

Research paper

Back pain management in primary care: development and validity of the Patients' and Doctors' Expectations Questionnaire

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ABSTRACT

Background Back pain is a common disorder, with the doctor being the first point of contact for help. Biopsychosocial management of back pain has been shown to be problematic. Meeting patients' expectations is alleged to play a vital role in concordance, adherence and satisfaction. A more potent aspect, however, could be a state of matched patient–doctor expectations with regard to the consultation process and outcome, but this aspect has not been fully investigated and there is currently no valid and specific measure of this dimension.

Aim To report on the development of a newly designed patient and doctor expectations questionnaire that measures the matching of their expectations with regard to the back pain consultation in primary care, and to establish the validity and internal consistency of the new tool.

Methods A literature review was carried out and a draft 36-item questionnaire was developed. Thirty-eight subjects (7 researchers, 20 patients and 11 doctors) tested the questionnaire. Each subject gave feedback on the questionnaire design and was also asked to fill in a previously validated tool, the Patients' Intentions Questionnaire (PIQ), to estab-

lish the concurrent validity of the newly designed expectations questionnaire. Construct validity was established by calculating the Spearman correlation coefficient, and Cronbach's alpha was computed to reflect the internal consistency of the instrument.

Findings The results of the validity questionnaire showed that the questionnaire was perceived as simple, clear and easy to understand and appropriate to the intended aim. Spearman correlation coefficients between the Patients' Expectations Questionnaire and PIQ showed significant correlation ($r = 0.65$), reflecting good concurrent validity, while Cronbach's alpha was 0.831, reflecting good internal consistency.

Conclusion The newly designed questionnaire showed good face, content and construct validity as well as good internal consistency, and thus can be used as a valid and reliable measure for back pain-specific expectations of the process and outcome of the consultation in primary care settings.

Keywords: back pain, congruence, expectations, matching, primary care, questionnaire

Introduction

Affecting up to two in three of the adult population during the course of a year, back pain is a very common disorder.^{1,2} Although most patients adopt self-management strategies, back pain is a leading reason for doctor consultation, hospitalisation and other health care service utilisation,³ with an estimated 20% of patients consulting their doctor about their condition.² Back pain is seen as one of the difficult and unrewarding conditions that doctors have to deal with in primary care.⁴ Biopsychosocial management of back pain in general practice has been problematical.⁵

Over the last few decades, research in primary care has focused on understanding factors related to satisfaction with health care, as well as ways to optimise expectations and enhance satisfaction with the back pain consultation. Patients' expectations of care are common and may play a vital role in adherence to the treatment or advice given. Doctors also seem to have their own expectations related to the consultation. Although it may seem that patients' expectations and satisfaction with the consultation may be the key elements for a successful consultation, doctors' expectations may be another strong contributing factor to a successful consultation, in terms of higher quality of communication and interaction,⁶ higher satisfaction⁷ and better general health outcomes.^{8,9} The way and extent to which patients' and doctors' expectations are met, as well as patient–doctor agreement regarding diagnostic and treatment plans, may affect the consultation outcome, yet few previous studies have attempted to explore the congruence between patients' and doctors' back pain-specific expectations, and a valid measurement tool is lacking.^{10,11} A state of matched (and not just fulfilled) patients' and doctors' expectations is a critical prerequisite for improving management of back pain in primary care.

Patients have a wide variety of specific expectations for care that extend to both technical and interpersonal management.¹² Such expectations are measurable, and can have potentially important clinical consequences.¹³ However, little is known about doctors' expectations in relation to the consultation. Several studies have been conducted to explore different attitudes, behaviours and preferences doctors might have during back pain consultation in primary practice; however, doctors' back pain-specific expectations have not yet been investigated, apparently due to lack of valid measurement tools.

It is suggested that a mismatch between patients' and doctors' beliefs and expectations does exist with regard to different aspects of the consultation.^{14–16} Recent evidence reported a significant discordance and mismatch of patients' and doctors' expectations

of the back pain consultation in relation to management approach (biomedical versus biopsychosocial), treatment expectations and goals (reducing pain versus improving function), and the importance of diagnosis.¹⁷ Similarly, other evidence suggested a significant gap between patients' and general practitioners' (GPs') expectations with regard to referral and tests.¹⁸ Patients' expectations are reported to mainly relate to aspects of information, education, doctors' understanding, listening, and discussing problems or doubts,^{19,20} whereas diagnosis seems to be at the top of GPs' expectations list,²¹ along with education and providing information.^{15,22}

From a policy perspective, it is important that patients' as well as doctors' expectations are recognised, understood and optimised. Back pain care will benefit from research that critically looks at patients' and doctors' expectations.²³ Understanding patients' and doctors' expectations could improve the clinical process of care, health care delivery systems and health services research.¹¹ The importance of understanding and investigating such congruency between patients' and doctors' expectations prompted the need for this study. The study aims to investigate the validity of the newly designed Patients' and Doctors' Expectations Questionnaire (PEQ/DEQ) that directly measures expectations related to back pain consultation in primary care.

