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Psychometric properties of the new Patients' Expectations Questionnaire

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Psychometric properties of the new Patients' Expectations Questionnaire

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Abstract

The authors explore the development of the Patients' Expectations Questionnaire (PEQ) and examination of psychometric characteristics it encompasses by reviewing surveys of primary care and hospital outpatients before and after their clinic visit. Three scales were developed for Pre-visit Ideal and Realistic expectations, and Post-visit Experiences (met expectations), based on literature review, semi-structured interviews, and subsequently piloted and refined. Patients completed the questionnaire about their ideal and realistic expectations before they saw the doctor, and were asked if their expectations had been met afterwards. The results show the scales met acceptability criteria for reliability (Cronbach's alphas exceeded α 0.70), administration mode (interview and self-completion), and sample type (general practice and hospital). Split-half reliability was also acceptable. Adjusted odds ratios showed that post-visit experiences (met expectations), followed by feelings of control in life, and age, were the most powerful independent predictors of overall patient satisfaction ratings with the clinic visit, and independent self-ratings of whether their expectations had been met overall. This leads the authors to conclude that the PEQ as a self-report instrument, has good reliability and validity and covers the main types of patient expectations of ambulatory health care. It has policy potential for monitoring expectation management, and is thus of potential benefit to providers and purchasers of health services, and ultimately to patients.

Keywords

Quality indicators, patient expectations, patient satisfaction, psychometrics, measurement, questionnaire, scale development

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Introduction

In health policy, the importance of evaluating health services from a range of perspectives, including those of consumers, is widely recognized. Consumer evaluations are now an established component of health quality assessment, mainly via patient satisfaction and patient-based health outcome studies.¹⁻⁴ 'Satisfaction' is the pre-eminent measure of patient opinions, although it is not unproblematic. For example, although most patients report some degree of satisfaction with their care, it is unclear whether variations in satisfaction reflect variations in the health care organization, clinicians, or patients themselves.⁵ Aside from this, and the concept's unresolved multidimensionality, there have been discrepancies between qualitative accounts of dissatisfaction and quantitative evaluations from the same patients.⁶ Indeed, a review of the literature on satisfaction with health care noted problems establishing a tangible definition.⁷ This review also noted that a fifth of studies reviewed

considered patients' *expectations* as a potential predictor of satisfaction, although methods were weak and research findings lacked generalizability.^{8,9} A further review, limited to primary care settings, of patient pre-consultation expectations also suggested that health care expectations affected patient satisfaction, although again the research reviewed was weak.¹⁰ The literature often assumed that what people anticipate, or expect to receive, from their health care, compared with their perceptions of what they receive in practice, are potentially important in predicting patient satisfaction and dissatisfaction with their care, treatment and health outcomes. This literature is characterized by a lack of rigorous conceptualization and measurement. This fragmentation partly reflects the multidimensionality of expectations, a characteristic shared with 'satisfaction'.¹¹ Beattie et al.¹² referred to the conceptual confusion over the terms 'experience', 'perception' and 'satisfaction', which often results in these wrongly being used interchangeably. They stated that a more accurate account of quality of care can be measured

if questionnaires ask what patients have actually experienced, as opposed to their opinions of the experience. This strengthens the case for post-consultation questionnaires focusing on what the patient thought had occurred during the visit, rather than solely their satisfaction with it. However, both are required if patients' perceptions are also valued. The assessment of quality of care increasingly includes measurements of patient perception.¹³

In general psychological theory, expectations are complex beliefs, or values, resulting from cognitive processes, which are modified by experiences, or 'social learning'. Rotter^{14, 15} using social learning theory, distinguished between generalised and specific expectations (generalised expectations are held in situations in which a person has little or no previous experience, whereas specific expectations develop out of previous experience of a particular situation). Ideal expectations might be most prevalent for those without previous experience. Patients who have unformed expectations have no idea what to expect, whereas those with previous experience are more likely to have predicted than unformed expectations based on previous encounters. Rotter¹⁶ extended the theory to incorporate a measure of generalised expectancy – the locus of control.

Expectancy theory is regarded as particularly important in theories of behaviour. For example, role theory posits that human behaviour is guided by expectations, although there has been little analysis of their construction. There are many overlapping definitions of what patients expect from health services, concerning different expectation types (e.g. deserved, wants, ideals, hopes and desires, anticipations, realistic predictions), and relating to different components of health care: structures (e.g. buildings, equipment, staff), processes (e.g. waiting lists, staff-patient interaction), health outcomes (e.g. effects of health service on patients' health), and service types.¹⁷⁻²⁰ Thus, terminology is a significant issue in expectation studies, with a range of ambiguous terms being used to address different *types* of expectations. For example, what is expected and what is desired in real life are distinct beliefs. Swan and Trawick²¹ divided expectations into predictive (i.e. realistic) and desired (i.e. ideal or wanted) – the latter has been argued to be necessary for the achievement of satisfaction. Some define expectations in terms of what is deserved. For example, Miller²² divided expectations into ideal, expected, what is deserved and the minimum tolerable. Thompson and Sunol²³ identified four types of expectation in relation to satisfaction: *ideal* (desires, preferred outcomes), *normative* (what should happen), *predicted* (expected outcomes) and *unformed* (unarticulated). Additional taxonomies have included *expectancy probability* (judgements about the likelihood of an event occurring, e.g. based on past experience, self-confidence, perceived difficulty of the goal), *process expectations* (e.g. medical attention, health

information, pleasant surroundings) and *outcome expectations* (e.g. ability to return to work/previous way of life, physical fitness).²⁴

Expectations have affective and cognitive components and are multidimensional. They are the result of complex cognitive processes, modified by previous experiences and other influences.²⁵ Some investigators focus on what patients think will happen (probability or realistic expectations) and others on what patients would like to happen (value or ideal expectations). Predicted or expectancy probability expectations are judgements about the likelihood of an event occurring, for example based on past experience, self-confidence or perceived difficulty of the goal. Kravitz²⁶ noted the variable use of probability and value expectations, general and visit-specific expectations, and expectations relating to the structure, process and outcome of health care. Value expectations have been defined as hopes or desires concerning an event, expressed as wants or needs.²⁷ In this definition there is a distinction between hopes and desires, which are ideals, and anticipated, or realistic, expectations.

Some authors follow a gap model of expectancy fulfilment. Expectancy fulfilment theory is the extent to which a person's perceived occurrence of an event agrees with his or her previous expectations about that event. This holds that the higher the perceived fulfilment of the expectations then the higher the satisfaction, and when fulfilment is lower than expectations then the greater the gap and the lower the satisfaction). In sum, patient satisfaction is defined as being achieved when a patient's treatment expectations are met or exceeded.²⁸⁻³⁰

The term 'expectancy' is used in psychology as a general concept, in contrast to the health literature, which refers to 'expectations' in the real world.³¹ There is little evidence on how such abstract expectancy concepts might be operationalized and used in empirical research in real life patient settings. Empirical evidence supporting one conceptualisation of expectation over another is unconvincing and largely based on small-scale or qualitative studies. Our systematic review of the literature on patients' expectations of health care found little evidence to support any of these concepts, including the commonly stated expectations-fulfilment gap as a predictor of patient dissatisfaction.²⁰ This is possibly because expectancy theory is cognitive and omits consideration of social or affective factors. It is unsurprising, then, that the research reviewed indicated that fulfilling patients' expectations accounted for, at most, a quarter of the variance in patient satisfaction.²⁰ Thus, given conceptual uncertainty, it is unsurprising that there are no well-tested, multidimensional 'expectations' questionnaires.

The aim of this paper is to present a summary of the development of a Patients' Expectations Questionnaire

(PEQ) and its psychometric characteristics. The overall study has been reported elsewhere.²⁰ This paper is unique in focussing on key results on the psychometric properties of the measure, presented more succinctly, and in a more readable and accessible format, than was possible in a lengthy report; the paper is also unique as it presents new, previously unpublished, adjusted logistic regression models of overall patient satisfaction and expectations ratings.

Methods

Participants and procedure

The main study of patients' expectations was then based on surveys of patients before and after doctor consultations in clinics primary care and hospital outpatients. Two modes of questionnaire administration were used to test the reliability of alternate administration methods: self-completion and face-to-face interviewing. These were administered to the clinic samples as they consulted, in the clinics, or to a population sample of clinic attenders, directly before and after their clinic visit. Patients were recruited until target numbers were achieved for self-completion and interview modes of questionnaire administration (there was no randomization into these groups).

1. Sample recruited from clinics: Two hospital cardiology clinics and six primary care centres participated, from three areas of the UK (Norfolk, North London and Essex). Clinic patients were approached consecutively and invited to participate by interview or self-completed questionnaire. Consenting patients completed the Pre-visit Ideal and Realistic expectations questionnaire while awaiting their consultation and the Post-visit Experiences (met experiences) questionnaire afterwards. Full clinic lists were not accessible to us for patient recruitment from these sites (due to patient confidentiality), so response rates could not be calculated.

