

# Doctors' understanding of individualisation of drug treatments: a qualitative interview study

S Denford, J Frost, P Dieppe, N Britten

**To cite:** Denford S, Frost J, Dieppe P, *et al.* Doctors' understanding of individualisation of drug treatments: a qualitative interview study. *BMJ Open* 2013;**3**:e002706. doi:10.1136/bmjopen-2013-002706

► Prepublication history this paper are available online. To view these files please visit the journal online (<http://dx.doi.org/10.1136/bmjopen-2013-002706>).

Received 8 February 2013  
Revised 28 March 2013  
Accepted 16 April 2013

This final article is available for use under the terms of the Creative Commons Attribution Non-Commercial 2.0 Licence; see <http://bmjopen.bmj.com>

University of Exeter Medical School, Institute of Health Services Research, Exeter, UK

## Correspondence to

Dr Sarah Denford;  
s.denford@exeter.ac.uk

## ABSTRACT

**Objective:** To explore doctors' understanding of individualisation of drug treatments, and identify the methods used to achieve individualisation.

**Design:** In this exploratory study, we used in-depth qualitative interviews with doctors to gain insight into their understanding of the term 'individualised treatments' and the methods that they use to achieve it.

**Participants:** 16 general practitioners in 6 rural and 10 urban practices, 2 geriatricians and 2 clinical academics were recruited.

**Setting:** Primary and secondary care in South West of England.

**Results:** Understanding of individualisation varied between doctors, and their initial descriptions of individualisation were not always consistent with subsequent examples of the patients they had treated. Understandings of, and methods used to achieve, individualised treatment were frequently discussed in relation to making drug treatment decisions. Few doctors spoke of using strategies to support patients to individualise their own treatments after the consultation.

**Conclusions:** Despite its widespread use, variation in doctors' understanding of the term individualisation highlights the need for it to be defined. Efforts are needed to develop effective methods that would offer a structured approach to support patients to manage their treatments after consultations.

## INTRODUCTION

Self-management is one of the foundations of chronic disease management; however, it is not straightforward. To facilitate self-management, policymakers advocate that treatments are tailored, personalised or individualised to patients' needs<sup>1</sup> and that patients are supported to self-manage their conditions.<sup>2</sup> Despite this, terms such as individualisation and personalisation are regularly used to refer to a number of different things.<sup>3</sup> It is often unclear as to whether individualised treatments are individualised to patients' medical needs or their personal needs;<sup>3</sup> which may or may not be complementary.

## ARTICLE SUMMARY

### Article focus

- To explore doctors' understanding of individualisation of drug treatments.
- To identify the methods used to achieve individualisation.

### Key messages

- Doctors' understanding of individualised treatments ranged from treatments that are doctor led and evidence based to treatments that are prescribed after consideration of patients' priorities.
- Doctors' stated definitions of individualisation were not always congruent with the examples they provided from their clinical practice.
- Doctors rarely referred to patients' use of their medication after the consultation.

### Strengths and limitations of this study

- The use of qualitative methods generated a rich insight into doctors' understanding of individualisation, methods used to achieve individualisation, and the relationship between the two.
- Strategies were used to enhance the trustworthiness of the data including multiple coders, respondent validation and triangulation of findings with the existing literature.
- However, use of opportunity sampling may have resulted in a self-selected sample.

Successful pharmacological management of chronic disease requires appropriate drug prescription by doctors and appropriate drug utilisation by patients. This involves (at least) three processes. First, there is the interaction between the doctor and the patient within the medical consultation: the task here is to make a correct diagnosis and select appropriate treatments. Next is the doctor's prescription of appropriate drugs and dosage schedules to treat the individual patient if necessary. The third process is the patient's use of the drug in the context of their lives. This process is not linear; interactions between doctors and patients will occur both

before and after the prescription has been written and further interactions between patients and doctors are likely to occur during follow-up consultations. Treatments may be individualised at any stage.

