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# BMJ Open

## Using online patient feedback to determine quality and patient satisfaction in primary care: a mixed methods case study.

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3 **Using online patient feedback to determine quality and patient satisfaction in primary care: a**  
4 **mixed methods case study.**  
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3 **Using online patient feedback to determine quality and patient satisfaction in primary care: a**  
4 **mixed methods case study.**  
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6 **ABSTRACT**  
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8 **Objective:** This mixed methods study sought to describe the content of 1396 public reviews found  
9 on NHS Choices for all general practices (n=70) in one Clinical Commissioning Group in England, and  
10 to ascertain its relationship to the General Practice Patient Survey (GPPS) and the Friends and Family  
11 Test (FFT).  
12

13 **Setting:** Online reviews and ratings on NHS Choices for General Practices in one Clinical  
14 Commissioning Group in England.  
15

16 **Results:** Significant moderate correlations were found between the online patient feedback and the  
17 GPPS and the FFT. Five themes were developed through the qualitative analysis: 1) Expressions of  
18 satisfaction or dissatisfaction; 2) making comparisons and defending practices; 3) the physical  
19 environment; 4) service organisation and delivery; 5) care and communication. They demonstrate  
20 the wide range of topics commented on by patients, including their medical care, relationships with  
21 various members of staff, practice facilities, amenities and services in primary care settings.  
22

23 **Conclusions:** This mixed methods study demonstrates that online feedback found on NHS Choices is  
24 significantly correlated with established measures of quality in primary care. This suggests it has a  
25 potential use in understanding patient experience and satisfaction, and a potential use in quality  
26 improvement and patient safety. The qualitative analysis shows that this form of feedback pertains  
27 to issues of quality and patient safety relevant to primary care.  
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33 **Article summary**  
34

35 *Strengths and limitations*  
36

- 37 • To our knowledge, this is the first study to correlate online patient feedback with established  
38 measures of patient experience and satisfaction in primary care in England.
- 39 • The qualitative component of the mixed methods design provided additional insight into the  
40 contents of online patient feedback that could be useful for quality improvement and patient  
41 safety.
- 42 • Online patient feedback is moderated and information about those who provide feedback is  
43 unavailable, meaning that this is an analysis of what is available online.  
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## INTRODUCTION

Patient experience is a core component of quality health care. Recent high-profile inquiries into care failures in the English NHS have uncovered a failure to take account of patients' concerns.[1–3] These inquiries have called for all organisations to solicit the experiences of patients and carers, recognising their experiences as essential to monitoring quality and safety in the NHS. In the NHS patient experience and satisfaction is recorded in primary care using the General Practice Patient Survey (GPPS) and the Friends and Family Test (FFT). However, a study in English general practices found that positive survey responses can mask negative experiences that patients described in subsequent interviews.[4] This suggests that surveys might not capture a full and holistic picture of patients' experiences and that providing a platform on which patients can describe their experiences in an unstructured way may counteract this problem. In this context, online patient feedback websites may offer a solution.

Online patient feedback is becoming increasingly prevalent. A recent UK survey showed that 42% of respondents had read and 8% had posted online feedback about healthcare experiences.[5] Early evidence indicated some correlation with standardised measures of patient satisfaction in secondary care with online feedback about secondary care.[6] It may provide an efficient and effective means of collecting information about patient experience and satisfaction, not necessarily replacing current standardised measures, but offering a way to complement their content. The emergence of online feedback is also seen as potentially useful in monitoring and inspection[7] – in 2013, the Care Quality Commission invited websites that collect patient feedback to share data for use in their monitoring activities. At the same time, General Practitioners (GPs) express a range of concerns about online patient feedback, particularly in relation to its usability, validity and transparency.[8] Equally, patients in general have mixed views about the appropriateness of posting reviews online. A qualitative interview study showed that it can be a convenient way of publicly sharing feedback, but that patients are concerned about accessibility, privacy and security, and about how seriously doctors would take it.[9]

In addition to the concerns of GPs and patients, there are other factors in general practice that may complicate the reception and use of online feedback. General practice provides a different context for online reviews and ratings than secondary care. The smaller nature of each organisation means that there is greater potential for staff and patients to be identifiable in reviews. Unlike most secondary care organisations, general practices do not tend to have dedicated patient experience managers or communications staff, and the resource (finance and time) implications of reading and responding to feedback may often be prohibitive.

