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Reasons underpinning patients' preferences for various angina treatments

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Abstract

Objective To elicit patients' preferences for the treatment of angina.

Design Angina patients were interviewed in order to elicit their personal reasons underlying preferences for various treatment options. Interviews followed a general repertory grid technique, in which seven treatment options were presented to patients in triads. Treatments considered ranged from medication to invasive revascularization therapies, with a 'no treatment' option.

Setting Two general practices in Norwich, Norfolk.

Subjects Twenty-one patients with diagnosed angina, which was both mild and stable.

Main outcome measures Treatment preferences verbalized by patients during interview, and the underlying reasons for these.

Results Attitudes voiced towards the range of treatments for angina were diverse; 27 different reasons underlying patients' preferences were identified. Patients' preferences were largely justified by reasons associated with the conditional effectiveness or otherwise of treatments. When presented with treatment triads, medication (drug) treatments were over 2.5 times more likely to be chosen as a most preferred option than invasive or surgical treatments. Although surgical treatments were generally considered to be 'effective', it was perceived that they were more appropriate for situations when the condition became life-threatening. There were occasions, however, when preferences were driven by other reasons, such as a desire to avoid surgery because it was perceived negatively as 'invasive' and 'frightening'. Drug treatments were viewed as 'quick', 'easy' and reversible. Personal experiences of the effectiveness or otherwise of treatments were frequently cited as reasons for stated preferences. However, patients often commented that they would prefer the doctor to make the decision about their treatment.

Conclusions Patients' choices among treatments was largely driven by perceptions of their effectiveness or otherwise. Although surgery was perceived as 'effective' it was also seen as conditionally so, dependent upon severity of the condition – which is not necessarily the case, as the risks of adverse events and surgical complications increase for emergency cases. As such, access to better information about the effectiveness and timeliness of interventions is needed. Although respondents held anxieties about treatment, particularly invasive or surgical treatments, fewer choices were driven by emotional and lifestyle factors unrelated to 'effectiveness', such as fear or ease of treatment.

Introduction

Information on patients' preferences for treatment options, where alternatives exist, is sparse.^{1,2} A systematic review of the literature on patients' preferences in clinical decision making reported relatively little literature on the patients' perspective, and focused mainly on the challenges for doctors in involving patients in decisions.³ The authors emphasized that: 'Finding ways to elicit patients' preferences is therefore a considerable challenge'.³ The issue is important for both patient care and research methodology. Preference assessments are of particular value in building up a patient-based 'ethics of evidence' when there is uncertainty about when to provide more or less intensive or invasive treatments to patients, and when issues of health service prioritization are being debated. Preferences could theoretically influence patients' adherence to, and satisfaction with, treatment, and thereby have some impact on their health outcomes and on the cost-effectiveness of health services.⁴⁻⁶ Patients' preferences for treatment also have the potential for contaminating unblinded randomized controlled trials.⁷ The scarcity of information about patients' treatment preferences and the acceptability of alternatives, and their effects on outcome, leads to the question of whether actual informed consent for treatment is really an 'illusion'.⁸ Where quality of life and life expectancy issues are of relevance, people's informed preferences should be as important in

health care decision making as the body of evidence on a procedure's clinical effectiveness and costs.¹

In the course of a pilot study to quantify the treatment preferences of angina patients, over 20 patients took part in semi-structured interviews. These interviews provided insight into the reasons underlying patients' preferences for treatment and forms the basis of this article.

Methods

The sample

Angina patients were recruited from two general practices in Norwich. The eligibility criteria were: that patients should have been diagnosed with angina within the past 5 years; that patients' angina was 'mild and stable'; that the patients were not currently being considered for invasive or surgical options; and that the patients had either not had a cardiology referral at all or that they had only seen a cardiologist for post-diagnosis assessment without further invasive intervention (a routine process in Norwich with the availability of open-access chest pain assessment clinics). A total of 21 patients were interviewed. Once patients had responded to a letter of invitation from their general practitioners (GPs), they were telephoned by a researcher to arrange an interview at their surgery. Ethical consent was obtained from The Norwich District Ethics Committee.

Materials used

Descriptions of seven different potential treatment options (three of which were drug-based, three of which were invasive or surgical, and one of which involved 'no treatment') for angina were produced for presentation to respondents on pale-blue A4 laminated show cards, including information about risks and benefits. The laminated show cards (available from the authors) were not designed for use as a possible clinical tool. The driver for the approach was scientific research – to elicit angina patients' views and constructs regarding possible treatment options in an objective and robust manner.