Evidence-based guidelines are available to support doctors to select appropriate drugs for individual people.<sup>4 5</sup> However, there remains a degree of uncertainty regarding the effectiveness of certain pharmacological treatments for individual patients.<sup>6</sup> Results of randomised controlled trials cannot always be accurately applied to different individuals in varying sociodemographic and medical contexts.<sup>7 8</sup> Variation in the severity of the condition, the presence of comorbidity, genetic profile, polypharmacy and psychosocial factors all influence the effectiveness of the treatment and the potential risk of adverse drug reactions.<sup>7</sup> For individuals with multiple conditions, on multiple medications, or with a new or rare condition, the guidelines are often unsuitable or unavailable.<sup>9</sup> A large body of research promotes models of interaction or decision-making such as patient-centered care<sup>10</sup> and shared decision-making.<sup>11</sup> These are recommended by academics and policymakers as potential solutions in which patients' views and priorities are explored and treatment decisions are negotiated.<sup>12</sup> Despite the recommendations, these 'solutions' are not routinely used in clinical practice,<sup>13</sup> and there is very little consensus about what these terms entail or how they should be implemented.<sup>13-15</sup>

Previous qualitative research has explored how health-care providers make individualised treatment decisions in the face of competing priorities.<sup>16-18</sup> That research highlights the variation in the strategies doctors employ to make treatment decisions in such situations.<sup>16-18</sup> Doctors vary in their use of evidence and how they resolve the tensions that are inherent in using evidence alone (such as without consideration of patients' preferences). When faced with complex patients, doctors approach decisions with caution and uncertainty.<sup>16 19 20</sup>

Should a drug be prescribed, the third process is the patients' use of the drug after the consultation. In a synthesis of qualitative studies of medication taking, Pound *et al*<sup>21</sup> found that patients' use of medication is influenced by their judgements about the relative risks and benefits of using medications, the likelihood and impact of adverse effects and the acceptability of the treatment regime in their lives. Pound *et al*<sup>21</sup> also found evidence to suggest that patients are often motivated to minimise their use of medication—to reduce the dose of medication while still achieving some gain or to make the regime more acceptable or cost-effective. Patients actively sought answers to questions they had about their medication, for example, by stopping or lowering the dose of medication to test its effectiveness (lay testing); only taking medication when symptomatic (symptomatic use of medication); only taking medication or taking more medication to offset lifestyle factors such as drinking alcohol (strategic use of medication) and replacement of medication with non-pharmacological

treatments. Thus, many patients carry out their own individualisation according to their own criteria.

This project aims to explore doctors' understanding of the term 'individualised treatments' and the methods that they employ to achieve individualised treatments.

## METHODS

### Design

In this exploratory study, we used in-depth qualitative interviews<sup>22</sup> with doctors to explore their understanding and clinical practice.

### Sampling and data collection

We used opportunity sampling to recruit doctors to the study. We anticipated that individualisation would be particularly relevant to doctors who deal with patients who have a range of problems; therefore, we decided to sample doctors who are generalists (such as general practitioners (GP) and geriatricians). Two clinical academics (who were also hospital consultants) from within the medical school took part in pilot interviews to help test the procedure and topic guide.

We then emailed information about the study to 55 practice managers from practices on the Devon Primary Care Incentive Scheme register (a register of primary care practices who have applied for support from the Primary Care Research Network for participation in research), and asked interested doctors to make contact and arrange a time and place for the interview to take place. Sixteen doctors from 12 primary care practices responded to the email and took part in the interview. Two geriatricians were also recruited using snowball sampling. Our initial topic guide was based on a review of the literature and our own clinical experience (an experienced nurse and a rheumatologist are members of the team). Open-ended questions were used to explore the following topics (1) understanding of individualisation, (2) examples of individualising treatments, (3) methods used when patients' preferences are incompatible with guideline recommendations, (4) methods used to support patients to use their medication outside consultations, (5) methods used to individualise treatments for patients with multiple chronic conditions and (6) when individualisation is and is not appropriate. Participants were also asked if there was anything else they thought was relevant to individualisation. On the basis of the two pilot interviews with local clinical academics, the topic guide was modified to make it clear that we were interested in individualised drug (as opposed to talking or physical) treatments in patients with chronic (as opposed to acute) conditions. In order to obtain detailed accounts, doctors were encouraged to provide examples of patients they had seen whenever possible.

To contextualise our study, the interviewer gave the following explanation at the beginning of the interview: "Patients will vary in terms of the number of conditions they have, the amount of medications they take, and the severity of their condition(s). Patients will also have very

different lifestyles, priorities and beliefs about their condition(s) and treatments. We aim to explore the methods used by Healthcare providers to individualise treatments. We are aware that there is little consensus about what individualisation is, little guidance in the literature about how to do it, and that some doctors have developed their own approaches. We are interested in exploring the methods or strategies that are used by healthcare providers to tailor treatments to each individual patient." The interviewer started interviews by asking participants what they understood individualisation to be, and to provide an example of a time during which they had individualised treatment with a patient. To avoid influencing participants' answers, we did not explicitly define individualisation. However, the interviewer later used prompts to encourage participants to discuss additional situations that could be considered to be amenable to individualisation (as per the topic guide). We anticipated that this would provide a detailed account of doctors' understanding of individualisation and the methods that they would use to achieve it within their understanding, as well as the methods that they used to individualise treatments as others may see it.