In this context we undertook a mixed methods study to examine the relationship between the content of online patient feedback on the NHS's patient feedback website, NHS Choices, and standardised measures of patient experience and satisfaction (the GPPS and FFT). Our aim was to determine the value of online reviews and ratings (both qualitative and quantitative feedback) in terms of their correlation with other quality measures. We also aimed to identify what general practices can learn from the content of online reviews about patient experience and satisfaction.

## METHODS

### Study design

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2  
3 A mixed methods study of online patient qualitative reviews and quantitative ratings for each  
4 general practice in one Clinical Commissioning Group (CCG) in England. A mixed methods approach  
5 was used in order to encapsulate all kinds of patient feedback data.  
6

### 7 **Setting**

8  
9 This study was conducted on all general practices in one CCG in England, which, at the time of data  
10 collection, included 70 general practices, serving approximately 700,000 registered patients. Data for  
11 each practice were extracted from NHS Choices, the General Practice Patient Survey and the Friends  
12 and Family Test. NHS Choices is the UK's biggest health website, containing a range of information  
13 about health conditions and health services. In addition to learning about the staff and facilities at  
14 any general practice, patients can post reviews and ratings of their experiences of using a general  
15 practice to the NHS Choices site.  
16  
17

### 18 **Data sources**

19  
20 All patient reviews and ratings for each general practice in the CCG posted from October 2009 to July  
21 2016 were extracted from NHS Choices in October 2017. The reviews were in text format and the  
22 ratings were numeric, on a scale of 1–5 stars. The GPPS and the FFT data were downloaded from gp-  
23 patient.co.uk and england.nhs.uk/fft (the NHS England website) respectively for July 2016. The total  
24 'overall experience' and the 'likelihood of recommending the practice to others' scores were  
25 extracted from the GPPS, and the 'likelihood to recommend the practice' score from the FFT were  
26 extracted for each practice in the CCG.  
27  
28

### 29 **Methods of analysis**

#### 30 **Qualitative reviews**

31  
32 We adopted an interpretivist approach in undertaking the analysis of the qualitative reviews. As  
33 such, we analysed the data using an inductive thematic approach[10] to explore and search for  
34 meaning in the subjective experiences reported in the reviews. The qualitative analysis was  
35 conducted before the quantitative analysis in an attempt to ensure that it was not influenced by the  
36 quantitative findings. The reviews were analysed by the first and second author (anon for review)  
37 and NVivo 11 was used to aid the data management process. An inductively developed coding  
38 frame[11] was developed in discussion with the research team and was updated when new codes  
39 were added. The emergent findings were discussed in regular meetings. The resulting themes were  
40 developed inductively and in discussion with the wider research team. To ensure quality, we drew  
41 on Yardley's[12] principles of good qualitative research. To demonstrate *sensitivity to context* we  
42 drew on a comprehensive scoping review of relevant literature to inform this research and obtained  
43 ethical approval from (anon for peer review) Research Ethics Committee (reference R53128/RE001)  
44 prior to commencing the research. Skilled and experienced researchers (anon for review) undertook  
45 thorough data collection and in-depth analyses to demonstrate *commitment and rigour*.  
46  
47  
48  
49

#### 50 **Quantitative ratings**

51  
52 Quantitative analyses were conducted using SPSS version 22. Descriptive analyses were conducted  
53 to demonstrate the trend in frequency of reviews, and the proportion of positive, negative and  
54 mixed comments for the 70 practices. We report the median and interquartile range for the number  
55 of reviews. We used Spearman's Rho to determine correlations between the valence of the reviews,  
56 the GPPS and the FFT and report the Spearman correlation,  $R^2$ , and P value ( $P < 0.05$  considered to be  
57 significant). The content of the qualitative reviews were assigned a numeric value to categorise them  
58 as either positive (1) or negative (0). Mixed responses, i.e. containing both positive and negative  
59  
60

elements were also categorised. Using Spearman's Rho, the proportion of positive comments were individually compared with the GPPS 'overall experience' and 'likelihood to recommend' scores and the FFT 'likelihood to recommend the practice' score.

### Patient and public involvement

Patients and members of the public were not involved in planning or conducting this study. However, they were consulted about a wider programme of work on online feedback and agreed that exploring the content of patient feedback for primary care was an important project.