2. Sample recruited from population survey, and clinic attenders identified as eligible for inclusion: The population patient survey was conducted in Greater London by Ethnicfocus, a research organisation, based on systematic random sampling of postal sectors, by concentration of ethnic group, with a focused enumeration procedure ensuring the representation of people in ethnic minority groups as well as White British. The PEQ was given by interviewers to eligible respondents (with a general practitioner or out-patient appointment within four weeks), who were asked to self-complete the pre-visit self-administration questionnaire before their appointment, and the post-visit questionnaire afterwards. For the population survey, 1413 London households were contacted, of which 318 were eligible: 255 agreed to participate and 63 refused (80% response rate). The Ethnicus responders represented a further 19 hospitals

and 16 primary care centres. Although the patients were not randomly sampled, requiring caution when interpreting sample estimates, this is acceptable for psychometric testing.

A total of 833 patients were included overall from clinic and population surveys. These formed 434 (52%) attending, or about to attend, primary care general practitioner (GP) clinics, and 399 (48%) attending, or about to attend, hospitals, of whom 128 were interviewed and 705 self-administered the questionnaire. The different samples of responders were largely comparable, with no statistically significant differences, at least at 0.05 level, using Chi-square tests, in their demographic characteristics - age (30-33% of each group were aged 60+), gender (53-63% were female), housing tenure, (55-58% of each group were home owners or had a mortgage) and ethnic status (59-65% were White British as opposed to members of ethnic minority groups).

Processes

There were four PEQ development phases:

1. *First, a systematically conducted, narrative literature review of patients' expectations for health care was carried out.*²⁰ A comprehensive search was conducted on cross-disciplinary health and social science databases. The searches were limited to 2000-2009; a data extraction form was used. The search terms are presented in Appendix 1.

A total of 213 papers were included in the review from 20437 titles and 268 abstracts identified. In summary, it was reported that most research designs were weak with small or selected samples. A theoretical frame of reference was rarely stated. Questionnaire items were frequently untested, and those papers, which included results on reliability or validity, had mixed results. Little attempt was made by authors to examine expectations in detail or present findings in terms of contribution to existing knowledge.¹⁵ The conclusion from the review was that 'expectations' are variably defined; there is no validated standardised expectations measure; there were common assumptions that expectations were related to satisfaction (expectancy disconfirmation theory); and that there are many different expectation types, including realistic and ideal expectancies. The expectation types identified in the review were listed and used to develop a preliminary questionnaire for testing.

2. *Exploratory, semi-structured interviews aiming to elicit expectations from patients.*^{20,32} This involved face-to-face and telephone interviews with 20 general practices and 20 cardiology outpatients from Norwich (chosen for convenience). Patients were asked their expectations for a forthcoming consultation (rated along a 10-point 'hopes' versus 'fears' scale), and then asked to rate their consultation afterwards regarding how it met their expectations. Interviews were transcribed verbatim and

coded inductively (themes being developed through a recursive process taking a bottom-up approach and being informally discussed within the research team). A thematic approach was taken to the analysis of the transcripts.³³ The transcription of the interviews formed part of the data analysis process²⁸² and notes made during transcription were referred to at the initial coding stage. The transcripts were read through to aid familiarisation with the data and the files were imported into NVivo8 (qualitative data analysis software; QSR International, VIC, Australia). Coding was open and inductive using Nvivo8's 'free nodes' (the basic level of coding), hence the codes did not fit into a pre-existing coding framework. Instead, verbatim quotes from the patients or researcher-generated codes were used. Coding was contextual with the surrounding text forming part of what was coded, and at times a section of text was multi-coded to reflect different aspects of the data. Coded themes had high face validity, recapitulating review findings.

3. A pilot study of the preliminary patients' expectations questionnaire that included the most common themes from the interviews and literature (over 50 items on the structure, process and outcomes of healthcare episodes).²⁰ This was piloted on 45 patients in London. Patients rated pre-visit, their ideal hopes and realistic expectations, plus how important each item was to them (values) and whether they felt they deserved it to be met (entitlements). Post-visit, patients rated how the expectations were met. Both questionnaires included 5-point response scales (strongly agree to strongly disagree). The primary purpose of the questionnaire was to conduct analyses to check for item redundancy and clarity. The most commonly occurring themes were included as items in a pilot questionnaire administered in person to 40 patients, together with items and conceptual expectancies elicited from the literature review (value, deserved, ideal, realistic, met expectations). The questionnaire listed over 50 expectancy items relating to the structure, process and outcomes of the health-care episode. At pre visit we asked patients to rate their ideal hopes and their realistic (probabilistic) expectations, as well as how important each item was to them (values), and finally whether or not they felt that they deserved their expectations to be met in practice (entitlements). At post visit they were asked to rate the extent to which their expectations were met. The responses to the questionnaires were entered onto SPSS15 and analysed for their item-completion, acceptability, reliability and validity. Poorly performing and redundant items were eliminated.

Analyses showed that each value (importance) expectation and deserved (entitlement) expectation over-correlated by over 0.98 with ideal expectations, indicating redundancy, so only *ideal* and *realistic* expectations were included in the final pre-visit questionnaire (items on *values* and *entitlements* were removed, replaced by global items in the final instrument).²⁰

It was decided to retain questions on 'ideal' rather than 'deserved' and 'importance' ratings, as well as realistic and post-visit assessments of experiences and whether expectations were met. The literature review indicated that the bulk of the conceptual literature focused on these. The questionnaire was re-piloted on a small number of patients.

4. This stage was the main study described under the sub-heading *Methods, Participants and procedure earlier*. The revised questionnaire was administered to a larger sample of GP and hospital patients (total 833). Pilot questionnaires responses were analysed for item-completion, acceptability, reliability and validity. Poorly performing and redundant items were eliminated. Summaries of the psychometric findings are reported here, along with unique multivariable analyses. Full psychometric test results, criteria and results by sample type and sub-sample, are presented in the main report¹⁵.

Measures

The wording of the questionnaire was directed towards expectations (see Box 1).

Box 1. Wording of the lead-in questions on expectations

Pre-questionnaire wording pre-fixing items:

These questions are about your expectations of your health care:

Please answer parts a and b and tick a box in each row to show the strength of your agreement with each sentence about:

a) Your hopes: In an ideal world, if the health service was provided exactly as you want it to be, how much would you like the following to happen in this visit?

b) Your realistic expectations: What you actually expect to happen in real life as a result of this visit?

Post-questionnaire wording pre-fixing items:

We would like to ask you about the extent to which your expectations of the visit and consultation were met. To what extent do you agree with the following in relation to your visit and consultation?

Table 1 shows the 27 items in the final Pre-visit Ideal, Pre-visit Realistic and Post-visit Experiences (expectations met) questionnaires. The domains included were *Structure of health care* (4 items), *Process of health care* (4 items), *Doctor-patient communication style* (5 items), *Consultation and treatment/ Procedures performed* (5 items), *Doctor's approach to information* (6 items), *Treatment outcomes* (3 items). All items carried a 5-point response scale (Strongly Agree to Strongly Disagree), except five post-visit items on

Procedures performed, which had Yes/No response choices (changed following pilot feedback from patients).

Table 1. Pre-visit Ideal and Realistic expectations and Post-visit Experiences (met expectations) sub-scale items by domain

1. Structure of health care:
(1) Easy to find where to go when there
(2) Easy to get around inside building
(3) Clean inside
(4) Enough space in waiting room
2. Process of health care:
(5) Clear information about where to go
(6) Given an appointment for a convenient date/time
(7) Seen on time
(10) Reception staff helpful
3. Doctor-patient communication style:
(11) Doctor helpful
(12) Doctor respectful and treats me with dignity
(13) Doctor knowledgeable about/understand my health condition/problem
(14) Doctor clear and easy to understand
(15) Doctor involves me in decisions about my treatment
4. Consultation and treatment/Procedures performed:
(16) Physical examination
(17) Tests/investigations
(18) Given diagnosis or have a previous diagnosis confirmed
(19) New, changed, or repeat prescription
(20) Referral to another doctor/specialist/therapist
5. Doctors' approach to information
(21) Reassurance about condition
(22) Advice about health/condition
<i>Full explanation, in clear language, about:</i>
(23) What caused condition/problem
(24) How to manage condition/symptoms/pain
(25) The benefits/side effects or complications/risks of treatment
(26) Opportunity to discuss problems in life
6. Treatment outcomes
(27) Improved quality of life
(28) A reduction in my symptoms/problems
(29) Increased chances of improvements to my health/staying healthy

Results

The results were analysed using traditional psychometric methods (see next). Apart from reliability correlations, and Cronbach's alpha, for assessments of internal consistency,

validity, and differences between samples, were examined using Spearman's rank correlation (ρ), t-tests and Chi-square tests (level of significance accepted was minimum $p < 0.05$). Tests were interpreted against standard thresholds for acceptability.³⁴⁻³⁶ Logistic regressions and exploratory factor analyses were also undertaken.³⁷ Results by sample type and sub-samples are presented in full in the study report.²⁰

Reliability

A reliable measure is measuring the concept of interest consistently, in a reproducible fashion. The table in Appendix 2 shows mean responses to expectations items by mode of administration and questionnaire version, where lower means equal stronger item agreement (scale 'Strongly agree' = 1 to 'Strongly disagree' = 5), plus skew and kurtosis for the total sample. For each item, the means for ideal expectations were consistently lower than for realistic expectations, as expected. Post-visit item means were either in between those for ideal and realistic expectations, or slightly higher, indicating unmet expectations, particularly at items 22, 23, 24, 25 (advice about: health/condition, cause of condition, how to manage condition, benefits/side effects). Within the total sample, the means for GP and hospital samples were largely comparable, as were the means by administration mode (using t-tests). The skew was judged acceptable for all items (+ or - 1.00).