All participants provided written consent prior to taking part. Ethical approval was obtained from the Peninsula College of Medicine and Dentistry ethics committee.

### Data analysis

Interviews were audio recorded, anonymised and transcribed verbatim. We analysed the data using a thematic approach.<sup>23</sup> Two researchers independently read transcripts and noted down core codes that were identified. We met regularly to discuss codes and to develop a preliminary list of themes. As analysis progressed, we drew on the existing literature to refine this list and to group related themes together.<sup>24</sup>

We then developed a chart for each theme,<sup>24</sup> and copied any interview data that were related to each theme into the relevant chart. To enhance rigour,<sup>25</sup> two authors carried out this process independently. We resolved discrepancies via discussion.<sup>26</sup> We then used the charts to identify narratives within cases and diversity between cases.<sup>27</sup> Divergent cases were discussed and included in the thematic analysis.<sup>27</sup>

A summary of the findings was sent to all doctors along with an invitation to offer any comments.

## RESULTS

One author (SD) collected data between February and July 2012 from 16 GPs (6 rural and 10 urban practices) and 2 geriatricians from clinical practices in Devon. Data from the two clinical academics who took part in the pilot interviews were also included in the analysis. Seven doctors were women. Interviews were held at a location to suit the doctors (mainly at their place of work). The mean length of the interviews was 48 min (range 20–60 min). The data are presented under three main headings. First, we

identified two subthemes relating to doctors' understanding: evidence-based medicine and doctor-led prescribing, and individualising treatments around patient factors. Second, we identified two subthemes under the heading methods used to individualise treatments: methods used to make treatment decisions during the consultation, and methods to support patients after the consultation. Third, we identified dissonance between the rhetoric of individualisation and doctors' clinical reports of how they had dealt with some of their patients. In the following quotations, all names are pseudonyms.

### Understanding of individualised treatment

Doctors' understanding of individualisation ranged from evidence-based, medically focused doctor-led care, through to prescribing drug treatments tailored to the patients' wishes and beliefs. There was variation in the ease with which doctors spoke about individualisation. There were two doctors who could not articulate their understanding of individualisation, but who were still able to respond to prompts about how they would deal with situations that could be considered to be amenable to individualisation. Doctors frequently discussed individualisation in relation to two of the processes involved in the prescription and use of pharmacological treatment—selecting appropriate drugs to treat the individual patient, and the interaction with the patient in the medical consultation. Doctors paid less attention to patients' use of treatments postconsultation.

### Evidence-based medicine and doctor-led prescribing

At one end of the spectrum, individualisation was considered to be synonymous with evidence-based practice. Focusing on the doctor's task of selecting appropriate drugs to treat the individual patient, one doctor described how the process of matching patients with guidelines resulted in all treatments being individualised:

I suppose when I did discuss it recently with my colleague the point he made was all treatments are individualised and it's, perhaps you're looking at it from a different perspective, because we look at it from the individual that comes in and then try and match a guideline to them or guidance, so everything you do is individualised anyway. (Sophie, urban GP)

Importantly, when asked about their understanding of individualised treatment, no doctor referred to doctor-led prescribing specifically. However, it was implicit in their examples that in certain situations (such as if the doctor thought that the patient really could benefit from treatment), they considered a doctor-led style of prescribing to be individualised.

Well again, it's a case of looking at what is right for that particular patient at that particular time, and, I, I, because the patient was at high risk of stroke, then I did really try to push the treatment. (Jim, urban GP)

You know, because I think if, somebody might be very against a drug, but if I've seen it work really effectively in the past, I suppose I feel, I wouldn't force them to take it, if I force them to take it they won't take it anyway, but I suppose I feel if I can find a way round it that would encourage them just to give it a go, sometimes it's worth it. (Catherine, urban GP)

### Individualising treatments around patient factors

Doctors described individualised treatments as drug treatments that had been selected after consideration of patient factors (such as patient circumstances). Frequently, this meant adapting or going against guideline recommendations. Some doctors described individualised treatments as treatments that had been tailored to suit the patients' medical needs (eg, when treating patients with comorbidities):

Well it's always checking on individual preferences, but the biggest factor is co-morbidity, that's what makes me step outside the box as it were. (Tom, urban GP)

For other doctors, individualised treatments were treatments that had been adapted to suit patients' social circumstances