## RESULTS

### Quantitative findings

At the time of data collection (October 2016), there were 1402 reviews in total for the 70 practices. Six were verbatim repetitions and were excluded from further analyses leaving a total number of 1396 included reviews. Every general practice in this CCG had received at least one review on NHS Choices. The median number of reviews was 17 (Inter Quartile Range: 9 to 28). One surgery had received only one review and the highest number of reviews received by any surgery was 142. The earliest was recorded on 13 October 2009. Of the 1396 reviews, 59% (n=823) were positive, 34% (n=474) were negative and the remainder were mixed.

#### Correlation with FFT

Our correlation analyses showed that practices with a larger proportion of positive reviews had a significantly higher FFT score (Spearman correlation=0.595,  $R^2=0.299$ ,  $P=0.000$ ) and those with a larger proportion of negative reviews had a significantly lower FFT score (Spearman correlation=-0.625,  $R^2=0.333$ ,  $P=0.000$ ). See Table 1 and Figure 1.

*Table 1: Correlation between the proportion of positive response and Friends and Family Test score (those who would recommend the practice)*

		Correlations		
		Proportion Positive	Proportion Negative	
Spearman's rho	FFT	Correlation Coefficient	.595**	-.625**
		Sig. (2-tailed)	.000	.000
		N	70	70

\*\* . Correlation is significant at the 0.01 level (2-tailed).

[Figure 1 about here]

#### Correlation with GPPS

General practices with a larger proportion of positive reviews had a significantly higher proportion of positive GPPS comments (Spearman correlation=0.527,  $R^2=0.279$ ,  $P=0.000$ ). General practices with a larger proportion of negative reviews had a significantly lower proportion of positive GPPS comments (Spearman correlation=-0.560,  $R^2=0.315$ ,  $P=0.000$ ). See Table 2 and Figure 2.

Table 2: Correlation between the proportion of positive response and proportion of GPPS respondents with an overall positive experience

		Proportion Positive	Proportion Negative
Overall Experience Positive	Correlation Coefficient	.527**	-.560**
	Sig. (2-tailed)	.000	.000
	N	70	70

[Figure 2 about here]

General practices with a larger proportion of positive reviews had a significantly higher proportion of patients from the GPPS survey recommending the surgery (Spearman correlation=0.595,  $R^2=0.279$ ,  $P=0.000$ ). General practices with a larger proportion of negative reviews had a significantly lower proportion of positive GPPS comments (Spearman correlation=-0.625,  $R^2=0.334$ ,  $P=0.000$ ). See Table 3 and Figure 3.

Table 3: Correlation between the proportion of positive responses and proportion of GPPS respondents who recommended the surgery

		Proportion Positive	Proportion Negative
Recommend P	Correlation Coefficient	.595**	-.625**
	Sig. (2-tailed)	.000	.000
	N	70	70

[Figure 3 about here]

80% (n=1117) of the 1396 reviews were accompanied by a star rating, of which 44% (n=600) had received a five-star rating, the highest possible score. 28% (n=307) had received the lowest rating of one. The spread of star rating scores is shown in Figure 4, clearly demonstrating a U-shaped distribution.

[Figure 4 about here]

#### Ratings versus reviews

Of the 307 one-star ratings, 96% (n=294) were accompanied by a negative review. Of the 600 five-star reviews, 96% (n=578) were accompanied by a positive review. Of the 55 three-star ratings, 58% (n=32) were negative, 35% (n=19) positive and the remainder were mixed (Table 4).



Table 4: Star ratings versus reviews

			Negative	Positive	Mixed	
Star Rating Likert	1	Count	294	3	10	307
		% within Star Rating Likert	95.8%	1.0%	3.3%	100.0%
	2	Count	60	3	4	67
		% within Star Rating Likert	89.6%	4.5%	6.0%	100.0%
	3	Count	32	4	19	55
		% within Star Rating Likert	58.2%	7.3%	34.5%	100.0%
	4	Count	10	60	18	88
		% within Star Rating Likert	11.4%	68.2%	20.5%	100.0%
	5	Count	8	578	14	600
		% within Star Rating Likert	1.3%	96.3%	2.3%	100.0%
Total	Count	404	648	65	1117	
	% within Star Rating Likert	36.2%	58.0%	5.8%	100.0%	

### Qualitative findings

In this section, we present the findings of the qualitative analyses of the comments on the general practices. Following the analysis of the comments on NHS Choices, five themes were developed through an iterative process and in discussion with the research team: Expressions of satisfaction or dissatisfaction; making comparisons and defending practices; the physical environment; service organisation and delivery; care and communication. Sample quotations from the reviews are found in Table 5.

