in the case of questionnaires for measuring patient satisfaction, the accepted value is above 0.60 [25].

**Results**

A total of 1330 completed questionnaires were returned out of the 1500 issued; a return rate of 88.7%. Nearly a quarter of the respondents (297; 22.3%) were in the 45- to

<table>
<thead>
<tr>
<th>Factors and items</th>
<th>Factor loading</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Factor 1:</strong> The doctor–patient relationship and consultation outcome (Cronbach’s α = 0.92; Percentage variance: 29%)</td>
<td></td>
</tr>
<tr>
<td>1. My physical and mental state improved after the visit to the doctor</td>
<td>0.81</td>
</tr>
<tr>
<td>2. A visit to the doctor usually results in an improvement in health</td>
<td>0.80</td>
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<tr>
<td>3. I feel calm after the consultation</td>
<td>0.78</td>
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<tr>
<td>4. I can always count on a solution or amelioration of my health problems</td>
<td>0.73</td>
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<tr>
<td>5. My doctor not only treats, but also gives advice on a healthy lifestyle</td>
<td>0.68</td>
</tr>
<tr>
<td>6. The doctor empathized with my situation</td>
<td>0.64</td>
</tr>
<tr>
<td>7. I know what to do for my particular health problem (or how to prevent health problems)</td>
<td>0.62</td>
</tr>
<tr>
<td>8. The doctor listened to me willingly and until the end</td>
<td>0.61</td>
</tr>
<tr>
<td><strong>Factor 2:</strong> Barriers and difficulties (Cronbach’s α = 0.82; Percentage variance: 21%)</td>
<td></td>
</tr>
<tr>
<td>1. I had a feeling that the doctor and I did not understand each other sufficiently</td>
<td>0.71</td>
</tr>
<tr>
<td>2. I usually have difficulty attaining referrals for diagnostic tests</td>
<td>0.71</td>
</tr>
<tr>
<td>3. I usually have difficulty attaining referrals to specialists</td>
<td>0.71</td>
</tr>
<tr>
<td>4. I had difficulty asking the doctor questions</td>
<td>0.69</td>
</tr>
<tr>
<td>5. The doctor devoted too little time to me</td>
<td>0.62</td>
</tr>
<tr>
<td><strong>Factor 3:</strong> Accessibility of care (Cronbach’s α = 0.64; Percentage variance: 13%)</td>
<td></td>
</tr>
<tr>
<td>1. Were the nurses nice and polite during registration?</td>
<td>0.74</td>
</tr>
<tr>
<td>2. Was it easy to make an appointment to the doctor at a convenient time?</td>
<td>0.72</td>
</tr>
<tr>
<td>3. Did you have to wait too long in the waiting room for your visit?</td>
<td>0.66</td>
</tr>
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</table>
55-year-old age group. There were more women than men (823; 61.9%); nearly half the respondents had secondary education (642; 48.3%); and nearly one-third resided in a city of 100 000 to 500 000 inhabitants (411; 30.9%). Almost every other person (48.4%) declared a chronic illness or long-term health problem. Three quarters of the respondents (987; 74.2%) were on a visit to their personal family doctor and 25.8% saw a different family doctor from the one they were registered with.

The final factorial model was adequate according to the Kaiser–Meyer–Olkin measure (0.93). Nineteen statements and questions included in the questionnaire were subjected to factorial analysis, yielding three main components with an eigenvalue greater than 1 (Table 1). The content of the items in particular factors enabled them to be named: ‘doctor–patient relationship and consultation outcomes’, ‘barriers and difficulties’ and ‘accessibility of care’. These three factors explain 63% of the variance (factor 1, 29%; factor 2, 21%; and factor 3, 13%). Three statements with low factor loading (<0.6) were excluded from further analysis; these were the following: ‘I had the opportunity to tell the doctor about my problem’; ‘I felt comfortable during the doctor’s visit’; ‘I felt irritated/annoyed after my appointment with the doctor’. The reliability of each scale of the questionnaire, as measured with Cronbach’s α coefficient, was 0.92, 0.82 and 0.64 (Table 1). The overall reliability for all 16 items was 0.92.