So, I've got someone who lives out the back of beyond, no transport, they might be less keen to have something that requires frequent monitoring ... We have a lot of shift workers round here so that can be quite an issue, um, shifts will often change from week to week ... complete nightmare controlling anything like that because they're sometimes asleep when they're supposed to be taking their pills. So they can be tricky. (Rachel, rural GP)

For some, individualised treatment required the patient to be involved in treatment decisions; with treatments being individualised around the patient's willingness to take a drug. These doctors considered patients' preferences to be more important than their own views and preferences. In particular, the two geriatricians in our sample were conscious that the patients' preferences are perhaps more important than achieving optimal control of their conditions:

Because most of the patients that we see have reached what statistically would be regarded as their life expectancy. So there is, we can't in anyway force our opinions on them. We have to go with the fact that they have made this value judgement as to what is the right thing for them ... And we just have to accept that they've made the right judgement for them. Which is not necessarily the right judgement for us. But as long as we feel that they are fully informed, or as informed as they can be, then we just accept what decisions they make on their behalf. (Mark, geriatrician)

Maybe that's easier in geriatrics where we know lots of what we do comes at a price, we know 10% of hospital admissions that we do are from drug side effects. So maybe we feel a bit more relaxed about it. (William, geriatrician)

For others, individualising treatment in accordance with the patients' willingness to take a drug simply meant accepting that the patient had declined treatment

And I'm quite happy to agree to differ, if they want to decline treatment, I'd write down declined treatment. I think it's important to come back to, not just see it as something that they've done wrong, but it's fine for them to do that, and I don't have a problem with them not taking that treatment. (Marcus, urban GP)

### Methods used to individualise treatments

Doctors described the methods they used to achieve individualisation. Again, doctors focused on the methods used to select appropriate drugs to treat individuals and interactions with the patients during the consultation. Few doctors spoke of methods to support the patient in using treatments after the consultation when drug taking actually occurs.

### Methods used to make treatment decisions during the consultation

Doctors described using a range of resources to select appropriate drugs to treat individual patients. These included evidence, clinical experience, colleague support and the patients' views or circumstances. Use of resources was dependent on the doctors' understanding of individualisation, but influenced by the patient and the situation. All doctors described using evidence to make treatment decisions. However, views about the role of the evidence varied between doctors

EBM is only one of many strategies, and, it's like you've got a tool box you know? And the tool that you use every time is you yourself. And you need, and you can learn to do that better. I'm very interested in that. And then occasionally you'll pull EBM out as well. But not, you know, not very often. Honestly, I would think I probably, as a first tool that you pull out, it would probably be once or twice a day. (Andrew, urban GP)

It was widely acknowledged that 'text book' scenarios were rare. One GP reported that most of his patients had complex social needs, and both the geriatricians in our sample reported that nearly all their patients had multiple conditions. These complex patients could not be treated using only evidence-based guidelines.<sup>9</sup> Treatment decisions for patients with complex needs were made based on their own or their colleagues' clinical experience

Often we send messages to each other. I share a list with another GP colleague, and we share difficult patients, and discuss how are we going to get Mr so and so to do X, Y and Z? (Sophie, urban GP)

To treat patients with complex needs, doctors often made treatment decisions for the patient, using strategies like polypharmacy to deal with side effects of

treatments, and accepting that not all conditions can be optimally managed

Interviewer (I): Ok, so when you've got a patient who comes in and has a range of medical conditions, and you know if you treat all of them it's going to lead to interactions? Respondent (R): The regimens for each of these conditions, A, B and C are reasonably well sorted because they're common conditions, common drugs, usually sorted. So he has arthritis, diabetes and epilepsy. That's a nice juicy mix, and fairly common. By and large you will get away with this polypharmacy. (Mathew, urban GP)

To involve the patient in the treatment decisions, doctors reported using techniques such as providing the patient with the information needed to make an informed choice, suggesting treatment and outcome options, and giving the patient time to think about their priorities

And then we can provide them with alternatives like 'well this will cure that but this could affect your kidneys. This might not have as big an effect on that but it would preserve the kidneys and could leave you a little bit short of breath. Of those two which would you rather have? The risk of feeling completely healthy, but potentially shorter life, or having some symptoms but a longer life?' And working with those decisions. (Mark, geriatrician)

While one doctor aimed to prescribe treatments in accordance with the patient's interests, he accepted that this could not be an everyday occurrence