Expectations items were analysed *individually* by Pre-visit Ideal and Realistic expectations, and Post-visit Experiences (expectations met), and were *summed* within these to form three sub-scales. Items in the six expectation domains within each sub-scale were also summed. The psychometric properties of the sub-scales and domains were tested by mode of questionnaire administration and site (GP, Hospital).

The total and self-administration samples met the threshold criteria for item-total correlations within the sub-scales, although a small number of item-total correlations in the smaller pre-visit interview samples failed to reach 0.3. Most item-item correlations reached or exceeded the 0.20 threshold for acceptability, supporting their homogeneity (while none of the item-item correlations exceeded the 0.75 threshold for item redundancy).³⁴⁻³⁵

In the few cases where this threshold was not met, this was generally within the sub-scales for *GP interview* patients, possibly due to the relatively small numbers within these samples ($N = 74$). Full details of item-item correlations by sample and sub-sample are presented in the study report¹⁵.

The sub-scale reliability statistics required complete sets of the items (with no item non response for the 27 items tested). Item non-response to the Pre-visit questionnaire ranged from 1% to 10% of the 833 matched pre-and post sample. The criteria for acceptability is up to 5% item non-response, or 10% or higher on sensitive or difficult topics.^{34,35} While the pre-visit item response rate reached acceptability by this criterion. However, the post-visit questionnaire item-response rate, at 22% to 24% of the 833 sample, failed acceptability criteria. This reflected the burden of the request to complete the questionnaires immediately after the consultation in the clinic. The lesson is that these should be administered in follow-up communications by post.

While lack of response on the selected items might indicate that patients were not able to generate some expectations? However, the exploratory and pilot studies did not indicate lack of ability of patients to generate expectations. A follow-up cognitive study would be needed to examine this. The reason appeared to be the practical drawbacks of administering questionnaires in busy clinics, although we agree this needs further examination.

In order to assess any resulting item-response bias, the descriptive statistics were conducted twice - on all respondents to an item and on those with complete items only. The results were comparable. There were no statistically significant differences, using t-tests and Chi-square tests, between respondents with complete cases and those without by age, sex, housing, tenure, age left school/full-time education, or ethnicity. Maximum endorsement criteria were satisfied (>0.80), suggesting no item redundancy.

The means, standard deviations, and Cronbach's coefficient alphas of internal consistency, for the three pre-and post visit sub-scales, are shown in Table 2. The Cronbach's alphas for the items forming the Pre-visit-Ideal, Realistic and Post-visit sub-scales (27 items each) exceeded the acceptability threshold of α 0.70 in each administration mode.³⁶ For three of the sub-scale domains Cronbach's alphas fell marginally below this threshold, likely to be due to their smaller number of items (alphas are sensitive to sample size). For the different expectation type subscales, we tested whether reliability could be improved by removing items: there were few improvements (Table 2), and these were small.

The split-half reliability statistics met threshold criteria, although a few sub-scale split-half Cronbach's alphas were slightly under the 0.70 threshold for acceptability (likely to reflect smaller numbers of items (alpha is sensitive to the number of items) (not shown in table).³⁶

Table 2 Internal consistency of the three summed rating scales: Pre-visit Ideal and Realistic, Post-visit experiences (expectations met)

Sub-scale alphas	Sub-scale	Mean (standard deviation)	Cronbach's alphas (α)
Pre-visit Ideal Total: α 0.917 (n= 714)	Structure	5.46 (1.73)	0.732
	Process	5.51 (1.92)	0.695
	Dr-patient approach	6.55 (2.09)	0.804
	Procedures	9.81 (3.92)	0.748
	Dr approach to information	9.81 (3.58)	0.764 (0.794 if cut item 26)
	Outcome	4.38 (1.66)	0.739
Pre-visit Realistic Total: α 0.902 (n= 698)	Structure	7.28 (2.82)	0.739
	Process	8.86 (3.00)	0.668
	Dr-patient approach	8.77 (3.28)	0.810
	Procedures	11.23 (4.06)	0.769
	Dr approach to information	12.42 (4.45)	0.797
	Outcome	6.01 (2.34)	0.781
Post-visit experiences (met expectations) Total: α 0.890 (n= 629)	Structure	6.44 (2.47)	0.749
	Process	7.83 (2.98)	0.694 (0.745 if cut item 7)
	Dr-patient approach	8.53 (3.50)	0.875 (0.880 if cut item 15)
	Procedures	2.48 (1.23)	0.851 (0.857 if cut item 19)
	Dr approach to information	13.54 (4.93)	NA – items dichotomised Y/N
	Outcome	9.19 (2.44)	0.840

Table 3 shows inter-sub-scale reliability correlations by site. All achieved 0.20 or more except between Pre-visit Ideal and Post-visit Experiences for hospital patients (0.156). The table supports the finding that, as expected,

Pre-visit Realistic expectations correlated significantly more highly than Pre-visit Ideal expectations with Post-visit experiences. The means for the total sample for the summed Pre-visit Ideal, Realistic and Post-visit expectations were 41.57 (standard deviation (s.d.) 10.63), 55.19 (s.d. 14.83) and 45.97 (s.d. 12.42) respectively. This confirms (as indicated by the item mean data in Appendix 2) that Post-visit means were higher than Pre-visit Ideal, but lower than Pre-visit Realistic means: thus, not all patients' ideal expectations were met, although their realistic expectations were generally exceeded.

Table 3. Reliability Total scale inter-correlations by sample type

	Pre-visit Ideal expectations	Pre-visit Realistic expectations	Post visit Experiences (met expectations)
Pre-visit Ideal expectations			
GP patient	---	0.549	0.240
Hospital patient	---	0.539	0.156
Total patient	---	0.543	0.206
Pre-visit Realistic expectations			
GP patient	0.549	---	0.448
Hospital patient	0.539	---	0.335
Total patient	0.543	---	0.397
Post visit Experiences (expectations met)			
GP patient	0.240	0.448	---
Hospital patient	0.156	0.335	---
Total patient	0.206	0.397	---

Note: Ideal, Realistic and Post visit expectations all minus 8 and 9 'Does not apply' items; Post-visit total included 5 procedures performed as dichotomised 0 yes 1 no items within the total no. of complete cases GP 268/434; Hospital 312/399; total 580/833

Exploratory factor analysis

Exploratory factor analysis, with Varimax rotation, was conducted to assess the factor structure of the 27 item expectation sub-scales. The data met the various criteria for factor analysis (total sample over 800; for each sub-scale, the larger proportion of inter-correlations were above 0.30 and the Keyser-Meyer-Olkin measures of sampling adequacy was above 0.900 (0.904 Ideal, 0.921 Realistic, 0.907 Post-visit); Bartlett's tests of sphericity were all significant at 0.001).¹⁷⁻¹⁹ For *pre-visit Ideal expectations*, *Realistic expectations*, and *post-visit Experiences (met expectations)* there were six, five and seven factors respectively with eigenvalues above 1 (explaining 57.62%, 54.59%, and 61.92% variance, respectively). However, in

all cases scree tests suggested breaks between the second and third factors, suggesting *at most* two factors should be extracted. However, for all three sub-scales there was strong loading on the first factor by most items, suggesting they measure one concept (i.e. expectations). For *Pre-visit Ideal expectations*, all items loaded quite strongly on the first factor: most were acceptable (above 0.40 threshold); the remainder were over 0.30. Just one item loaded under 0.40 on all components (26), which could be considered for revision of wording. For *Pre-visit Realistic expectations*, all items loaded strongly on the first factor: again, most were acceptable (above 0.40); the remainder were over 0.30. For *Post-visit Experiences (met expectations)*, items loaded quite strongly on the first two factors, although *procedures performed* loaded across factors, as expected, reflecting their factual rather than attitudinal nature and dichotomised response categories. Most were acceptable (above 0.40); the remainder being over 0.30. Just one item loaded under 0.40 on all components (24), which might again be considered for revision of wording. The suggestion of a single factor representing expectations is not totally unexpected as the Pre-visit

Ideal, Pre-visit Realistic and Post-visit Experiences questionnaires all measured the same expectation domains and items – albeit divided into different types of expectancy.