Each of the seven treatments was described separately on an A4 laminated show card; they were not of equal length. The print was large, to help readability especially for older patients who might have problems with vision. The cards provided an objective description of the treatments, and a description of the chances of their success and possible side-effects using the latest available information. They provided information and not advice. The information was presented simply, and was based on British Heart Foundation patient literature, which was updated. This was the sole source of information on the treatments provided. The cards were presented to the patients in groups of three.

The treatment options presented on the cards were: no treatment (treatment 1); drug therapy to treat symptoms only (treatment 2); drug therapy to prevent occurrence of chest pain/breathlessness (treatment 3); drug therapy to prevent symptoms occurrence and reduce risk of future heart attack (treatment 4); balloon angioplasty (invasive treatment 5); coronary artery bypass surgery (CABG) (invasive surgical treatment 6); and keyhole surgery (invasive surgical treatment 7). A further A4 laminated card was designed, which gave a standard description of angina and summarized the interview instructions for the patient.

A short questionnaire was also administered that requested basic socio-demographic details (age, sex, level of education, occupation, housing tenure), self perceived health status,⁹ use of

health services, and severity and impact of angina.¹⁰

Interview rationale

The interview format was generally based upon a repertory grid framework; a technique that has been widely used in psychology, marketing and consumer choice.¹¹ In brief, respondents were asked to consider preferences for a number of items. The items are presented to the respondents in threes (a triad) and they are asked for their most and least preferred item and the reasons for their choice. In this study the items were seven angina treatments. From trial interviews, offering three triads (of treatments) to each participant seemed reasonable. A randomization method was then devised for offering each of 20–30 patients, three treatment triads from the seven possible options. The random ordering of triads chosen followed a 'balanced, incomplete block' design. The first two triads contained six different treatments; the final triad contained the missing treatment and one other treatment from each of the first two triads. Therefore, in the 21 interviews conducted, each treatment was used a total of 27 times. Furthermore, for 21 interviewees receiving three triads, all combinations of the seven options were presented a similar number of times, and each patient considered each of the seven options at least once.

Conducting the interviews

Interviews took place in the GPs' consulting rooms. The interviewer (NL), although not a 'health professional', was an experienced interviewer with biomedical expertise and had been thoroughly briefed by AB and SE regarding the many issues surrounding the seven treatments.

Patients first completed the small demographic and health status questionnaire with the interviewer. Patients were then shown the A4 card containing the definition of angina and a summary of what would happen next. It was explained to patients that they would be presented with three different triads of treatment options for angina to consider and that these

had been chosen at random prior to the interview. This part of the interview was audio-taped with the patients' consent. The interviewer emphasized the hypothetical nature of the situation to respondents. The task was then introduced by the interviewer as follows: 'Imagine that your angina symptoms were slightly worse than they are now, and you went to your GP, who gave you three and only three possible treatment options. Which treatment would you most prefer and why, and which one would you least prefer and why?' It was explained that this process would be repeated three times (for three triads), and the patient was then handed the first set of show cards to read through.

Ample time was given to the patients to read the information. After they had read the cards they were invited to ask questions about anything on the cards, most declined as they stated that they 'understood' the treatments. Indeed they all indicated that they had 'an understanding' of the different treatments before they read the cards. They all said that they had discussed medical and surgical treatments with their doctors at various times. Many of the concepts mentioned on the cards were raised by the participants during the interview (e.g. scarring during CABG, the newness of the keyhole technique, headaches from use of nitrates). How reading the cards changed the participants' 'understanding' of the seven treatments was not addressed within this study. Providing the cards did however ensure that all participants saw exactly the same information. The use of the cards both aided clarity and consistency, in that it ensured that all the patients saw the same definition.

The interviewer probed the patient's reasons for treatment preferences to get beyond superficial answers, and summarized, reflected back, and paraphrased answers in order to ensure that the reasons behind option choices were fully explored. After the third triad, the interview ended. The interviews were not formally timed, but were between 30–60 min each, with most lasting for approximately 45 min. Doing three triads did not appear arduous for the patients. It should be noted that these interviews were

semi-structured, and formed part of the repertory grid exercise, and should not be confused with qualitative interviews.

For every triad of treatment options presented to patients at the interview, the most and least preferred option stated was noted. During the study, a total of 63 triads were presented to patients with each treatment featuring 27 times.