I'll be honest; I don't do it all the time, so I don't want to pretend I'm perfect at this. I think the clearest one that I've got is a bloke in his late 50s with Parkinson's who'd retired, but the thing that kept him going was that he could go to the swimming pool every morning ... So we opted for a patch for him ... You slap it on once a day and it gives you 24 hour coverage so he could put it on the night before and he'd be switched on in the morning, he wasn't waiting for a tablet to kick in and make him work. And it worked beautifully for him ... but after a few months he got skin reactions and we had to stop it and find something else, but that really felt like we had really picked a drug around him and his interests and what was keeping him going. (William, geriatrician)

Interviewees also reported situations in which a more direct approach was considered to be necessary. This included situations in which the patient's goals were deemed unrealistic, or when the doctor thought that the patient really should be using some form of treatment. Doctors then reported using techniques in order to convince or persuade the patient to follow recommendations. In some cases, attempts were made to encourage the patient to see the medical imperative for treatment

They don't want to take any tablets; you say 'well you probably will die in 5 years time at the most without these

things. If you take these things it might prolong your life, by this that or the other.' (Joe, urban GP)

For some doctors, the assumption appeared to be that the patient was in some way misinformed. Therefore, attempts were made to educate the patient

Most of the time you can explain to people why they ought to be taking something and hopefully they might come round to thinking that that's the best thing to do. Sometimes people might have different ideas and won't take anything or certainly won't take what you suggest but I think most of the time you can explain to people why or what the evidence is or what the consensus is. And most of the time if people understand it they'll take it. (Lynn, rural GP)

If initial treatment decisions were not acceptable to the patient, attempts were made to change or simplify the regime or to prescribe alternative treatments

You just say 'well let's try something else.' The nice thing is, there's always, or very often there's always alternatives that are either as good or, uh, you know, in the same league. (Sophie, urban GP)

#### Methods used to support patients after the consultation

In most interviews, individualisation was described in the context of making treatment decisions during the consultation. Few doctors spoke of methods to support patients to test and refine their treatment in the context of their own life. To support patients after the consultation, doctors reported using techniques such as reminders and instructions. This ranged from standardised monitored dosage systems or text messaging services, to writings and drawings on prescription labels. Crucially, the aim of such strategies was to help the patient use their medications as prescribed

I: Do you use any strategies to support the patients outside the consultation? R: Um, not enough. It's something I often think about that I should be doing more. So I do drawings and write things on bits of scrap paper, about if there is a complicated medication, or a list of things to do, or if people are older, forgetful (Marcus, urban GP)

A minority of doctors described using strategies to help patients modify treatment regimes to suit their lives. One geriatrician described how he used techniques such as separating drugs into those that have to be taken (to treat the condition) and those that do not have to be taken (to treat the symptoms)

I tend to rearrange them so into treatments and symptoms ... And if you group them like that, then if they get half way through the tablets, providing they've taken their treatment tablets, the symptom control, if they don't take it they're going to feel lousy, but the balance between taking a tablet or not taking a tablet, it's not

going to make any difference to their longer term health. (Mark, geriatrician)

Another geriatrician described a process of trial and error, in which drugs were used for a period of time and then modified by the doctor if necessary

I think as well, because we tell patients for a lot of these drugs let's try this and see if it works, if it's not working we'll stop it. It allows patients to come back and say it's not working rather than come back and feel that they're on it. (William, geriatrician)

Only one GP actively encouraged patients to modify their treatments to achieve individualised doses. This doctor described a reluctance on the part of some patients to do so

So actually, for an awful lot of drugs, I do this all the time. I say balance up your, you know yourself when you're getting the side effects. Titrate the medication until you're just below the level at which you get the side effects and fiddle around with it ... And then sometimes the patients say, 'ohh, but it says once a day and bla bla bla. (Joe, urban GP)

The hospital consultants in our sample reported using diaries and graph paper to either assess the effectiveness of treatments and treatment doses, or to encourage patients to respond to worsening symptoms

So, it's just a piece of paper really with days of the week and what their Parkinson's is like. But Parkinson's you swing from being on, when you can move around, to being off, when you're frozen and stuck. So if we're trying to give a drug to reduce the amount of time people are off, we'll often give them a diary so you can graphically see whether it's worked or not. (William, geriatrician)

Well they all get the graph paper. And it's "If it goes above this line, phone us and we'll see you in clinic straight away. Or, if it goes above this line increase your tablets. Or do this that or the other." And it's what we tell them to do when it reaches that point that varies by patients. (Mark, geriatrician)

The question of whether or not patients needed to be encouraged to monitor symptoms was contested. Some doctors were of the opinion that patients should not be encouraged to monitor their symptoms or side effects of their treatments