Methods

Questionnaire development

A literature review was carried out to produce a preliminary list of patients' and doctors' expectations related to aspects of the clinical encounter, doctors' characteristics, management strategies, attitudes and beliefs. For the purpose of this study, we defined expectations as anticipations or predictions formulated by the individual about specific occurrences or events that are likely to happen during a consultation.¹⁵ Both qualitative and quantitative studies that investigated patients' and doctors' expectations related to back pain management in primary care settings were reviewed. Data collected from the literature were used to produce a draft 36-item questionnaire consisting of two matched parts, one for patients' expectations and another, similar but adapted, for doctors' expectations. The questionnaire was designed to be self-administered, brief, understandable and easy to complete for adults aged over 18 years. The method of questioning chosen for each item was a five-point Likert-type scale asking for agreement or disagreement with the statement. This scaling method has been employed in other surveys and has the advantage

of being relatively easy for respondents to complete. For the purpose of this questionnaire, expectations were defined in this context as anticipations formulated by patients and doctors about specific actions, attitudes or interventions that are likely to happen during the consultation. Subsequently, the questionnaire went through several revisions for clarity and wording as well as relevance of questions through a series of discussions with patients, doctors and researchers during eight collaborative learning workshops within the Learning to Improve Management of Back Pain in Community project (LIMBIC; a quality improvement project funded by the UK Health Foundation). Several versions of the revised questionnaire were produced until version four (26 items) was ready for validity investigation.

Validity of the questionnaire

The first step in testing the questionnaire was to investigate the validity and internal consistency of the designed tool and the appropriateness of use of the questionnaire as judged by users, as well as to assess the feasibility of using the questionnaire for identifying the whole range of patients' and doctors' expectations and to address any potential problems. Thirty-eight subjects from three different user groups (7 researchers in the field of health and social care, 20 back pain patients and 11 doctors) were recruited from the LIMBIC project and the School of Health and Social Care of the host university and were used for testing the questionnaire. In order to test the validity and reliability of the questionnaire items, 11 doctors and 3 researchers were given the doctors' part of the questionnaire, while 4 other researchers and 20 patients were given the patients' part of the tool. All participating doctors were involved in direct patient care for at least 20 hours per week in general practice. All recruited patients had had a recent consultation for their back pain, were aged over 18 years, and were able to read and understand English. Exclusion criteria included a history of diagnosed mental disorder, dementia, psychosis, drug abuse, pregnancy, infectious diseases, severe disabling back pain, nerve root pain, inflammatory disorder, spinal surgery or a progressive comorbidity such as cancer. These exclusion criteria were imposed to obtain a sample of subjects of homogeneity and exclude those patients who might not be representative of the general back pain population.

Each subject was given a short feedback questionnaire to comment on the validity of the questionnaire, which included statements about the questionnaire characteristics, for example, questionnaire appropriateness, item difficulty and understanding, ease of completion, perceived usefulness, answer format, repetitiveness, attractiveness and administration time. Collecting the

opinions of such user groups allowed quantification which enabled quantitative face validity testing. Patients were also given an adapted version of the Patients' Intentions Questionnaire (PIQ) to establish the concurrent validity of the newly designed expectations questionnaire. The PIQ is used to measure patients' general expectations,²⁴ using 42 statements about what patients want from their doctor during a given visit.

Descriptive statistics (mean, range, confidence intervals and percentage) were used to present the range of patients' and doctors' expectations and the agreement scores with each expectations statement. Construct validity was established by calculating the Spearman correlation coefficients between each item and the total expectations scores. Cronbach's alpha was computed to reflect the internal consistency of the instrument. The Statistical Package for Social Science (SPSS) version 13 was used to carry out the statistical analysis using an α level of 0.05. Subsequently, the questionnaire was revised and modified and a two-part, 21-item PEQ/DEQ (version five) was produced (see Table 1).