Coding procedure

The interviewer and one other researcher each listened to the tape recordings of the interviews and recorded separately the key reasons behind the preferences cited by each patient. The two researchers then met twice to compare notes and together developed an agreed list of reasons for each patient. These were then agreed by the research team. General themes were identified across the diverse wording of reasons. A third member of the research team subsequently listened to each audio-taped interview and transcribed the elicited reasons for treatment preferences, in order to provide insightful illustrations of the categorized data.

Results

Patient characteristics

Of the 21 patients, 13 were male and eight were female. Their ages ranged from 43 (the only person under 59 years) to 80 years (mean: 68.3; standard deviation: 9.0; median: 70). Thus apart from one patient, the respondents were elderly or very elderly. Six patients had some form of further education (obtaining mainly professional qualifications), and the remainder had left school between 14 and 16 years of age. Seven patients had a professional occupation, and 19 patients were home-owners. Thus respondents represented a fairly broad mix of socio-economic circumstances. Eleven respondents (52%) stated that their angina limited their activities in some way. When asked how their current health was 'compared with other people your age', 14% said 'excellent', 24% said 'very good', 42–43%

said 'good', 10% said 'fair' and only 10% said 'poor'. Thus patients generally had a positive attitude towards their health.

Patients' preferences

Table 1 summarizes the treatment preferences verbalized by the patients during the interview. The 'no treatment' option was selected 26 times (of a maximum of 27), as the 'least preferred' treatment within the triads presented.

One person however, did choose this as their most preferred option in response to a triad containing 'no treatment' and two surgical treatments. This particular patient (70+) was adamant about not wanting any surgery. Because all participants were 'patients' *de facto* and had been receiving some form of medical treatment for some years, the sample was probably biased towards this outcome. This raises the possibility that patients with a fear of an invasive or surgical treatment might opt for 'no treatment' as the lesser of two evils if given an either/or choice.

The most preferred option was drug treatment that offered prevention of symptoms occurring and provided some risk reduction against heart attacks. During the presentation of the treatment triads, this was chosen 21 times (of a

Table 1 Frequency of patients' preferences verbalised during interview

Treatment number	Most preferred (n)	Least preferred (n)
1 = No treatment	1	26
2 = Drugs to treat symptoms	12	7
3 = Drugs to prevent symptoms	10	3
4 = Drugs to prevent symptoms and reduce risk of heart attacks	21	0
5 = Balloon angioplasty	6	4
6 = CABG	3	14
7 = Keyhole surgery	7	7
Drug treatments	43	10
Surgical treatments	16	25
No treatments	1	26

During the interviews, patients were asked to choose their most and least preferred treatments from three random triads of seven treatments. Each treatment was used a total of 27 times in the 21 interviews.

possible 27) as the most preferred treatment, and it was never chosen as the least preferred option. In total, the three drug treatments were over 2.5 times more likely to be chosen as a most preferred option compared with the three invasive or surgical options. Again, there could be a selection bias with these findings as all the participants were already taking some drug regime that was generally effective as their angina was stable.

Surgical or invasive treatments were 2.5 times more likely to be chosen as a least preferred option compared with drug therapies. CABG was particularly unpopular, being chosen 14 times as the least preferred option. However, for three patients, CABG was their most preferred option within a triad. All these patients were under 70 years and the triads all included the 'no treatment' option.

Reasons given by patients for their treatment preferences

Table 2 lists the reasons patients gave for their treatment preferences in order of frequency. We identified 27 reasons, several of which were quite frequently mentioned. In this section the main reasons are given, illustrated with appropriate quotations from respondents in an attempt to elucidate why they made their treatment choices.

Worthless ($n = 21$)

'Worthless' was the main reason that patients gave for 'no treatment' being their least preferred option. This reason (cited 21 times) was the most common given throughout the study.

With no treatment at all you could just go (and) have a heart attack and die. (003, male aged 70+, non-professional, activities limited by angina)

If you've got choice you obviously need something to help you get better from it, don't you? (015, female aged 70+, professional, activities limited by angina)

That's (no treatment) a no-brainer (013, male aged < 70, professional, activities not limited by angina)