I quite often don't tell people about the side effects of tablets, which is against our, against all the modern day teachings that you must tell people of the risks. Well I often don't. Because there's a lot of evidence for this, there's a type of patient that if you tell them there is a possibility that they'll get headaches, they'll get headaches. (John, clinical academic)

Others felt that patients should be told what potential side effects they should look out for

Explain to them the possibility that one thing might affect another and what to look out for. So if there are going to be interactions, what they, what they need to be um, coming back with um, if certain symptoms present. You know if you get this, come back, because that's a side effect we need to know about. (Becky, urban GP)

However, even with clear instructions, mistakes could happen

We've had that with a patient who used, you know, he had the line [indicating safe blood pressure readings], he went way below the line, kept on going without bothering to phone anyone, and six weeks later he was in hospital with renal failure. And we gave him pretty clear instructions. He decided to ignore them ... It worked; he just didn't follow the instructions. But you can't do anything about that. Patients are entitled to do what they want. (Mark, geriatrician)

There was wide acceptance that, in the end, the final treatment decision was down to the patient. In certain situations, no treatment could be the best option

You know, you say, 'this is what's going on, you tried them we've looked at physiotherapy, we've looked at other alternatives, are your symptoms manageable? Are the treatments worse than the condition, and if they are, then maybe you need to learn to live with the condition. (Rachel, rural GP)

### Dissonance between rhetoric and experience

While all but two doctors were able to describe their understanding of individualisation when asked, these answers did not always match the examples they provided when talking about patients they had treated. For example, one doctor described individualisation as being

All sorts of things. Everything from the persons' views or thoughts about—if you're talking about medicines—about drugs and what they want. But similarly that fits with their views of whether they like medicine, don't like medicine, what they want in terms of getting better. (Catherine, urban GP).

However, when this participant was asked how she would respond to a patient who did not want to use the treatment that she had prescribed, she responded

There are even times when I'll say 'well actually I think this would be worth trying' even if they're not very keen. And I'll say to them 'how about you give it a go for two weeks and see how you feel.' You know, because I think somebody might be very against a drug, but if I've seen it work really effectively in the past, I suppose I feel, I wouldn't force them to take it, if I force them to take it they won't take it anyway, but I suppose I feel if I can find a way round it that would encourage them just to give it a go, sometimes it's worth it. (Catherine, urban GP)

This dissonance between rhetoric and experience was evident throughout the interviews. While doctors appeared to think that individualising treatments around patients' preferences and world views into treatment decisions was of value, in practice this was not always considered to be the best strategy.

## DISCUSSION

### Main findings and comparisons with other studies

This paper presents a range of doctors' understandings of the meaning of individualised drug treatment. Individualised treatment was discussed in relation to both treatment that was tailored to patients' priorities, and treatment that was doctor-led and followed evidence-based guidelines. Furthermore, there was a lack of congruence between doctors' stated definition of individualisation and the examples they provided from their practice. Doctors frequently spoke of methods to support interactions during consultations, the first of the processes referred to in the introduction of this paper. However, despite the findings of Pound *et al.*,<sup>21</sup> doctors in our study infrequently mentioned patients' use of their medications outside the consultations.

The main strength of this study is the use of qualitative methods to generate a rich insight into doctors' understanding of individualisation, methods used to achieve individualisation and the relationships between the two. We used strategies to enhance the trustworthiness of our study, including multiple coders and respondent validation. We triangulated our findings with the existing literature, and asked participants to comment on our findings.<sup>28</sup> Participants who took part in pilot interviews stated that they could recognise our findings, and agreed that they were plausible.

Our study was based on a sample of hospital consultants and GPs from the South West of England. That doctors were recruited only from this area could limit the transferability of the results, although participants had both trained and practised beyond this region. We acknowledge that our use of opportunity sampling may have resulted in a self-selected sample. However, as we are interested in best practice, we were not overly concerned with recruiting only those with an interest in the study.

Previous qualitative research has explored methods to support doctors during consultations.<sup>16–18</sup> In those studies, the focus was on strategies used by doctors to make individualised prescribing decisions within the medical consultation—where guidelines may not be appropriate. Similar to the doctors in our study, those studied by Fried *et al* had varied views about how treatment decisions for patients with complex conditions should be made. Use of evidence and strategies to balance the harms versus the benefits of guideline-directed care varied between physicians.