The comments were about the full range of practice staff, including GPs, practice nurses, midwives, receptionists and pharmacists. Reviews about GPs, nurses and midwives frequently recounted experiences of good care. Practice managers were not explicitly mentioned in the comments.

#### Expressions of satisfaction or dissatisfaction

Service users used NHS Choices to recount experiences of care at their general practice. The reviews often contained relatively brief stories explaining what had happened that were accompanied by expressions of satisfaction or dissatisfaction. NHS Choices was also used to express gratitude to practice staff. Expressions of gratitude were both about care in general or about specific incidents of care. Comments indicating significant dissatisfaction were often accompanied by expressions of unwillingness to attend the practice or see a particular GP again. (See Table 5)

## Making comparisons and defending practices

Reviewers sometimes prefaced or concluded their positive comments with how they were surprised at the negative reviews and ratings their practice had received, and often included a defence of the practice in the positive report of their care experiences. Comments contained information about how patients perceived the practices had improved or declined over time, and reviewers made comparisons between the practice and others they had previously attended or had heard about. These comparisons were both favourable and unfavourable. The reviews also contained comparisons of doctors within each practice, demonstrating that patients drew on previous experiences in writing their reviews. (See Table 5)

## The physical environment

Comments highlighted issues with the physical environment in general practices. They focused on the building, particularly its accessibility, aesthetics and cleanliness. They also commented on facilities, mainly on parking and on waiting rooms, both in terms of highlighting what they liked and what needed to be improved.

Issues of privacy were commonly raised in relation to waiting areas, but also focused on other areas in the practice.

## Service organisation and delivery

The comments frequently referred to the services offered by the practice and the way in which services were organised and delivered. They discussed a range of service delivery issues, including appointments, automated check-in machines, booking systems and online services, and telephone access, triage and consultations.

Continuity of care was often discussed alongside the issue of appropriate provision of staff. Many comments referred to not being able to see their named GP or to see the same GP twice about the same issue. This was not a concern for all, especially when medical notes were reviewed.

Time taken to get an appointment was frequently reported in the reviews. This related to the time spent trying to get through on the phone and talking to the receptionists in addition to the delay in availability of appointments with patients citing waiting times of three weeks and longer. Opening hours was also another contentious access issue. Practices were criticised for closing for lunch and others were praised for offering appointments in the evenings and on Saturdays.

## Care and communication

Accounts about good care from all healthcare staff often included adjectives such as 'personal', 'compassionate', and 'respectful'. Descriptions of good care often centred on communication skills with reviewers commenting on times when healthcare staff listened, and took the time needed to explain the diagnosis, treatment, side effects, and what to expect next. They also included accounts of shared decision-making and involvement in decisions about care.

Poor communication was also reported frequently in the negative or mixed reviews. This tended to be about not being listened to, feeling rushed and treated with suspicion, particularly with regard to medication requests or repeat prescriptions. There were multiple negative evaluations the doctors' attitudes, with reviewers using words like 'rude', 'unfortunate manner', 'unfriendly', 'dismissive', 'hostile', 'condescending' and 'disinterested'.

The reviews contained accounts of when patients' dignity and privacy were compromised by the action or inaction of staff and reviewers also commented on their perceptions of the competence of the staff they encountered. They recounted experiences that led them to feel like they could not trust their healthcare practitioner's advice. Comments also addressed misdiagnoses, feeling dismissed, queries around staff competence and suspicions around mistakes. These included global statements, like 'the GP misdiagnosed me on several occasions' that contained no specific information to assess the veracity or gravity of the concern. However, comments also contained specific detail about medical aspects of their condition.

Reviewers also commented on their interactions with receptionists using both positive and negative terms: 'exceptional', 'helpful', 'efficient', 'kind and respectful' and 'rude', 'brusque', 'didn't listen', 'incompetent'. These extremes demonstrate the variation of experiences that are reported online. Criticisms of and praise for receptionists often pertained to their manner and not their efficiency or competence. They were often described as 'customer-facing' or performing a 'customer service' role. This perception conflicted with some aspects of their role, including the questions they asked when patients phoned to speak to the doctor.