Results

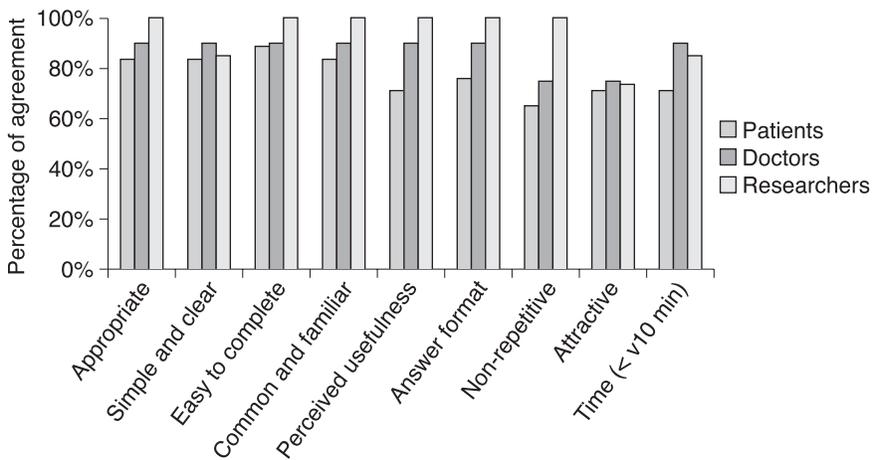
Table 2 shows the demographic data for subjects participating in validating the questionnaire. The feedback questionnaires given to users were analysed to test whether the questionnaire was acceptable to users (response rate), appropriate and simple (percentage of users able to fully and correctly complete the questionnaire), and brief (time taken to complete), which reflect the face validity of the questionnaire. Initially, 30 patients, 16 doctors and 10 researchers were invited to participate in the pilot study. Twenty patients, 11 doctors and 7 researchers completed both the expectations and the validity questionnaires, with response rates of 67, 69 and 70%, respectively. All of the 38 participants were able to fully complete the questionnaire as required. The results of the validity questionnaire showed that the questionnaire was perceived as simple, clear and easy to understand with percentages of agreement of 85, 91 and 100, respectively. Questions were perceived as appropriate to the intended aim stated in the questionnaire, with percentages of agreement of 85, 91 and 86, respectively. Nearly all responders agreed that the items were common and familiar questions that most users would be able to understand and answer (85, 91 and 100%, respectively). Seventy per cent of patients, 91% of doctors and 100% of researchers participating perceived the questionnaire as useful and filling it in as a worthwhile task. However, aspects of repetition and attractiveness of the questionnaire scored low agree-

Table 1 Validated version five of the Patients' and Doctors' Expectations Questionnaires (PEQ/DEQ)

PEQ	DEQ
I expect my GP to ask about my expectations	I expect to ask the patient about their expectations
I expect to express my expectations to my GP	I expect the patient to express their expectations
I expect my GP to ask about any unmet expectations at the end of the consultation	I expect to ask the patient about any unmet expectations at the end of the consultation
I expect my GP to be warm and friendly during the consultation	I expect to be warm and friendly during the consultation
I expect my GP to show interest and be willing to listen to my problems	I expect to show interest and be willing to listen to the patient's problems
I expect my GP to discuss my fears and doubts	I expect to discuss the patient's fears and doubts
I expect my GP to ask about the impact of pain on my social life and emotional well-being	I expect to explore the impact of back pain on the patient's social life and emotional well-being
I expect my GP to take a full history of the current problem and all relevant past illness	I expect to take a full history of the current problem and all relevant past illness during the consultation
I expect a comprehensive physical examination to be done by my GP during consultation	I expect a typical back pain consultation to include a comprehensive physical examination
I expect my GP to refer me to a specialist or other service (e.g. physiotherapy)	I expect the patient to ask for referral
I expect my GP to order some tests or investigations	I expect the patient to ask for tests or investigations to be done
I expect my GP to prescribe some medication	I expect the patient to ask for a prescription/some medication
I expect my GP to give an adequate explanation of what might be the cause of the problem	I expect to give the patient an adequate explanation of what might be the cause of the problem
I expect to receive adequate information about the problem	I expect to provide adequate information about the problem
I expect to receive education about how to manage my pain and stress	I expect to give education about the management of pain and stress
I expect to receive information about prognosis	I expect to provide information about prognosis
I expect my GP to discuss my own beliefs about the problem and its possible causes	I expect to discuss with the patient their own beliefs about the problem and its possible causes
I expect my GP to discuss my own ideas about management	I expect to discuss with the patient their own ideas about management
I expect to be involved in the decision-making process	I expect to involve the patient in the decision-making process
I expect the consultation to be of adequate duration for me to express my needs and receive advice	I expect the consultation to be of adequate duration for the patient to express their needs and receive advice
I expect my GP to be able to help me with my back pain	I expect to be able to help the patient with their back pain