Confirmatory factor analysis is required for further research on the factor structure. As with these analyses, the use of factor analysis can lead to unexpected results, for example where one dimension has been confirmed where two or more were hypothesised. If assumptions underlying the test were not violated. [38] Additional, more complex, steps should undertaken in future analyses of these data. These need to examine the data in more detail (e.g. rotating a number of different factors to examine whether a more optimal solution can be found, using orthogonal and/or oblique rotation techniques).

It should also be cautioned that factor analysis could lead to solutions that operate against socially important items of measurement. Where items are regarded as essential to the content validity of a measure, but they do not load on a cluster of inter-related variables, their retention as

separate items in a questionnaire should always be considered on theoretical grounds. Scale items should be included in a measure according to the information they contribute. For example, a measure of patient expectations of health care is more valuable if it contains items that address the different components of health care, rather than items with high internal consistency but which address only particular components of this multi-dimensional concept. Coste *et al.*³⁹ on the basis of a review of the literature reported that, most commonly, factor analysis of the longer versions of measurement scales, and statistical correlations between the longer and shorter versions of a measure, are used to finalise the content of an instrument. Less often is there any apparent check on whether the information content has been retained (with the risk of reduced content validity). Factor analysis is often a great deal of work and analysis. Because of this, structural equation modelling (SEM) can have an advantage and needs to be considered in future work on the measure.

Validity

There are no gold standards for interpreting tests of validity, as results are related to study aims and hypotheses. As expected, correlations between Pre-visit Ideal and Post-visit expectations (0.190) were lower than those for Realistic and Post-visit expectations (0.337), supporting their convergent validity; and correlations between Ideal and Realistic expectations were 0.568. This trend was true for *all* six expectation type sub-scales. Although patients' Pre-visit Ideal and Realistic expectations were only modestly associated with Post-visit expectations, this might reflect the uncertainty inherent in expectations being delivered due to factors outside patients' control.

Of note was the finding that the lowest Post-visit met expectation, particularly among the hospital sample, was being seen on time (see Appendix 2). Other items with low met expectations were 'helpfulness of reception staff', 'doctor being respectful' and 'treating with dignity' (hospital sample), 'doctor knowledgeable about condition' (hospital), 'being given reassurance', 'advice about health/condition', 'cause of condition', 'how to manage condition', 'information about benefits/side effects of treatment', 'opportunity to discuss problems in life', and the three items on outcome expectancies. Some of these (relatively) unmet expectations relate to unpredictable outcomes, but others suggest disappointments regarding information provision and doctor empathy/ reassurance, as well as over-estimation of doctors' technical skills and knowledge. Overall, GP patients reported higher pre-visit and post-visit met expectations than hospital patients, particularly for items relating to *Structure of health care* and *Doctor-patient communication style*. Again, this might be expected, given greater familiarity of patients with seeing a GP than going to hospital.

Discriminant validity was assessed, using traditional psychometric methods, by examining whether variables not expected to be associated were unrelated.²⁰ As an example, we did not expect ideal expectations to be associated with patients' age or gender. The means for each age group, males and females, were similar for assessments of the overall importance of the (ideal) expectations items, confirming discriminant validity. It is acknowledged that more complex methods have been developed.⁴⁰

Multi-variable analyses

Finally, multivariable analysis was used to examine independent predictors of two summary dependent variables – global, single item patient ratings of i) overall post-visit satisfaction (“Overall, how satisfied are you with your visit this time?”) and ii) overall met expectations (“Overall, how much were your expectations of the visit met in relation to your ideals or hopes of what would happen?”). The original response scales were 5-point Likert scales. Theoretically relevant independent variables, which achieved statistical significance with the dependent variables at least at the 0.05 level with Chi-square tests, were entered into logistic regression models, hierarchically, along with socio-demographic/economic variables in order to adjust for their effects into logistic regression models. All variables entered achieved inter-correlations of less than +/-0.600, and criteria for minimising multicollinearity were met. The entered variables were dichotomised prior to entry. Dichotomised scores were entered into logistic regressions for the purposes of this paper for ease of interpretation. Alternative analysis of the ranked items using multiple regression showed no advantage. It is acknowledged that converting the ranked data to a dichotomous form is that information about the size of the effect may be lost. In addition the process of dichotomising continuous data requires the setting of an appropriate point about which to 'split' the data. However, we did examine the cut-off points and they were sensitive to the expected associations in descriptive analyses. The literature indicates, that while contentious, dichotomising continuous scores is common, and with carefully selected variables can be of benefit, improving the fit of some models, and acceptable.⁴¹⁻⁴⁴

The variables entered in the full models (not shown) included each of the three expectancy type sub-scales scores: Pre-visit Ideal expectations score, Pre-visit Realistic expectations score, Post-visit experiences (met expectations); self-ratings of: perceived health status, quality of life, anxiety and depression, optimism, feelings of control in life, long-standing illness, disability or infirmity; patients' age, sex, housing tenure, and site of clinic visit.

Variables which failed to achieve statistical significance at least at the 0.05 level in the full model (Pre-visit Ideal

expectations score, Pre-visit Realistic expectations score; self-ratings of: perceived health status, quality of life, anxiety and depression, optimism, long-standing illness, disability or infirmity) were removed from the next reduced models. The remaining variables which were re-entered into the reduced models, which had retained significance in the full model, then, were: Post-visit experiences (met expectations) sub-scale score, feelings of control in life, and age. Patients' sex, housing tenure, and site of clinic visit were also re-entered in order to control for their potential effects.

60 years, however, had reduced odds of highest satisfaction and expectations met ratings, compared with others. These results add further evidence to the validity of the PEQ.

Discussion

Surveys of patients' experiences using health services are used internationally to assess the quality of care, along with patient outcomes.^{45,46} Such surveys typically include items on patients' satisfaction.⁴⁷ Patient expectations of health care are an important aspect of satisfaction, although the

Table 4. Logistic regression (all patients): Adjusted odds of responses to single item, global questions on:
a) Overall patient satisfaction rating with consultation (Q.34)
b) Overall expectations rating of consultation met (Q30)

	'Overall, how satisfied are you with your visit this time?' Overall, Very satisfied-Satisfied (1) (referent) vs. Not satisfied (0)	'Overall, how much were your expectations of the visit met in relation to your ideals or hopes of what would happen?' Overall, expectations met (1) (referent) vs. Not met (0)
Variables entered:	OR (95% CI) P=	OR (95% CI) P=
Post-visit Experiences (Expectations met) sub-scale score: Very high-High met expectations score =1(referent) vs. Less high = 0	4.943 (3.232-07.559) 0.001	6.883 (4.218-11.233) 0.001
Feels has a lot of control over important things in life: A lot of control = 1 (referent) vs. Some, A little, No control = 0	1.592 (1.031-2.460) 0.036	1.094 (0.675-1.772) 0.715 ns
Age: <60=1 (referent) vs. 60+ = 0	0.568 (0.344-0.944) 0.001	0.520 (0.289-0.935) 0.029

Adjusted for sex, housing tenure and site of consultation;
ns: not statistically significant at least at 0.05 level

Table 4 shows the results for the reduced models for both sets of dependent variables in relation to self-rated overall satisfaction and self-rated overall expectations met. Adjusted odds ratios showed that respondents who had the highest Post-visit Experiences (expectations met) sub-scale scores had almost five times the odds of reporting the highest levels of satisfaction with the consultation (single item question), and almost 7 times the odds of reporting their expectations of the consultation (single item question) were met overall, compared with others. In addition, those who felt a lot of control over their lives had increased odds of reporting the highest levels of satisfaction with the consultation, and almost 7 times the odds of reporting their expectations of the consultation, compared with others. Younger respondents, aged under

nature of the relationship is uncertain, the expectation concept is not well elaborated, and there are no validated measures. However, satisfaction needs to be measured after an event, and therefore has no predictive element, while expectations can be ascertained *a priori*. If health care providers can adequately measure expectations, it is feasible that they can take preventive measures to preempt dissatisfaction.

Following a literature review and qualitative research, we developed the PEQ, comprising three sub-scales related to Pre-visit Real and Ideal expectations, and Post-visit Experiences (met expectations). The revised sub-scales comprised 27 items in six sub-scales related to expectation types. This paper reported on the psychometrics of the PEQ following their testing on 833 GP and hospital patients. Results suggest the PEQ has good reliability and validity, though further research is needed to test the PEQ on other patient samples. The exploratory factor analysis,

suggesting a single factor representing expectations is not totally unexpected as the pre-visit ideal, pre-visit realistic and post-visit experiences questionnaires all measured the same expectation domains and items – albeit divided into different types of expectancy. However, patients' pre-visit expectations of what would happen in reality were overall lower than their ideals or hopes about what would happen, supporting the validity of the measures; and post-visit experiences were lower than pre-visit ideals, but similar to, or slightly worse than pre-visit realistic expectations, i.e. they fell in-between, indicating some unmet expectations, but also that some expectations were exceeded. This supports the distinction between the three expectancy concepts, and the use of distinct measures of each. However, the Pre-visit Ideal and Realistic expectations sub-scales were not independently associated with either overall satisfaction and Post-visit Experiences (met expectations; only the latter Post-visit sub-scale was a significant predictor of overall met expectations and satisfaction. These results are not unexpected because our review of the literature found no consistent support for expectancy disconfirmation theory as a predictor of patient dissatisfaction, despite many common assumptions made about a relationship. As stated earlier, this is possibly because the theory is cognitive and omits consideration of social or affective factors.