Table 2 Reasons patients gave for angina treatment preferences

Reason given/ranking	Frequency	Angina treatments
1 = Worthless	21	1
2 = Effective	18	2,3,4,5,6,7
3 = Appropriate for severe symptoms	17	5,6,7
4 = Risky	16	5,6,7
5 = Bad effects from procedure	13	2,5,6,7
6 = Invasive	10	5,6,7
7 = Encouraged to have it by what I know	8	2,3,4,5,6
7 = Frightening	8	1,5,6,7
7 = Easy to do	8	2,3,4
7 = Suitable for maintaining my lifestyle	8	2,3,4
11 = Put-off by what I know personally	7	2,5,6,7
12 = Suitable for old people	5	2,3,4
13 = Quick to do	4	2,3,4
13 = Too much anaesthetic	4	5,6,7
15 = Pain-relieving	3	3,4
15 = Experimental	3	7
17 = Reversible	2	3,4
17 = Convenient	2	2,4
17 = Expensive for NHS	2	7
17 = Likely to result in burden on carers	2	1,6
21 = Too much time in hospital	1	6
21 = Willing to change lifestyle to avoid having	1	6
21 = Dependent on skills of others	1	7
21 = Beneficial for future	1	5
21 = Understandable	1	3
21 = Able to monitor	1	4
21 = Unknown	1	7

The coded treatment preference reasoning for all 21 patients are given in order of frequency. The associated treatment number which the coded reasons relate to are also shown (see Table 1 for key).

Effective (*n* = 18)

The next most common reason elicited was 'effective'. This was stated as a response to both drug and invasive/surgical treatments. Most typically it was voiced for drug treatments that patients were already taking.

I know that (drug treatment) is effective in my case, so why do anything more? (021, female aged < 70, professional, activities limited by angina)

This reason is clearly the reverse of 'worthless'. Both indicated that the main priority of most patients was to receive the best treatment for their condition, irrespective of any other factors. In the quote below, for example, it is clear that, in spite of being scared of surgery, this patient would choose this option as it provided the best outcome:

If you had that (surgery) you wouldn't worry about whether one (angina attack) would come on. I could be sitting here and it could come on...I'm not that old, and I have four grandchildren and...I'd like to be around for my grandchildren to grow up...(I would want CABG) if it was going to prolong my life... I'd be quite scared I think but that'd (surgery) be the best option. (007, female aged < 70, non-professional, activities limited by angina)

Appropriate for severe symptoms (*n* = 17)

It was clear that for some patients, there was no one type of treatment that was always most effective, and that effectiveness was seen as contingent upon the severity of symptoms. That is, respondents saw surgical treatments as highly appropriate for severe symptoms, and several

patients who opted for drug treatments also commented that they would consider surgery as a last resort and when it was unavoidable. However, because their symptoms of angina were stable, most participants could not (or did not want to) imagine a time when their angina was severe. In the introduction to the interview, people were asked to imagine that their symptoms were slightly worse than at present. However, this did not appear to trigger any feelings of 'a last resort situation' in them. Indeed, 80% of the patients felt their health was good to excellent, even when compared with individuals of their age who did not have angina.

I don't like the sound of that (balloon angioplasty), then again if it was the last thing to do they would have to do it wouldn't they? (018, female aged 70+, non-professional, activities limited by angina)

I think I would put things (surgery) off till as late as you can like keyhole surgery...till I thought my life was being completely dominated by angina attacks. I think it's got a way to go before that happens.' (021, female aged <70, professional, activities limited by angina)

But that's (surgery) something I would consider if I found that I was not able to enjoy my life at all. (021, female aged <70, professional, activities limited by angina)

(My least preferred is) drugs. The easy option frankly. I think if you're going to grasp the nettle, as it were, it's got to be (surgery). Yeah...let's get it over with. Taking into effect my age group. The older you get the less responsive I think you'll be to any treatment...the older you get the more risk of not surviving the damn thing... (012, male aged <70, professional, activities limited by angina)

Riskiness of invasive/surgical treatments (*n* = 16)

This reason was solely given as a response to the invasive and surgical options (angioplasty, CABG, keyhole surgery) and reflected the fears and uncertainties patients held for such treatments. In a sense, it also reflected the issue of effectiveness, but from the negative side (risks instead of benefits). Patients often elucidated

further why they considered one option riskier than another. Table 2 shows their coded reasons. For example, they referred to the uncertainty of a treatment [using terms/concepts such as 'unknown experience' (*n* = 1), dependent on the skills of others (1), 'experimental' (*n* = 3), or identifying a specific risk factor, such as 'anaesthetic' (*n* = 4)]:

...there's always a risk with surgery...With surgery there's always that doubt, even with keyhole surgery, or any type of surgery if you have to go under the anaesthetic. (003, male aged 70+, non-professional, activities limited by angina)