Table 2 Demographic data for the subjects

	Patients	Doctors	Researchers
<i>n</i>	20	11	7
Age (mean \pm SD) (years)	40 \pm 12	51 \pm 6	36 \pm 8
Gender			
Male	11	9	3
Female	9	2	4
Years with back pain	8 \pm 7	–	–
Years in general practice	–	19 \pm 9	–
Hours/weeks of patient care	–	> 20 \pm 9	–

**Figure 1** Results of the validity questionnaires

ment percentages of 65 and 70 for patients, 73 and 73 for doctors, and 100 and 71 for researchers. The majority of doctors and researchers were able to fill in the questionnaire in less than 10 minutes (91 and 86%, respectively), while only two-thirds of the patients were able to complete it in 10 minutes, with the remaining third completing it in 10–20 minutes (see Figure 1). The open feedback fields conveyed very useful messages about some items in the questionnaire and some suggestions about wording and re-formulating of some questions, which helped to improve the content of the questionnaire and ensured acceptable face validity of the questionnaire.

To test the construct validity of the questions as a good and valid measure of the construct of expectations, Spearman correlation coefficients were calculated between each item and the total expectations scores. Correlation coefficients were not significant for questions related to the reason for the encounter (Q1), the genuineness of patients' symptoms (Q6), knowing the cause of the problem (Q15), the ability of doctors

to help without need for referral (Q25), and the privilege of other health care professionals over the doctor (Q26), where Spearman correlation coefficients (r) were 0.114, -0.02 , 0.255, 0.169 and 0.219, respectively (see Table 3). These questions did not correlate well with other items in the questionnaire as well as the total expectations questionnaire. Spearman correlation coefficients between PEQ and PIQ total scores were calculated to establish concurrent validity. Correlation was significant at the 0.05 level, with $r = 0.65$ and $p = 0.002$.

To test the internal consistency of the questionnaire, Cronbach's alpha, a common measure of scale reliability, was calculated to be 0.83. Correlation coefficients were calculated if each item was deleted to determine what the value of alpha would be if that item was omitted. In other words, if the questionnaire is a reliable scale, no question should cause a substantial increase or decrease in alpha on deletion.²⁵ No specific question seemed to affect the overall reliability greatly, as shown in Table 4.

Table 3 Correlation coefficients between each question and the total expectations scores

Question	1	2	3	4	5	6	7	8	9	10	11	12	13
<i>r</i>	0.114	0.621*	0.360*	0.632*	0.503*	-0.002	0.297*	0.504*	0.623*	0.559*	0.551*	0.286*	0.427*
<i>p</i>	0.248	0.000	0.013	0.000	0.001	0.495	0.035	0.001	0.000	0.000	0.000	0.041	0.004
Question	14	15	16	17	18	19	20	21	22	23	24	25	26
<i>r</i>	0.563*	0.255	0.363*	0.539*	0.355*	0.453*	0.705*	0.567*	0.507*	0.455*	0.338*	0.169	0.216
<i>p</i>	0.000	0.061	0.013	0.000	0.014	0.002	0.000	0.000	0.001	0.002	0.019	0.156	0.00,96

* Significant correlation at 0.01 level.

Table 4 Cronbach's alpha for scale internal consistency and values of alpha if item was deleted

Alpha if item is deleted	1	2	3	4	5	6	7	8	9	10	11	12	13
	0.832	0.821	0.827	0.818	0.825	0.837	0.829	0.824	0.820	0.823	0.821	0.835	0.821
Alpha if item is deleted	14	15	16	17	18	19	20	21	22	23	24	25	26
	0.816	0.830	0.825	0.821	0.825	0.822	0.817	0.820	0.823	0.825	0.828	0.837	0.831

Alpha = 0.831.