While information about patients' pre-visit expectations may be of value when planning quality services incorporating patients' values, the results reported here suggest that policy makers and providers should take patients' actual experiences into account in relation to attempts to improve patient satisfaction. Fully validated, the measure reported here has potential use by providers in routine health care evaluation, informing improvements for the benefit of patients. For example, results suggest that clinicians need to be especially concerned about their interactions with patients, as well as there being a need to better calibrate patient expectations regarding what doctors (and the health service) can know and deliver. In addition, while the study is consistent with other studies that patients have more positive experiences with age,⁴⁷ more detailed investigation into differences in overall satisfaction and expectations by patients' age group, and correlates, is needed, given increasing evidence of ageism in health care.^{48,49}

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Appendix 1. Search strategy

A multiple search strategy was adopted. A comprehensive, systematic search of the conceptual and empirical literature on patient expectations, across the clinical and social sciences, was conducted using the following databases: AMED, Assia, BNI, Cinahl, the Cochrane Library, Embase, Medline, PsycInfo, Sociological Abstracts, Intute Social Sciences, Web of Science, and the Health Technology Assessment reports. The electronic database search strategy was developed using MESH terms and key words, augmented by the inclusion of key words used in studies as they were identified. No design filters were used.

We searched for any type of literature published or written between 2000 and 2009, and for reasons of practicality we only searched for publications in the English language. In the following databases, the term 'patient expectation OR patient expectations' was searched: Assia, Cochrane Library databases, Intute (Social Sciences, and Medicine), Sociological Abstracts and Web of Knowledge. In the remaining databases a number of terms, synonyms and subject headings for 'patient expectations' and 'healthcare' were used (see below table). The Health Technology Assessment (HTA) database of published reports was searched. In addition, the following databases were also examined to retrieve any unpublished or grey literature: Index to Theses, Dissertations and Theses, and OpenSIGLE.

The search was not restricted to particular definitions or conceptualisations of expectations, or type of site/setting. Broad inclusion criteria allowed a variety of studies to be reviewed, including theoretical and discussion papers, observational and interventional studies, randomised control trials, systematic reviews and meta-analyses.

Table of Search strategies

Database: Dialog AMED		
1.	SEARCH:	EXPECTATIONS
2.	SEARCH:	EXPECTANCY ADJ THEORY
3.	SEARCH:	1 OR 2
4.	SEARCH:	HEALTH ADJ CARE
5.	SEARCH:	TERMINAL-CARE.DE. OR HOSPICE-CARE.DE.
6.	SEARCH:	NURSING-CARE.DE. OR GERIATRIC-NURSING.DE. OR HOLISTIC-NURSING.DE.
7.	SEARCH:	QUALITY-OF-HEALTH-CARE.DE. OR DELIVERY-OF-HEALTH-CARE.DE. OR PRIMARY-HEALTH-CARE.DE.
8.	SEARCH:	HEALTH ADJ SERVICES
9.	SEARCH:	HEALTH-SERVICES.DE. OR CHILD-CARE.DE. OR COMMUNITY-HEALTH-SERVICES.DE. OR EMERGENCY-MEDICAL-SERVICES.DE. OR HEALTH-SERVICES-FOR-THE-AGED.DE. OR MENTAL-HEALTH-SERVICES.DE. OR PHARMACEUTICAL-SERVICES.DE. OR PREVENTIVE-HEALTH-SERVICES.DE. OR STATE-MEDICINE.DE. OR TRANSPORTATION-OF-PATIENTS.DE. OR WOMENS-HEALTH-SERVICES.DE.
10.	SEARCH:	PALLIATIVE-CARE.DE. OR HEATH-SERVICES-ACCESSIBILITY.DE. OR HOME-CARE-SERVICES.DE.
11.	SEARCH:	PATIENT-CARE.DE. OR DAY-CARE.DE. OR PALLIATIVE-CARE.DE.
12.	SEARCH:	AFTER-CARE.DE. OR AMBULATORY-CARE.DE. OR CHILD-CARE.DE. OR COMPREHENSIVE-HEALTH-CARE.DE. OR CONTINUITY-OF-PATIENT-CARE.DE. OR CRITICAL-CARE.DE. OR DAY-CARE.DE. OR DELIVERY-OF-HEALTH-CARE.DE. OR DENTAL-CARE.DE. OR AMBULATORY-CARE-FACILITIES.DE. OR GENERAL-PATIENT-CARE.DE. OR HEALTH-CARE-.DE. OR HOSPICE-CARE.DE. OR LONG-TERM-CARE.DE.
13.	SEARCH:	PATIENT-CARE-MANAGEMENT.DE. OR PATIENT-CARETEAM.DE. OR INTENSIVE-CARE-NEONATAL.DE. OR NURSING-CARE.DE. OR OBSTETRICAL-CARE.DE. OR PALLIATIVE-CARE.DE. OR PASTORAL-CARE.DE. OR PATIENT-CARE.DE. OR PATIENT-ACCEPTANCE OR HEALTH-CARE.DE. OR POSTOPERATIVE-CARE.DE. OR PRENATAL-CARE.DE. OR PREOPERATIVE-CARE.DE. OR PRIMARY-HEALTH-CARE.DE. OR QUALITY-OF-HEALTH-CARE.DE.

		OR RESPITE-CARE.DE. OR SELF-CARE.DE. OR HOME-CARE-SERVICES.DE. OR PATIENT-CARE-TEAM.DE. OR TERMINAL-CARE.DE.
14.	SEARCH:	4 OR 5 OR 6 OR 7 OR 8 OR 9 OR 10 OR 11 OR 12 OR 13
15.	SEARCH:	3 AND 14
16.	SEARCH:	LG=EN
17.	SEARCH:	15 AND 16
Database: British Nursing Index (BNI)		
1.	SEARCH:	EXPECTATIONS
2.	SEARCH:	PATIENTS-ATTITUDES-AND-PERCEPTIONS.DE.
3.	SEARCH:	1 OR 2
4.	SEARCH:	HEALTH ADJ CARE
5.	SEARCH:	PRIMARY-HEALTH-CARE.DE. OR GENERAL-PRACTICE.DE.
6.	SEARCH:	PRIMARY-HEALTH-CARE.DE. OR HOLISTIC-CARE.DE. OR POSTNATAL-CARE.DE. OR RESIDENTIAL-CARE.DE.
7.	SEARCH:	COMMUNITY-CARE.DE.
8.	SEARCH:	HEALTH ADJ SERVICES
9.	SEARCH:	COMMUNITY-HEALTH-SERVICES.DE. OR HOME-CARE-SERVICES.DE. OR LONG-TERM-CARE.DE. OR MENTAL-HEALTH-COMMUNITY-CARE.DE. OR RESPITE-CARE.DE.
10.	SEARCH:	CHILDREN-SERVICES.DE. OR NEONATES-SERVICES.DE. OR SCHOOL-HEALTH.DE.
11.	SEARCH:	MENTAL-HEALTH-SERVICES.DE. OR PRISON-HEALTH-SERVICES.DE. OR OCCUPATIONAL-HEALTH-SERVICES.DE. OR LEARNING-DISABILITIES-SERVICES.DE. OR ELDERLY-SERVICES.DE. OR TERMINAL-CARE-SERVICES.DE.
12.	SEARCH:	4 OR 5 OR 6 OR 7 OR 8 OR 9 OR 10 OR 11
13.	SEARCH:	3 AND 12
Database: Cinahl		
1.	SEARCH:	EXPECTATIONS
2.	SEARCH:	TREATMENT ADJ RELATED ADJ OUTCOME ADJ EXPECTATION
3.	SEARCH:	POSITIVE ADJ OUTCOME ADJ EXPECTANCY
4.	SEARCH:	NEGATIVE ADJ OUTCOME ADJ EXPECTANCY
5.	SEARCH:	EXPECTANCY ADJ THEORY
6.	SEARCH:	1 OR 2 OR 3 OR 4 OR 5
7.	SEARCH:	HEALTH ADJ CARE
8.	SEARCH:	HEALTH-CARE-DELIVERY.DE. OR HEALTH-SERVICES-ACCESSIBILITY.DE. OR MANAGED-CARE-PROGRAMS.DE. OR NATIONAL-HEALTH-PROGRAMS.DE. OR PRIMARY-HEALTH-CARE.DE. OR TELEHEALTH.W..DE.
9.	SEARCH:	QUALITY-OF-HEALTH-CARE.DE. OR QUALITY-OF-NURSING-CARE.DE.
10.	SEARCH:	PATIENT-CARE.DE. OR TERMINAL-CARE.DE. OR HOSPICE CARE.DE. OR PALLIATIVE-CARE.DE.
11.	SEARCH:	PRIMARY-HEALTH-CARE.DE. OR SHARED-SERVICES-HEALTH-CARE.DE.
12.	SEARCH:	HEALTH ADJ CARE ADJ SERVICES
13.	SEARCH:	HEALTH-SERVICES.DE. OR ADOLESCENT-HEALTH-SERVICE.DE. OR ASSISTIVE-TECHNOLOGY-SERVICES.DE. OR CHILD-HEALTH-SERVICES.DE. OR COMMUNITY-HEALTH-SERVICES.DE. OR DENTAL-HEALTH-SERVICES.DE. OR EMERGENCY-MEDICAL-SERVICES.DE. OR HEALTH-SERVICES-FOR-THE-AGED.DE. OR HEALTH-SERVICES-FOR-THE-INDIGENT.DE. OR HEALTH-SERVICES-INDIGENOUS.DE. OR HOSPITAL-PROGRAMS.DE. OR