Doctors in both these studies had differences of opinion regarding the role of the patient in treatment

decisions. For some, treatment decisions should be doctor-led, with the doctor persuading the patient to use the treatment that they thought would be most appropriate. For others, patient involvement was an essential component of treatment decisions. A number of doctors reported that integrating patients' preferences into medical decisions was problematic if the treatment was essential. This was still a major concern for many doctors, despite research suggesting that patients' and doctors' priorities may be very different.<sup>29</sup> This paternalism versus patient choice is an ongoing debate, and one that is widely discussed in the literature.<sup>15 30 31</sup> In the current paper, the dissonance between the rhetoric of individualisation and doctors' clinical behaviour appeared to stem from this issue, with the data revealing tensions between the doctors' desire to treat the patients' social needs, while simultaneously treating their medical needs.

Pound *et al.*<sup>21</sup> found evidence to suggest that patients actively modify their medications in order to suit their lives. However, there is a paucity of literature surrounding the methods used to support patients during this third process. The few doctors in our study who spoke of methods to support patients outside the consultation described methods such as sorting drugs by their role (to treat or to cure), trial and error, and monitoring. These strategies are largely informal: for example, drawings, or writing about the use of the medication on bits of paper. The limitations of such informal methods were acknowledged.

The lack of consideration of what goes on outside the consultation is particularly interesting and worrying. Pound *et al* have shown that many patients will monitor their symptoms and side-effects and make treatment adaptations as necessary—with or without the support of the doctor. Self-management of chronic disease requires patients to take multiple treatments and monitor their health over many years. Therefore, strategies to support patients to modify treatments, and providing safe parameters for them to do so, may actually limit patient driven amendments to treatments without professional support. However, our study highlights the variation in opinions about whether or not patients should be encouraged to adapt treatments after consultations. One doctor felt that patients did not want to adapt their treatments. Another doctor thought that encouraging patients to be aware of the side effects could actually contribute to side-effects. Others were concerned that encouraging patients to monitor symptoms could lead to unnecessary stress. Only a small number of doctors thought that patients should be encouraged to individualise treatments after the consultation. In particular, the two geriatricians seemed to have a better understanding of and a larger set of methods to support patients to individualise treatments after consultations than the GPs, thus suggesting that the findings might be related to medical subspecialty. Further research is needed to explore differences in individualisation between

different clinical specialities, as this may highlight situations in clinical areas in which individualisation is commonly achieved, and situations in which individualisation is not so appropriate.

The findings reported here have important implications for research and practice. The focus of this study was on the strategies and methods that doctors used to reach decisions within the consultation. Few doctors discussed methods to support patients to use drug treatments outside the consultation. Methods that were suggested were informal and unstructured, and doctors acknowledged that such methods may neither be supportive enough or measurable. Furthermore, doctors perceived a number of barriers to individualising treatments after the consultation, such as whether or not strategies could contribute to side effects and cause unnecessary stress. Before policy recommendations concerning both individualisation and self-management can be achieved, policymakers need to be clear about what they are advocating, and thus the concept of individualisation needs to be refined. Methods used to achieve individualisation may then be developed and piloted in different situations. Such methods should be appropriately structured to be supportive and their effects measurable. Given that some patients are already individualising treatments on their own, supporting patients to do so safely could improve patients' self-management practices.

**Acknowledgements** We would like to thank the participants who took part in the research.

**Contributors** All four authors contributed substantially to the conception and design of the research. The analysis and interpretation of the data were undertaken by SD, with considerable input from JF, NB and PD. The article was drafted by SD, and revised by the remaining three authors. All four authors approved the final version of the article before publication. SD is the guarantor.

**Funding** This article presents independent research funded by the National Institute for Health Research (NIHR) Collaboration for Leadership in Applied Health Research and Care (CLAHRC) for the South West Peninsula. The views expressed in this publication are those of the author(s) and not necessarily those of the NHS, the NIHR or the Department of Health in England.

**Competing interests** SD's time is funded by NIHR.

**Provenance and peer review** Not commissioned; externally peer reviewed.

**Data sharing statement** The full dataset is available from the corresponding author at s.denford@exeter.ac.uk. Consent was not obtained, but the presented data are anonymised and risk of identification is low.