Discussion

One of the concerns of medical care is fulfilling expectations and needs. Research in this area has been growing, but remains relatively sparse and encounters difficulties.^{13,19} Among these are the nature and great diversity of expectations, various ways of communicating them, and the disagreement in the literature about methods to identify, elicit and monitor expectations.¹⁹ Most studies have been concerned with expectations in general and not in relation to a specific symptom, yet expectations might be influenced by the specific problem.¹¹

Moreover, as to the complexity and diversity of expectations, there is no ideal method for measuring them.²⁶ Measurement approaches have been inconsistent and variable in terms of definition, content and design.²⁷ Different techniques have been adopted to capture such a construct, using variable definitions, with some defining expectation as anticipation,²⁸ perceptions²⁹ or beliefs,²⁶ and others describing it as wishes,¹³ wants or desires. The diversity of methods used for data collection included qualitative and quantitative approaches, ranging from unstructured interviews or focus groups to highly structured questionnaires with some asking questions prospectively and others retrospectively.²⁶ There is a need for a standardised definition and a consistent measurement procedure, as well as validated, purpose-specific measurement tools rather than generic ones. Better service outcome and higher levels of satisfaction are thought to be associated with higher patient–doctor agreement.^{7,8} However, valid tools for capturing the matching of patients' and doctors' expectations are lacking.

A valid tool is one that can measure what it is supposed to measure rather than reflecting some other phenomenon.³⁰ We defined expectations as what the individual anticipates will happen (which reflects his expectations), rather than what she or he wishes or wants to happen (which reflects the patient's desires). It is agreed that expectations are implicit anticipations or predictions that are not verbally communicated to doctors and usually do not reflect a valuation.³¹ It is important to ensure such definition when measuring expectations, to avoid confusion with desires or requests. A precise definition of expectations seems to be a minimal prerequisite for developing a valid measuring tool for such aspects. This was followed by formulating a set of items that reflects a range of personal, non-technical and technical related expectations. Expert judgement by means of continuous discussions with patients, doctors and researchers helped in refining, modifying and rephrasing the questionnaire items several times before version five was suggested to have a substantial degree of content validity.

Face validity is making a judgement about the appropriateness of a particular measuring tool in a given assessment situation through the process of simple inspection of that instrument, typically by non-expert users.³² However, as the judgement about the appropriateness of the instrument is made by inspection only, with little or no reference to any other kinds of information, if the person is a novice with regard to either the content or knowledge about measurement, then the usefulness of face validity judgements will be reduced.³² Accordingly, researchers with considerable expertise and knowledge were used as a subgroup for testing the validity of the questionnaire, in addition to patient and doctor subgroups.

Based on these previous testing procedures, the content, face, construct and concurrent validity as well as the internal consistency of the new instrument were demonstrated, reflecting the extent and degree to which the construct of expectations was successfully and accurately translated into a measurable, functional and operating form using version five of the PEQ/DEQ.

Implications

The implications and clinical relevance of the study findings can be related to three distinctive areas, i.e. current practice, research and education. The newly designed expectations questionnaire can be used in different ways in relation to current back pain management in general practice, for example, as an audit, quality monitoring or service improvement tool. The questionnaire can be administered pre-visit to explore the range of patients' expectations of the consultation, and then re-administered post-visit, to monitor how well the GP did in responding and addressing the patient expectations. It is worth noting that the questionnaire would not be used to identify the patient's needs and expectations in order for the GP to meet them, but rather would be used to evaluate the GP's ability to negotiate and adjust unrealistic, inappropriate or unjustified patient's expectations in a way that would enhance satisfaction and make the patient's experience positive. Most importantly, the tool can be used to objectively monitor and assess the matching of patient–GP expectations over time rather than in relation to a specific or single visit, thus promoting continuity of high-quality health care.

The questionnaire is the first tool to be developed to measure the matching of back pain patients' and doctors' expectations of the consultation. The tool, however, needs further testing to establish other psychometric and statistical properties, for example, factor loading using principal component analysis or the credibility of the measurement tool. Nevertheless, this tool will enable research into doctors' expectations

(e.g. Do they vary from one consultation to another and from one patient to another? Can they expand and contract according to the patient's characteristics, perceived pressure from patients, and time constraints?) and sources of unmatched patient–doctor expectations.

Finally, evidence suggested that educating GPs about identifying the patient's agenda improved patient perceptions of an enhanced patient–doctor relationship.³³ The current questionnaire could have several clinical benefits with regard to this perspective. For example, it could be a potentially useful self-audit tool for use by GPs and trainee GPs in general practice,³⁴ for monitoring of performance and identifying training needs, or for educational purposes at all training levels of the consultation skills.³⁵

Conclusion

The newly designed PEQ/DEQ showed good face, content and construct validity as well as good internal consistency, and thus can be used as a valid and reliable measure for back pain-specific expectations.

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ETHICAL APPROVAL

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CONFLICTS OF INTEREST

None.

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