14.	SEARCH:	INSTITUTIONALIZATION.W..DE. OR INTERPRETER-SERVICES.DE.OR MENTAL-HEALTH-SERVICES.DE. HEALTH ADJ SERVICES
15.	SEARCH:	COMMUNITY-MENTAL-HEALTH-SERVICES.DE. OR NURSING-CARE.DE. OR NUTRITION-SERVICES.DE. OR PEER-ASSISTANCE-PROGRAMS.DE. OR REHABILITATION.W..DE. OR RURAL-HEALTH- SERVICES.DE. OR STUDENT-ASSISATNCE- PROGRAMS.DE. OR SUBSTANCE-USE- REHABILITATION-PR0GRAMS.DE. OR URBAN- HEALTH-SERVICES.DE. OR WOMENS-HEALTH- SERVICES.DE.
16.	SEARCH:	7 OR 8 OR 9 OR 10 OR 11 OR 12 OR 13 OR 14 OR 15
17.	SEARCH:	6 AND 16
18.	SEARCH:	17 AND LG-EN
Database: Embase		
1.	SEARCH:	EXPECTATIONS
2.	SEARCH:	EXPECTATION.W..DE.
3.	SEARCH:	TREATMENT ADJ RELATED ADJ OUTCOME ADJ EXPECTATION
4.	SEARCH:	PATIENT ADJ RELATED ADJ SELF ADJ EFFICACY ADJ EXPECTATIONS
5.	SEARCH:	POSITIVE ADJ OUTCOME ADJ EXPECTANCY
6.	SEARCH:	EXPECTANCY.W..DE.
7.	SEARCH:	EXPECTANCY ADJ THEORY
8.	SEARCH:	1 OR 2 OR 3 OR 4 OR 5 OR 6 OR 7
9.	SEARCH:	HEALTH ADJ CARE
10.	SEARCH:	MENTAL-HEALTH-CARE.DE. OR HOME-MENTAL- HEALTH-CARE.DE. OR MENTAL-HEALTH-SERVICE.DE. OR PSYCHOSOCIAL-CARE.DE.
11.	SEARCH:	HEALTH-CARE-ORGANIZATION.DE. OR HEALTH- CARE-INDUSTRY.DE. OR HEALTH-CARE-SYSTEM.DE.
12.	SEARCH:	PATIENT-CARE.DE. OR PREOPERATIVE-CARE.DE. OR POSTANESTHESIA-CARE.DE. OR REHABILITATION- CARE.DE.
13.	SEARCH:	HEALTH-CARE-SYSTEM.DE.
14.	SEARCH:	HEALTH-CARE-PRACTICE.DE.
15.	SEARCH:	HEALTH-CARE.DE. OR CHILD-HEALTH-CARE.DE. OR ELDERLY-CARE.DE. OR HEALTH-CARE-DELIVERY.DE. OR MATERNAL-CARE.DE. OR MEDICAL-CARE.DE. OR MENTAL-HEALTH-CARE.DE. OR MENTAL-HEALTH- SERVICE.DE. OR RURAL-HEALTH-CARE.DE. OR TERMINAL-CARE.DE.
16.	SEARCH:	HEALTH ADJ SERVICES
17.	SEARCH:	9 OR 10 OR 11 OR 12 OR 13 OR 14 OR 15 OR 16
18.	SEARCH:	8 AND 17
19.	SEARCH:	18 AND LG=EN AND HUMAN=YES
Database: Medline		
1.	SEARCH:	EXPECTATION\$1.ti,ab
2.	SEARCH:	(POSITIVE ADJ OUTCOME ADJ EXPECTANCY).TI,AB
3.	SEARCH:	(NEGATIVE ADJ OUTCOME ADJ EXPECTANCY).TI,AB
4.	SEARCH:	HOPE\$.TI,AB
5.	SEARCH:	(EXPECTANCY ADJ THEORY).TI,AB
6.	SEARCH:	EXP HEALTH SERVICES/ OR DELIVERY OF HEALTH CARE/ OR EXP AFTER-HOURS CARE/ OR DELIVERY OF HEALTH CARE, INTEGRATED/ OR EXP CHILD CARE/ OR EXP COMMUNITY HEALTH SERVICES/ OR EXP DENTAL HEALTH SERVICES/ OR EXP DIETARY SERVICES/ OR EXP EMERGENCY MEDICAL SERVICES/ OR EXP GENETIC SERVICES/ OR EXP HEALTH SERVICES MISUSE/ OR EXP

		MENTAL HEALTH SERVICES/ OR EXP NURSING CARE/ OR EXP NURSING SERVICES/ OR EXP PATIENT CARE/ OR EXP PHARMACEUTICAL SERVICES/ OR EXP PREVENTIVE HEALTH SERVICES/ OR EXP REHABILITATION/ OR EXP REPRODUCTIVE HEALTH SERVICES/ OR EXP SOCIAL WORK/ OR EXP WOMEN'S HEALTH SERVICES/
7.	SEARCH:	QUALITY OF HEALTH CARE/
8.	SEARCH:	6 OR 7
9.	SEARCH:	1 OR 2 OR 3 OR 4 OR 5
10.	SEARCH:	8 OR 9
Database: PsycInfo		
1.	SEARCH:	EXPECTATIONS.W..DE.
2.	SEARCH:	PATIENT ADJ EXPECTATIONS
3.	SEARCH:	TREATMENT ADJ RELATED ADJ OUTCOME ADJ EXPECTATION\$1
4.	SEARCH:	PATIENT ADJ RELATED ADJ SELF ADJ EFFICACY ADJ EXPECTATION\$1
5.	SEARCH:	POSITIVE ADJ OUTCOME ADJ EXPECTANCY
6.	SEARCH:	NEGATIVE ADJ OUTCOME ADJ EXPECTANCY
7.	SEARCH:	ATTITUDES.W..DE.
8.	SEARCH:	HOPE.W..DE.
9.	SEARCH:	EXPECTANCY ADJ THEORY
10.	SEARCH:	TREATMENT-BARRIERS.DE.
11.	SEARCH:	1 OR 2 OR 5 OR 6 OR 7 OR 8 OR 9 OR 10
12.	SEARCH:	HEALTH ADJ CARE
13.	SEARCH:	HEALTH-CARE-DELIVERY.DE.
14.	SEARCH:	HEALTH-CARE-SERVICES.DE. OR MENTAL-HEALTH-SERVICES.DE. OR COMMUNITY-MENTAL-HEALTH-SERVICES.DE. OR PRIMARY-HEALTH-CARE.DE.
15.	SEARCH:	EMERGENCY-SERVICES.DE.
16.	SEARCH:	QUALITY-OF-SERVICES.DE.
17.	SEARCH:	QUALITY-OF-CARE.DE.
18.	SEARCH:	12 OR 13 OR 14 OR 15 OR 16 OR 17
19.	SEARCH:	11 AND 18
20.	SEARCH:	19 AND LG=EN

Appendix 2. Descriptive statistics of pre- and post-visit expectations items by mode of administration and total sample (lower scores equal more positive expectations)