Table 5: Sample quotations from the online reviews

#### **Expressions of satisfaction or dissatisfaction**

*Extremely efficient and pleasant staff, always go out of their way to help. I am not always organised with my prescriptions and have on occasion let myself run out. The receptionists have always issued one at short notice and faxed the order direct through to my local pharmacist. I am very grateful to them for this.*

*I witnessed the aggressive manner that reception staff are dealt with. I really wanted to publicly say how much I appreciate all that the surgery does and thank them for everything.*

*Won't go back! No interest, no care, whoosh in, tick the box, whoosh out! No help given to alleviate feeling unwell, even though 8 weeks now! I don't visit doctors as a matter of routine, only if I really feel am not coping to get over a medical problem and that maybe I need help in the form of stronger/antibiotics meds Didn't really listen, cut me off, was defensive, felt like a "thing".*

#### **Making comparisons and defending practices**

*I am surprised at some of the adverse comments about this GP surgery. I have been registered with the practice ... for many years and would be devastated if I had to change surgery; my GP has always been excellent, listens and is proactive in referring me on for other services if required.*

*[...] Getting appointments can be a challenge! I have been a patient of this surgery for 30 years and things are a lot better now than they were 15 years ago!*

*I transferred to this practice from a different surgery [...] because it was almost impossible to get an appointment with my previous GP. This surgery is so much better - the availability of appointments with doctors and nurses is great. ... my experience is that they are much better than other GPs in the area.*

1  
2  
3 *The doctor I am listed with is excellent, I have been less impressed when I have had to see another*  
4 *doctor in the practice, who is much less approachable and seemed rather dismissive.*

5 **The physical environment**

6 *I am very unhappy with the disabled parking at this medical centre. I am a wheelchair user and I*  
7 *can not use the one space they have. Its too small...*

8  
9  
10 *I like the new TV and music in the waiting room, it gives a more relaxed feel and something to pass*  
11 *the time with some interesting information*

12  
13 *...Could also do with some new chairs in the waiting room to match their new extension and to*  
14 *keep patients comfortable while they wait!*

15  
16 *Premises are cramped and overcrowded. Playing Radio 2 very loud in the waiting room "for*  
17 *reasons of confidentiality" is not great if you have a headache or are feeling unwell.*

18 **Service organisation and delivery**

19 *Sometimes it can be difficult to get through on the phone but an extended surgery until 8pm one*  
20 *day a week is very useful for me*

21  
22  
23 *An overcrowded surgery, with too many part-time GPs. This means that it is difficult to see the*  
24 *same GP each time and there is therefore no real continuity of care.*

25  
26 *I have never seen the same doctor more than once; however, I have no complaints about all the*  
27 *doctors whom I have seen.*

28  
29  
30 *Very long wait each time. The worst was today where I had to wait for 1.5hrs to see the GP despite*  
31 *arriving punctual for my appointment.*

32  
33 *The appointment side of things is also ridiculous. The earliest appointment I've managed to get*  
34 *recently has been 3 weeks in advance! Which when you need to see someone fairly urgently isn't*  
35 *acceptable.*

36 **Care and communication**

37 *Always on one's level with superb listening skills and adequately explaining things. Never any*  
38 *sense of rush. I always feel at ease and appropriate nice humour shared is good. So very polite and*  
39 *they say they are sorry to have kept me waiting.*

40  
41  
42 *One of the practice nurses is also excellent, capable of carrying out the most intimate of*  
43 *procedures without causing embarrassment.*

44  
45  
46 *There are three doctors in the surgery. I have found all of them well-informed and caring, taking*  
47 *time to explain procedures, results, and options.*

48  
49 *I put three stars for involvement in decisions because sometimes the doctors themselves have no*  
50 *choice or they have very less alternatives for treatment or for referral options, so they are limited*  
51 *to help with a range of options. This limitation is mostly due to the system itself within which they*  
52 *need to work in. But all staff try and help as much as possible.*

53  
54  
55 *I was most recently seen by a Dr who was cold, bored, and inattentive, requested that I repeat*  
56 *myself multiple times, looked suspicious of every response I gave, and finally, very reluctantly,*  
57 *re-issued my prescription... I only came in to get the script re-issued and was made to feel like I*  
58 *was somehow wasting the doctor's time, even though the surgery would not continue my repeat*  
59 *prescription without a doctor's appointment!*  
60