All statements and questions correlated more highly with their own than with other scales. The correlation coefficients for particular scales were as follows: from 0.72 to 0.86 (scale 1), from 0.73 to 0.81 (scale 2) and from 0.70 to 0.81 (scale 3). The correlation coefficients between the factors were >0.48 for all factors. The correlation coefficients between the statements and questions were larger within factors (from 0.6 to 0.81) than between factors (from 0.06 to 0.48). The distributions of total points in the particular scales are represented in Figs 1–3. High scores indicate a good relationship between patient and doctor, lack of difficulties and good accessibility of care. The doctor–patient relationship received the best scores—32.7% of respondents gave the maximum number of points (Fig. 1). Lower scores were achieved on questions about barriers and difficulties, where the maximum number of points was indicated by 15.5% of respondents (Fig. 2), and on questions about the accessibility of care, where 15.4% of respondents indicated the maximum number of points (Fig. 3). Although the distribution of answers shows that positive opinions predominate, the selection of questions and the way of asking them in the questionnaire allowed us to obtain greater variation in the answers.

**Discussion**

We have presented the results of our multi-stage research, combining qualitative with quantitative methods in order to develop a questionnaire to assess the quality of family physician consultations from the patients’ perspective. This is the first questionnaire developed for Polish patients in the context of primary care in Poland. Development and testing of the new questionnaire was conducted on a large sample of patients—qualitative research on 36 respondents and a quantitative study encompassing initially 360 and subsequently 1330 respondents.

In family medicine, care directed toward the patient as a person and not just at his/her illness is particularly important. The patient comes to the family physician not only with his/her disease or problem, but also with his/her own idea of the nature, cause(s) and possible consequences of the problem. Likewise, the doctor’s task is not only to diagnose and treat the ailment, but also to understand the patient’s
fears and expectations [26]. Our research confirms that effective communication is a key element of how patients assess their visits to family practices.

A similar study was carried out to investigate the experiences of patients of primary health-care practices in Norway [19]. The authors also developed a survey tool, which consisted of the following dimensions: outcome of the visit, experience in communication, barriers to communication, experience in contact with support staff and patients’ emotions immediately after the visits [19]. Both studies belong to the same trend in research, which moves away from measuring the level of patient satisfaction, focusing rather on patients’ experiences related to care. This change of research perspective implies wider use of qualitative methods of a narrative type.

In both our study and the aforementioned Norwegian study, the doctor–patient relationship was found to be a key element in describing the quality of consultations in primary health care. Some elements of the assessment of this relationship are shared by the two studies, such as informing the patient about how to proceed in the event of a health problem, opportunities for asking questions during a visit and emotional themes. Other aspects of the assessment appear to be specific to Polish patients, such as difficulties in obtaining referrals for additional testing or referrals to specialists. This is probably due to the fact that Polish

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Figure 2 Sum of points of assessments of barriers and difficulties—mean, median, quartile, standard deviation (scale 2).

Figure 3 Sum of points of assessments of accessibility of care—mean, median, quartile, standard deviation (scale 3).
patients prefer to be treated by specialists, so that getting referrals is an important metric of patient evaluation in Poland. In evaluating the quality of health care, Polish patients put heavy emphasis on the qualifications of health professionals. They believe that high-quality care can only be provided by specialists [27]. This illustrates how different cultural contexts can influence patients’ assessment of the quality of visits, a factor which has also been mentioned by other studies [28].

Development of a new measurement tool requires an examination of its reliability and validity. The reliability of our proposed questionnaire, as measured by the value of Cronbach’s $\alpha$, was very good (above 0.7) for two scales (‘doctor–patient relationship and consultation outcome’ and ‘barriers and difficulties’) and sufficient for the third scale (0.64) (‘accessibility of care’). The lower reliability of the third scale may be due to the small number of questions it contained.

Validity is a much more complex concept [29, 30]. In the present study, construct validity was assessed by principal component analysis. Content validity and face validity were secured throughout the process of developing the questionnaire survey. The first step was to determine the scope of the evaluation in the qualitative research phase. Next, to determine the content and face validity, the results of the principal component analysis and information obtained from experts (family physician, sociologist and statistician) were used.