	GP patient Interview Questionnaire	GP patient Self-admin. Questionnaire	Hospital Interview Questionnaire	Hospital Self-admin Questionnaire	Total sample	Skew & Kurtosis (total sample)
<i>Structure of health care</i>	Mean (sd)	Mean (sd)	Mean (sd)	Mean (sd)	Mean (sd)	
<i>1. Easy to find where to go when there</i>						
a) Hope for this ideally	1.28 (0.45)	1.29 (0.49)	1.28 (0.45)	1.47 (0.62)	1.36 (0.55)	1.41 2.37
b) Expect this in reality	1.99 (0.97)	1.50 (0.64)	2.46 (1.36)	1.92 (0.89)	1.78 (0.89)	1.28 1.60
c) It was(post)	1.23 (0.46)	1.41 (0.72)	1.78 (1.21)	1.78 (0.80)	1.57 (0.80)	1.77 3.63
<i>2. Easy to get around inside building</i>						
a) Hope for this ideally	1.26 (0.47)	1.34 (0.55)	1.31 (0.61)	1.50 (0.59)	1.40 (0.57)	1.31 1.84
b) Expect this in reality	1.15 (0.95)	1.57 (0.77)	2.41 (1.37)	2.02 (1.03)	1.84 (0.98)	1.15 0.63
c) It was(post)	1.30 (0.61)	1.44 (0.74)	1.81 (1.13)	1.98 (0.85)	1.68 (0.85)	1.41 1.87
<i>3. Clean inside</i>						
a) Hope for this ideally	1.10 (0.30)	1.30 (0.56)	1.07 (0.26)	1.42 (0.63)	1.31 (0.57)	2.13 5.94
b) Expect this in reality	1.75 (0.94)	1.45 (0.67)	2.00 (0.89)	1.81 (0.94)	1.67 (0.86)	1.29 1.23
c) It was(post)	1.32 (0.60)	1.41 (0.58)	1.54 (0.79)	1.59 (0.74)	1.49 (0.67)	1.47 2.67
<i>4. Enough space in waiting room</i>						
a) Hope for this ideally	1.30 (0.49)	1.34 (0.59)	1.22 (0.42)	1.52 (0.73)	1.40 (0.64)	1.89 4.73
b) Expect this in reality	1.81 (0.84)	1.60 (0.79)	2.56 (1.33)	2.24 (1.06)	1.95 (1.01)	0.918 0.058
c) It was(post)	1.23 (0.43)	1.44 (0.65)	2.59 (1.45)	1.88 (0.96)	1.68 (0.92)	1.545 2.202
<i>Process of health care:</i>						
<i>5. Clear info on where to go</i>						
a) Hope for this ideally	1.25 (0.47)	1.33 (0.58)	1.11 (0.32)	1.40 (0.65)	1.34 (0.59)	1.905 4.332
b) Expect this in reality	1.75 (1.00)	1.59 (0.73)	1.72 (0.96)	1.98 (1.04)	1.78 (0.93)	1.135 0.632
c) It was(post)	1.59 (0.96)	1.65 (0.87)	1.43 (0.66)	1.65 (0.73)	1.63 (0.81)	1.477 2.371
<i>6. Given appointment for a convenient date / time</i>						
a) Hope for this ideally	1.19 (0.43)	1.46 (0.76)	1.15 (0.41)	1.45 (0.78)	1.41 (0.74)	2.324 6.484
b) Expect this in reality	2.81 (1.27)	2.23 (1.06)	2.33 (1.33)	2.17 (0.96)	2.27 (1.07)	0.691 -0.256
c) It was(post)	1.72 (1.20)	1.83 (1.05)	1.56 (0.98)	11.68 (0.86)	1.80 (0.99)	1.278 1.145
<i>7. Seen on time</i>						
a) Hope for this ideally	1.33 (0.50)	1.50 (0.75)	1.30 (0.54)	1.39 (0.70)	1.43 (0.70)	1.984 4.603
b) Expect this in reality	3.11 (1.30)	2.52 (1.13)	3.52 (1.23)	2.69 (1.10)	2.72 (1.17)	0.238 -0.968
c) It was(post)	2.80 (1.63)	2.34 (1.24)	2.85 (1.52)	2.59 (1.27)	2.53 (1.33)	0.404 -1.105
<i>8. Given a choice of hospitals to go to if referred on (not incl. scale)</i>						
a) Hope for this ideally	1.57 (0.95)	1.48 (0.67)	1.56 (0.97)	1.72 (0.89)	1.60 (0.82)	1.429 2.071
b) Expect this in reality	2.34 (1.10)	2.10 (0.96)	2.35 (1.35)	2.47 (1.07)	2.29 (1.06)	0.592 -0.262
c) It was(post)	2.83 (1.56)	2.53 (1.15)	3.30 (1.38)	2.29 (1.11)	2.46 (1.19)	0.408 -0.753
<i>9. Given a choice of doctors to consult (not included in scale)</i>						
a) Hope for this ideally	1.56 (1.02)	1.61 (0.77)	2.17 (1.15)	1.99 (0.97)	1.80 (0.93)	1.125 0.811
b) Expect this in reality	2.58 (1.35)	2.28 (1.05)	3.13 (1.13)	2.75 (1.10)	2.56 (1.14)	0.321 -0.780
c) It was(post)	2.89 (1.70)	2.68 (1.25)	3.87 (1.26)	2.95 (1.04)	2.90 (1.26)	-0.015 -1.023
<i>10. Reception staff helpful</i>						
a) Hope for this ideally	1.17 (0.38)	1.35 (0.59)	1.17 (0.38)	1.48 (0.73)	1.38 (0.63)	2.100 6.328
b) Expect this in reality	2.31 (1.21)	1.89 (0.98)	1.61 (0.83)	2.05 (1.06)	1.97 (1.04)	1.026 0.366
c) It was(post)	1.93 (1.17)	1.81 (0.95)	1.46 (0.69)	1.90 (0.86)	1.84 (0.93)	1.211 1.470

11. Doctor helpful								
a) Hope for this ideally	1.07 (0.26)	1.24 (0.48)	1.09 (0.29)	1.30 (0.49)	1.24 (0.47)	2.81	6.780	
b) Expect this in reality	1.55 (0.89)	1.60 (0.75)	1.65 (0.76)	1.73 (0.81)	1.66 (0.79)	1.339	2.050	
c) It was(post)	1.32 (0.58)	1.55 (0.82)	1.31 (0.75)	1.89 (0.88)	1.65 (0.85)	1.436	1.929	
12. Doctor respectful and treats me with dignity								
a) Hope for this ideally	1.10 (0.68)	1.29 (0.53)	1.09 (0.29)	1.44 (0.60)	1.32 (0.55)	1.865	5.269	
b) Expect this in reality	1.38 (0.68)	1.49 (0.71)	1.63 (0.88)	1.85 (0.86)	1.64 (0.81)	1.398	2.048	
c) It was(post)	1.24 (0.43)	1.49 (0.78)	1.22 (0.42)	2.06 (0.96)	1.67 (0.88)	1.349	1.390	
13. Doctor knowledgeable about/ understand my health condition/ problem								
a) Hope for this ideally	1.17 (0.41)	1.28 (0.56)	1.09 (0.29)	1.35 (0.62)	1.29 (0.56)	2.118	4.892	
b) Expect this in reality	1.81 (1.02)	1.75 (0.94)	1.80 (0.96)	1.83 (0.87)	1.79 (0.92)	1.192	1.010	
c) It was(post)	1.42 (0.74)	1.61 (0.82)	1.28 (0.69)	1.94 (0.79)	1.70 (0.82)	1.161	1.288	
14. Doctor clear and easy to understand								
a) Hope for this ideally	1.17 (0.41)	1.34 (0.54)	1.09 (0.29)	1.35 (0.55)	1.31 (0.52)	1.548	2.447	
b) Expect this in reality	1.58 (0.82)	1.72 (0.82)	1.89 (1.04)	1.81 (0.87)	1.76 (0.86)	1.100	0.824	
c) It was(post)	1.19 (0.39)	1.51 (0.74)	1.28 (0.56)	1.76 (0.78)	1.57 (0.74)	1.416	2.311	
15. Doctor involve me in decisions about my treatment								
a) Hope for this ideally	1.26 (0.53)	1.35 (0.60)	1.28 (0.63)	1.51 (0.77)	1.40 (0.68)	1.961	4.354	
b) Expect this in reality	1.85 (1.10)	1.93 (0.98)	1.96 (1.13)	1.84 (0.89)	1.88 (0.96)	1.35	0.459	
c) It was(post)	1.55 (0.90)	1.61 (0.82)	1.87 (1.29)	2.15 (0.91)	1.89 (0.96)	0.972	0.505	
Consultation and treatment Procedures:								
16. A physical examination								
a) Hope for this ideally	2.65 (1.75)	1.69 (0.82)	3.07 (1.44)	1.74 (0.92)	1.90 (1.11)	1.318	1.091	
b) Expect this in reality	2.79 (1.68)	2.18 (1.04)	3.15 (1.39)	2.09 (0.95)	2.27 (1.15)	0.734	-0.217	
c) I was given (post)	No Yes % (n) % (n) 51(38) 49(36)	No Yes % (n) % (n) 41(125) 5(179)	No Yes % (n) % (n) 32 (17) 68(37)	No Yes % (n) % (n) 35 (107) 65(198)	No Yes % (n) % (n) 39 (287) 61(450)	N/A see % (n)		
17. Tests/ investigations								
a) Hope for this ideally	2.79 (1.69)	1.58 (0.74)	2.54 (1.42)	1.54 (0.69)	1.74 (1.00)	1.709	2.817	
b) Expect this in reality	2.89 (1.59)	1.85 (0.89)	2.65 (1.35)	2.08 (1.01)	2.10 (1.10)	0.989	0.399	
c) I was given (post)	No Yes % (n) % (n) 53 (39) 47(35)	No Yes % (n) % (n) 50 (147) 50(148)	No Yes % (n) % (n) 24 (13) 76 (41)	No Yes % (n) % (n) 57 (170) 44(135)	No Yes % (n) % (n) 51 (369) 49(359)	N/A see % (n)		
18. Given diagnosis or have a previous diagnosis confirmed								
a) Hope for this ideally	2.34 (1.58)	1.53 (0.73)	2.44 (1.51)	1.55 (0.66)	1.68 (0.94)	1.800	3.378	
b) Expect this in reality	2.69 (1.56)	1.88 (1.00)	2.96 (1.49)	1.81 (0.84)	2.00 (1.10)	1.693	6.095	
c) I was given (post)	No Yes % (n) % (n) 49 (36) 51(38)	No Yes % (n) % (n) 38 (114) 62(188)	No Yes % (n) % (n) 46 (25) 54(29)	No Yes % (n) % (n) 41 (123) 59(180)	No Yes % (n) % (n) 41 (298) 59(435)	N/A see % (n)		
19. A new, changed, or repeat prescription								
a) Hope for this ideally	2.93 (1.73)	1.77 (0.88)	2.28 (1.57)	2.14 (1.03)	2.14 (1.19)	0.906	-0.078	
b) Expect this in reality	3.07 (1.68)	1.88 (0.89)	3.37 (1.46)	2.25 (1.03)	2.25 (1.17)	0.785	-0.187	
c) I was given (post)	No Yes % (n) % (n) 32 (23) 68(50)	No Yes % (n) % (n) 43 (129) 57(171)	No Yes % (n) % (n) 69 (37) 32 (17)	No Yes % (n) % (n) 56 (170) 44(132)	No Yes % (n) % (n) 49 (359) 51(370)	N/A see % (n)		