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3  
4 *They told me to undress, did not offer me a gown to cover myself and made me lay on the table*  
5 *next to an open window with partially open curtains.*  
6

7  
8 *Practice nurses also need to realise that consultations are confidential... Closing the door during*  
9 *consultation would be polite and the patient shouldn't have to ask!*  
10

11 *For COPD they initially prescribed half the normal dose of inhaler, presumably in order to cut costs.*  
12 *They didn't give me any guidance about exacerbations. More recently at my annual review my*  
13 *SpO2 (oxygen saturation) was recorded as 98% rather than the actual value of around 94%. The*  
14 *98% would have put me outside the recommended range for review for further medication.*  
15

16  
17 *The year before, another GP at the same practice was flippant with my presentation and*  
18 *completely misdiagnosed an invasive inflammatory mass that was invading my skull base. They*  
19 *told me to continually self medicate with NSAIDs even though I am an asthmatic.*  
20

21 *...there is one receptionist, who is very helpful just like the others, but very rarely smiles when*  
22 *dealing with patients.*  
23

24  
25 *The receptionists always pretend that they are the doctors and ask lots of questions that they*  
26 *don't have a clue at all, but eventually, I was always told that a doctor needs to call me back again*  
27 *to discuss the problem. Which is waste of time for everyone, because in every case of mine, the*  
28 *doctor will say that I need to see them anyway.*  
29

## 30 31 32 33 **DISCUSSION**

34 This study found a relationship between online patient feedback and other quality measures,  
35 specifically the GPPS and the FFT, in English general practices. We found a moderate positive  
36 correlation between the online feedback on NHS Choices and both of these quality measures. Online  
37 patient feedback was found to express the extremes of experience, the very positive and the very  
38 negative, as demonstrated by the U-shaped distribution of the frequencies of different ratings  
39 (figure 4). The majority of the ratings were positive with few middle-ground experiences being  
40 reported. This also suggests that it is not appropriate to take an arithmetic average (mean) score  
41 from these data, given the skewed distribution towards each end of the spectrum.  
42  
43

44  
45 Through our qualitative analysis, we developed five themes that indicate how patients who post  
46 online feedback review their experiences. We demonstrated that they use NHS Choices to show  
47 support and gratitude to their practices, and to report their wide-ranging concerns. Reviewers  
48 commented on almost the full range of practice staff; only practice managers were omitted from the  
49 reviews, perhaps because they are less likely to interact with patients than other staff. The vast  
50 majority of comments were positive and pertained to a range of factors about the care experience,  
51 including the environment, service delivery, and interactions with staff. However, this analysis  
52 demonstrates that patients also comment on issues relevant to quality; e.g. autonomy, choice,  
53 clarity of communication, confidentiality, dignity, prompt attention, and quality of basic amenities  
54 (the World Health Organisation's responsiveness healthcare quality framework).  
55  
56

57  
58 To our knowledge, no other study has shown a relationship between quality measures and online  
59 feedback in primary care. Other studies have found correlations with online feedback in secondary  
60 care in England[6] with the inpatient survey and the Hospital Consumer Assessment of Healthcare

1  
2  
3 Providers and Systems (HCAHPS) in the United States.[13] Our findings are consistent with previous  
4 research that has shown that the majority of online feedback is positive.[14–16] This is contrary to  
5 the opinions of GPs, who have been found to perceive online feedback as predominantly negative. 8  
6 Also consistent with previous research is the U-shaped distribution of the weighting of online  
7 feedback, which was reported in a study of a German patient feedback website on which  
8 approximately 50 percent of the feedback was aimed at general practitioners.[17]  
9  
10

11 Berwick[18] argued that the NHS should be a '*system devoted to continual learning and*  
12 *improvement of patient care*' (p.5). It also called for more transparent reporting on quality and  
13 safety data, and emphasised the importance of listening to patients and carers. This is particularly  
14 important as what constitutes quality or good care may not be consistent across all populations.[19]  
15 Online feedback websites may provide a partial solution to this, offering patients the opportunity to  
16 see how others have reviewed their care. Equally, rating and review sites could act as databases of  
17 experiential insight; thus potentially useful to healthcare providers aiming to incorporate patients'  
18 views in service organisation and delivery.  
19  
20