## REFERENCES

1. Department of Health. *Equity and excellence: liberating the NHS*. Stationary Office, 2010.
2. Department of Health. *Supporting people with long term conditions*. Stationary Office, 2005.
3. Cribb A, Owens J. Whatever suits you: unpicking personalization for the NHS. *J Eval Clin Pract* 2010;16:310–14.
4. Haynes RB, Sackett DL, Gray JM, *et al*. Transferring evidence from research into practice: 1. The role of clinical care research evidence in clinical decisions. *ACP J Club* 1996;125:A14–16.
5. Hayward RS, Wilson MC, Tunis SR, *et al*. Users' guides to the medical literature. VIII. How to use clinical practice guidelines. A. Are the recommendations valid? The evidence-based medicine working group. *JAMA* 1995;274:570–4.
6. Evans I, Thornton H, Chalmers I, *et al*. *Testing treatments better research for better healthcare*. London: Pinter & Martin, 2010.
7. Kravitz RL, Duan N, Braslow J. Evidence-based medicine, heterogeneity of treatment effects, and the trouble with averages. *Mil Quart* 2004;82:661–87.
8. Mant D. Can randomised trials inform clinical decisions about individual patients? *Lancet* 1999;353:743–6.
9. Boyd CM, Darer J, Boulton C, *et al*. Clinical practice guidelines and quality of care for older patients with multiple comorbid diseases. *JAMA* 2010;304:716–24.
10. Lewin S, Skea Z, Entwistle VA, *et al*. Interventions for providers to promote a patient-centred approach in clinical consultations (Cochrane review). *Cochrane Libr* 2012;2001(4):CD003267.
11. Marshall M, Bibby J. Supporting patients to make the best decisions. *BMJ* 2011;342:d2117.
12. Agledahl KM, Gulbrandsen P, Forde R, *et al*. Courteous but not curious: how doctors' politeness masks their existential neglect. A qualitative study of video-recorded patient consultations. *J Med Ethics* 2011;37:107–13.
13. Richards N, Coulter A. *Is the NHS becoming more patient-centred? Trends from the National Surveys of NHS patients in England 2002–07*. London: Picker Institute, 2007.
14. Cribb A, Entwistle VA. Shared decision making: trade-offs between narrower and broader conceptions. *Health Expect* 2011;14:210–19.
15. Sandman L, Munthe C. Shared decision making, paternalism and patient choice. *Health Care Anal* 2010;18:60–84.
16. Anderson N, Fuller R, Dudley N. 'Rules of thumb' or reflective practice? Understanding senior physicians' decision-making about anti-thrombotic usage in atrial fibrillation. *QJM* 2007;100:263–9.
17. Fried T, Tinetti ME, Iannone L. Primary care clinicians' experiences with treatment decision making for older persons with multiple conditions. *Arch Intern Med* 2011;171:75–80.
18. Luijckx HD, Loeffen MJ, Lagro-Janssen AL, *et al*. GPs' considerations in multimorbidity management: a qualitative study. *Br J Gen Pract* 2012;62:e503–10.
19. Schattner A, Fletcher RH. Research evidence and the individual patient. *QJM* 2003;96:1–5.
20. Griffiths F, Green E, Tsouroufli M. The nature of medical evidence and its inherent uncertainty for the clinical consultation: qualitative study. *BMJ* 2005;330:511.
21. Pound P, Britten N, Morgan M, *et al*. Resisting medicines: a synthesis of qualitative studies of medicine taking. *Soc Sci Med* 2005;61:133–55.
22. Britten N. Qualitative interviews in medical research. *BMJ* 1995;311:251–3.
23. Braun V, Clarke V. Using thematic analysis in psychology. *Qual Res Psychol* 2006;3:77–101.
24. Miles MB, Huberman AM. *Qualitative data analysis: an expanded sourcebook*. 2nd edn. Thousand Oaks: Sage Publications, 1994.
25. Shenton AK. Strategies for ensuring trustworthiness in qualitative research projects. *Educ Inf* 2004;2:–63.
26. Mays N, Pope C. Rigour and qualitative research. *BMJ* 1995;311:109–12.
27. Ritchie J, Spencer L, O'Connor W. Carrying out qualitative analysis. In: Ritchie J, Lewis J, eds. *Qualitative research practice*. 1st edn. London: SAGE, 2003:219–63.
28. Lincoln YS, Guba EG. But is it rigorous? Trustworthiness and authenticity in naturalistic evaluation. *New Dir Program Eval* 2004;1986:73–84.
29. Britten N. Commentary: does a prescribed treatment match a patient's priorities? *BMJ* 2003;327:840.
30. Coulter A. Paternalism or partnership? *BMJ* 1999;319:719–20.
31. Upton J, Fletcher M, Madoc-Sutton H, *et al*. Shared decision making or paternalism in nursing consultations? A qualitative study of primary care asthma nurses' views on sharing decisions with patients regarding inhaler device selection. *Health Expect* 2011;14.