20. <i>A referral to another doctor/ specialist/ therapist</i>							
a) <i>Hope for this ideally</i>	2.85 (1.64)	1.91 (0.99)	3.31 (1.60)	2.31 (1.11)	2.27 (1.23)	0.575	-0.760
b) <i>Expect this in reality</i>	3.03 (1.50)	2.08 (0.94)	3.44 (1.45)	2.56 (1.00)	2.46 (1.14)	0.417	-0.559
c) <i>I was given (post)</i>	No Yes % (n) % (n)	N/A	sec % (n)				
	53 (39) 47(34)	64 (191) 36(107)	54 (29) 46 (25)	69 (211) 31 (93)	65(470) 35(259)		
<i>Total procedures performed at post-visit</i>	% (n)						
0 none	1 (1)	3 (9)	4 (2)	5 (14)	4 (26)		
1	23 (17)	20 (54)	7 (4)	21 (60)	20 (135)		
2	20 (15)	29 (79)	31 (17)	28 (84)	28 (195)		
3	27 (20)	29 (79)	28 (15)	28 (83)	28 (197)		
4	23 (17)	11 (30)	26 (14)	13 (39)	14 (100)		
All 5 performed	4 (3)	9 (24)	4 (2)	5 (13)	6 (42)		
21. <i>Reassurance about my condition</i>							
a) <i>Hope for this ideally</i>	1.64 (1.01)	1.43 (0.66)	1.74 (1.15)	1.42 (0.61)	1.46 (0.73)	1.934	4.708
b) <i>Expect this in reality</i>	2.04 (1.12)	1.93 (0.93)	2.20 (1.17)	2.09 (0.95)	2.03 (0.98)	0.826	0.106
c) <i>I was given (post)</i>	1.85 (1.12)	2.04 (1.04)	1.89 (1.21)	2.07 (0.98)	2.02 (1.04)	0.947	0.420
22. <i>Advice about my health/ condition</i>							
a) <i>Hope for this ideally</i>	1.70 (1.13)	1.39 (0.58)	1.37 (0.71)	1.40 (0.55)	1.42 (0.65)	2.80	6.547
b) <i>Expect this in reality</i>	1.91 (1.16)	1.66 (0.78)	1.57 (0.79)	1.72 (0.85)	1.70 (0.85)	1.380	2.020
c) <i>I was given (post)</i>	2.24 (1.37)	2.00 (1.01)	1.63 (0.98)	2.04 (0.96)	2.01 (1.03)	0.978	0.456
<i>Full explanation, in clear language, about:</i>							
23. <i>What caused my condition/ problem</i>							
a) <i>Hope for this ideally</i>	2.34 (1.61)	1.46 (0.71)	2.24 (1.55)	1.51 (0.72)	1.62 (0.96)	1.942	3.709
b) <i>Expect this in reality</i>	2.69 (1.55)	2.01 (1.03)	2.65 (1.44)	1.93 (1.04)	2.08 (1.15)	0.888	-0.178
c) <i>I was given (post)</i>	2.73 (1.42)	2.07 (1.06)	2.72 (1.41)	2.31 (0.88)	2.28 (1.08)	0.640	-0.186
24. <i>How to manage condition/ symptoms/ pain</i>							
a) <i>Hope for this ideally</i>	1.76 (1.19)	1.41 (0.65)	1.65 (1.18)	1.54 (0.71)	1.51 (0.79)	1.991	4.795
b) <i>Expect this in reality</i>	2.04 (1.20)	1.80 (0.84)	1.87 (1.18)	1.98 (1.05)	1.90 (1.00)	1.71	0.611
c) <i>I was given (post)</i>	2.03 (1.19)	1.98 (1.01)	2.00 (1.18)	2.33 (0.89)	2.13 (1.01)	0.708	-0.064
25. <i>The benefits/ side effects or complications/ risks of treatment (post q 18)</i>							
a) <i>Hope for this ideally</i>	1.83 (1.26)	1.47 (0.75)	1.41 (0.84)	1.59 (0.79)	1.55 (0.84)	1.896	3.900
b) <i>Expect this in reality</i>	2.10 (1.38)	1.85 (0.92)	1.74 (1.12)	1.99 (1.06)	1.92 (1.05)	1.066	0.339
c) <i>I was given (post)</i>	2.68 (1.34)	2.19 (1.10)	2.37 (1.29)	2.16 (0.90)	2.24 (1.08)	0.643	-0.219
26. <i>I was given the opportunity to discuss problems in life</i>							
a) <i>Hope for this ideally</i>	2.60 (1.63)	2.03 (1.07)	2.81 (1.51)	2.18 (1.05)	2.20 (1.18)	0.693	-0.475
b) <i>Expect this in reality</i>	3.00 (1.65)	2.53 (1.16)	3.07 (1.33)	2.60 (1.14)	2.64 (1.22)	0.171	-1.04
c) <i>I was given (post)</i>	2.60 (1.57)	2.63 (1.23)	3.09 (1.52)	2.78 (1.07)	2.72 (1.23)	0.112	-0.980
<i>Treatment outcomes</i>							
27. <i>Improved quality of life</i>							
a) <i>Hope for this ideally</i>	1.52 (0.86)	1.54 (0.74)	1.33 (0.70)	1.46 (0.64)	1.49 (0.71)	1.524	2.43
b) <i>Expect this in reality</i>	1.91 (1.10)	2.04 (0.92)	1.80 (1.02)	1.91 (0.95)	1.95 (0.96)	0.738	-0.16
c) <i>I expect (post)</i>	1.82 (0.94)	1.97 (0.87)	1.87 (1.15)	2.24 (0.95)	2.06 (0.95)	0.639	-0.13

28. <i>A reduction in my symptoms/problems</i>							
a) <i>Hope for this ideally</i>	1.49 (0.89)	1.42 (0.62)	1.46 (0.91)	1.37 (0.64)	1.41 (0.68)	2.79	5.789
b) <i>Expect this in reality</i>	2.01 (1.14)	1.98 (0.87)	1.89 (1.02)	2.12 (0.91)	2.04 (0.93)	0.754	0.259
c) <i>I expect (post)</i>	1.93 (1.10)	1.94 (0.85)	2.04 (1.21)	2.14 (0.91)	2.03 (0.94)	0.762	0.224
29. <i>Increased chances of improvements to my health/staying healthy</i>							
a) <i>Hope for this ideally</i>	1.51 (0.92)	1.51 (0.65)	1.22 (0.50)	1.47 (0.61)	1.48 (0.66)	1.430	2.480
b) <i>Expect this in reality</i>	1.94 (1.14)	1.92 (0.82)	1.56 (0.74)	2.14 (0.92)	1.99 (0.91)	0.710	0.063
c) <i>I expect (post)</i>	1.91 (0.95)	2.00 (0.87)	1.78 (1.06)	2.25 (0.88)	2.08 (0.91)	0.630	0.121
No. of all pre-and post-respondents	71-74	285-332	54	285-345	695-805		