Bypass surgery [least preferred], it would be an unknown quantity (021, female aged <70, professional, activities limited by angina)

Bad effects from procedure (*n* = 13)

One relatively important concern affecting treatment preference raised by patients was, essentially, the issue of side-effects. This reason was mainly attributed to the consequences of surgical operations, such as painful and disfiguring scars and the length of time needed to recover. However, adverse effects from the nitrate spray treatment were also mentioned:

I gear the pace so I don't have to use it (nitrate spray). I don't like it (because of side effects). I gear any activity, even walking the dog or anything like that, you know, the pace, so I don't have to use that. As soon as I feel the tightness start to come I slow down. I hate using the stuff now. [012, male aged <70, professional, activities limited by angina)

The scars (from CABG) will be painful and I've seen (from a friend) that the leg wound could be difficult to heal (013, male aged <70, professional, activities not limited by angina)

Invasive (*n* = 10), frightening (*n* = 8)

Patients stated that the very invasiveness of the invasive/surgical procedures (*n* = 10) and the frightening nature of these (*n* = 8), drove their choices. Upon probing, this reason seemed to reflect a strong reluctance to be physically cut or have their bodies physically interfered with.

I'd stick with the least invasive..., till intervention was necessary....I would always go for the least invasive things (020, male aged < 70, professional, activities not limited by angina)

Positive ($n = 8$) and negative ($n = 7$) personal knowledge

The decisions of patients seemed to be particularly influenced by their existing knowledge and experiences (personal, or experiences of close others) ('encouraged to have it by what I know' $n = 8$; 'put off by what I know personally' $n = 7$). This 'personal relevance' could work both positively or negatively. For example, patients who had been given drugs that worked for them, or had known a significant other who had undergone a successful surgical treatment, were more inclined to choose these options. Conversely, bad experiences (usually of surgical treatments) – either personal or of a significant other – would put them off such options. For example:

We've lost a cousin with that one (CABG), so that puts me off straight away, you know. He came home alright..., but then within six months he passed away (collapsed with a heart attack). (015, female aged 70+, professional, activities limited by angina)

I'm against surgery chiefly because I've experienced people in the family who've had it (surgery), not for this complaint (angina) but other complaints, and they haven't survived.... (004, male aged 70+, non-professional, activities not limited by angina)

..I do know somebody who had this (angioplasty) done and she's perfect. And I think that gave me a boost...same age as I am....When I saw her, before..., she was really out of breath like that (pants)...you know, and she said she was waiting to go to have this (angioplasty) done. I saw her about a month after she'd had this done and she'd gone back to work. She's riding a bike!... (016, female aged 70+, non-professional, activities not limited by angina)

[Prefers drugs.] Well, I'm finding this way successful at the moment. (015, female aged 70+, professional, activities limited by angina)

Other reasons cited associated with medication options

Several other reasons patients gave for choosing drug regimes shared common themes, and included: 'easy to do' ($n = 8$), 'suitable for maintaining current lifestyle' ($n = 8$), 'suitable for old people' ($n = 5$), 'quick' ($n = 4$) 'convenient' ($n = 2$) 'reversible' ($n = 2$), 'able to monitor' ($n = 1$) and 'understandable' ($n = 1$). Taking medication reflected the immediate path of least resistance, requiring the smallest physical and emotional input and for these, predominantly elderly, patients (who are already taking pills daily) involved making no changes to their life at all. These patients were familiar with drugs. Medication, they felt currently worked for them, they felt it was safe, they understood it and it was perceived to be controllable by them. These reasons were diametrically opposed to those such as 'invasive', 'frightening' and 'risky' which were mentioned earlier.

I know that (drugs), it's easy to understand and I can monitor it myself to a degree. I mean it's what I've been used to doing for quite a few years...Stick with what you know, yes. (020, male aged < 70, professional, activities not limited by angina)

There's not that much risk with drugs as you can always come off the drugs and change them.... (003, male aged 70+, non-professional, activities limited by angina)

It's (drugs: nitrate spray) quite quick isn't it. That do relieve pain (017, female aged < 70, non-professional, activities limited by angina)

Involvement in decision making

Finally, while a question was not specifically asked about preference for involvement in decision making at the pilot stage, patients often commented that they would prefer the doctor to make the treatment decision.