To assess the health-care system from the patients’ point of view, researchers typically use questionnaires of their own design or adapt foreign-language tools. We agree with authors of other studies [19] that most satisfaction items originate from cultural settings where ‘consumerism’ is a prominent feature of medical care. We believe that questionnaires for evaluation of the quality of primary physician care should be developed in the country where they will be applied. Developing country-specific questionnaires that assess the quality of consultations in primary health care has the advantage of tailoring the questionnaire to the peculiarities of the primary health-care system in the given country. Our proposed questionnaire is short and can be completed by the patient in the waiting room in a few minutes. The observed high return rate and the high level of completion of the answers indicate that the tool was readily accepted by the patients.

In summary, the Quality of Visit to Family Physician questionnaire is a relevant, reliable, short and acceptable tool for everyday medical practice. The questionnaire may be of use to family physicians who want to obtain feedback from patients about doctor–patient relationships and visit outcomes, barriers and difficulties, and the availability of care.

**Funding**

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**Quality of Visit to Family Physician Questionnaire 2009**

The aim of our survey is the improvement of family physician care by understanding patients’ experiences. We ask you for honest responses. Please answer all questions.

**The patient–doctor relationship and consultation outcome**

1. My physical and mental state improved after the visit to the doctor
   - definitely do not agree ☐
   - rather do not agree ☐
   - do agree or do not agree ☐
   - rather agree ☐
   - definitely agree ☐

2. I feel calm after the consultation
   - definitely do not agree ☐
   - rather do not agree ☐
   - do agree or do not agree ☐
   - rather agree ☐
   - definitely agree ☐

3. The doctor empathized with my situation
   - definitely do not agree ☐
   - rather do not agree ☐
   - do agree or do not agree ☐
   - rather agree ☐
   - definitely agree ☐

4. The doctor listened to me willingly and until the end
   - definitely do not agree ☐
   - rather do not agree ☐
   - do agree or do not agree ☐
   - rather agree ☐
   - definitely agree ☐

5. I know what to do for my particular health problem (or how to prevent health problems)
   - definitely do not agree ☐
   - rather do not agree ☐
   - do agree or do not agree ☐
   - rather agree ☐
   - definitely agree ☐

6. I can always count on a solution or amelioration of my health problems
   - definitely do not agree ☐
   - rather do not agree ☐
   - do agree or do not agree ☐
   - rather agree ☐
   - definitely agree ☐

7. A visit to the doctor usually results in an improvement in health
   - definitely do not agree ☐
   - rather do not agree ☐

**Acknowledgement**

We would like to thank all patients who participated in the study and the family doctors for making this research at their primary health-care facilities possible.
Barriers and difficulties
9. I had difficulty asking the doctor questions.
   –definitely do not agree
   –rather do not agree
   –do agree or do not agree
   –rather agree
   –definitely agree

10. I had a feeling that the doctor and I did not understand each other sufficiently.
    –definitely do not agree
    –rather do not agree
    –do agree or do not agree
    –rather agree
    –definitely agree

11. The doctor devoted too little time to me.
    –definitely do not agree
    –rather do not agree
    –do agree or do not agree
    –rather agree
    –definitely agree

12. I usually have difficulty attaining referrals for diagnostic tests.
    –definitely do not agree
    –rather do not agree
    –do agree or do not agree
    –rather agree
    –definitely agree

13. I usually have difficulty attaining referrals to specialists.
    –definitely do not agree
    –rather do not agree
    –do agree or do not agree
    –rather agree
    –definitely agree

Accessibility to care
14. Was it easy to make an appointment to the doctor at a convenient time?
    –definitely not
    –rather not
    –difficult to say
    –rather yes
    –definitely yes

15. Were the nurses nice and polite during registration?
    –definitely not
    –rather not
    –difficult to say
    –rather yes
    –definitely yes

16. Did you have to wait too long in the waiting room for your visit?
    –definitely not
    –rather not
    –difficult to say
    –rather yes
    –definitely yes

References