It would be likely that I would accept the (doctor's) evidence what the best option was. I would certainly want to be involved in the decision making

in some way. I wouldn't want to just take their word...I'd want to know why, but I think it's probably unlikely that I would go against (doctor's advice). (006, male aged < 70, professional, activities not limited by angina)

I don't see any point in going to the doctor (if) you don't take any notice of what they (say). That's what they're there for. (010, male aged 70+, non-professional, activities limited by angina)

If the cardiologist thought I ought to have that (surgery) then I would accept it. The cardiologist said (to me) 'I want you to make up your mind whether to have this test. But I felt really she ought to advise me as to whether she thought it would be better for me.' (001, female aged 70+, non-professional, activities not limited by angina)

Discussion

Patients' preferences were largely driven by patients' desire for the most 'effective' treatment that would have greatest benefit for their life and health. Their views on the range of invasive to less invasive treatments for angina were, however, diverse, and seemed to reflect differences in belief about the relative and contingent effectiveness of the different treatments. Thus, while surgical treatments were generally considered to be 'effective', they were often perceived negatively, and to be more effective when symptoms were severe, and so to be avoided or delayed until the condition became life-threatening. But the latter situation is actually more risky for the patient in terms of the greater risk of adverse effects and complications of urgent or emergency surgery. It is unclear to what extent this perception was a consequence of lack of knowledge, and to what extent it is driven by other emotional and lifestyle concerns. For example, surgery was commonly described as 'invasive' and 'frightening'.

Patients' fears of surgery were often reinforced by previous negative experiences. Patient choices were predominantly being driven by considerations of the relative effectiveness/worthlessness of treatments. However, other factors such as lifestyle (e.g. convenience) and emotions (e.g. fear) were involved in their choices and these results raise the question of

how will doctors respond to the potential scenario whereby patients, on a fairly large scale, want the least (or a less) effective treatment that may also be less cost-effective for the health service in the longer term?¹² However, many respondents indicated that they preferred the doctor to make the treatment decision. This is an area where better information for patients, and access to patient support groups, on the effectiveness and timeliness of interventions, as well as clearly presented, simple information about risks, is needed.

This study clearly needs to be repeated with a larger sample of patients and should include other patient groups such as younger sufferers and those with treatment experiences other than medication. Use of a larger sample would enable more detailed analysis of differences between sample subsets. For example, our limited data was suggestive that fear of surgery was more prevalent among women and patients aged 75 and over, but this needs verification. This is an important issue because research in the UK has shown that cardiac patients aged 75 years and over have more severe coronary disease than younger patients but are more likely to be treated medically rather than surgically.^{13,14} These differences have been labelled as ageist.¹⁵

The richness of the more qualitative data presented here needs to be supported by more quantitative studies using questionnaires. This would enable analysis with other relevant variables (e.g. personality: extroversion, risk-taking; disability; health service experiences; social expectations and quality of life). Modelling is also required in order to assess the impact on health outcomes and costs of health care of incorporating (informed) patients' preferences into clinical decision making. If younger patients' preferences for surgery were acted upon clinically in a timely manner, especially before patients' fears of surgery potentially increased with older age, then invasive interventions (e.g. bypass surgery) may be likely to lead to a longer period of healthier, better quality of life – as well as reducing the need for invasive surgery when patients are older and, if co-morbidity is present, more at risk of adverse events. Eliciting patients' preferences is important

given that the balance of evidence about the effectiveness of a therapy is rarely sufficient to eliminate uncertainty.¹⁶ Then the question 'Do people want it'¹⁷ can be addressed in a rigorous manner and the body of knowledge on public acceptability of health technologies advanced.

It is hoped that the information presented here will be informative for clinicians, and helpful in their interactions with angina patients. This is particularly important as many patients stated that, despite their stated preferences, they would still follow whatever advice their doctors gave them. The use of laminated show cards was not intended for use as a clinical tool, but the issue of whether doctors could use them with patients to facilitate any joint decision-making process is a question for further research.

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Conflict of interest

None.

Role of co-investigators

Ann Bowling, Shah Ebrahim and Richard Thomson were responsible for the design of the study and obtaining funding; Ann Bowling, Shah Ebrahim and Nigel Lambert designed the information sheets about angina and treatment options; Nigel Lambert designed the repertory grids and their randomization, and conducted the interviews; Gene Rowe analysed and interpreted the data from the interviews; Ann Bowling transcribed the audio-tape recordings, wrote the initial draft of this paper and undertook the final revisions; Nigel Lambert and Gene Rowe undertook the penultimate draft; Michael Laurence and James Dalrymple sifted and initially approached consenting patients for inclusion in the study; all authors contributed to the interpretation of the data and the final paper.

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