21 In addition to quality improvement, online feedback has the potential to improve patient safety.[20]  
22 A small minority of patients commented on the medical aspects of their experiences (e.g. oxygen  
23 saturation levels in COPD); most only mentioned their condition or disease to explain why they  
24 needed to see the doctor. We suggest patients may have the capacity to comment on this level –  
25 and thus on issues pertinent to patient safety – but it is possible that other factors influence the  
26 contents of online reviews. This might include implicit and explicit messages patients receive  
27 through how websites like NHS Choices are formatted, and through interactions with the health  
28 service.  
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31 Online feedback should not be the only means of collecting patient insight; a pluralised approach  
32 remains warranted. Only a small number of people post reports of their care experiences online. A  
33 recent survey in the UK found 8% of respondents had posted feedback.[5] However, the same survey  
34 showed that 42% reported reading online feedback, demonstrating the potential power it wields. As  
35 we have shown, the majority of feedback is positive and records extremes of experience. To make  
36 feedback websites more effective, we need a better way to encourage people to post middle-ground  
37 experiences online.  
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39

#### 40 **Limitations**

41 The data were extracted in 2017 and the correlations with the GPPS and FFT were conducted using  
42 the most recently available data, which was from 2016. In addition, and as with previous studies of  
43 online patient feedback, we were limited to the information that is available online. Therefore, this  
44 study provides little insight into the characteristics of the patients who provide feedback. Equally,  
45 NHS Choices moderates online posts by patients and does not publish comments that contravene  
46 their rules, including those that are not in English or those containing expletives or staff names.  
47 Without access to these unpublished posts, it is unclear if all posts conform to our findings.  
48 However, this is the nature of this type of insight and, as such, this study provides a comprehensive  
49 analysis of what is available. Adopting a mixed methods approach was valuable as it allowed us to  
50 correlate the online feedback with established measures of patient satisfaction. Additional insight as  
51 to what impact this type of feedback could have was found in the course of the qualitative analysis.  
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#### 56 **Future research**

57 As this study has shown, patients comment on a wide range of aspects of their care experience and  
58 this insight could be used to make improvements in general practice. However, more research is  
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needed to ascertain whether the findings of this in-depth case study of one CCG could be extrapolated across the NHS to answer the question of whether local insight can be used to make national improvements. National experiences can have local resonance,[21] but it is unclear if the reverse is also true. Online platforms may provide a cost-effective and attractive means for soliciting feedback from patients, but the volume of online reviews per practice is quite low in comparison with the numbers of patients enrolled. Future research should aim to explore the views of service-users who are reluctant to comment online. Equally, we need to explore the views of all staff who are subject to online review, including practice nurses and receptionists, who have been neglected from previous qualitative research in this area.

## CONCLUSION

Our study shows that patient feedback on general practices found on NHS Choices is correlated with established measures of patient satisfaction and could be useful in helping patients choose a general practice, in areas where choice is possible. It also shows that it has potential uses in determining issues of quality improvement and patient safety.

## Figure Legends

Figure 1: Correlation between the proportion of positive responses and the Friends and Family Test score (those who would recommend the general practice)

Figure 2: Correlation between the proportion of positive responses and proportion of GPPS respondents reporting an overall positive experience

Figure 3: Correlation between the proportion of positive responses and proportion of GPPS respondents who recommend the general practice

Figure 4: Proportion of star ratings received across all general practices

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## COMPETING INTERESTS

The authors declare no competing interests.

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## DATA SHARING

No additional data available.

## AUTHOR CONTRIBUTORSHIP

All authors made substantial contributions to the study design and analysis of the data, were involved in drafting or revising the paper, have approved the final version and agree to be held accountable for all aspects of the work.

Anne-Marie Boylan designed the study, conducted the literature search, analysed and interpreted the data, drafted the initial manuscript and prepared it for submission.

Amadea Turk contributed to the design of the study, sourced the quantitative and qualitative data and analysed and interpreted the qualitative data, and contributed to writing the manuscript.

Michelle van Velthoven contributed to the design of the study, prepared the figures, analysed and interpreted the quantitative data and contributed to writing the manuscript.

John Powell contributed to the design of the study, was involved interpreting the data, and contributed to writing the manuscript.



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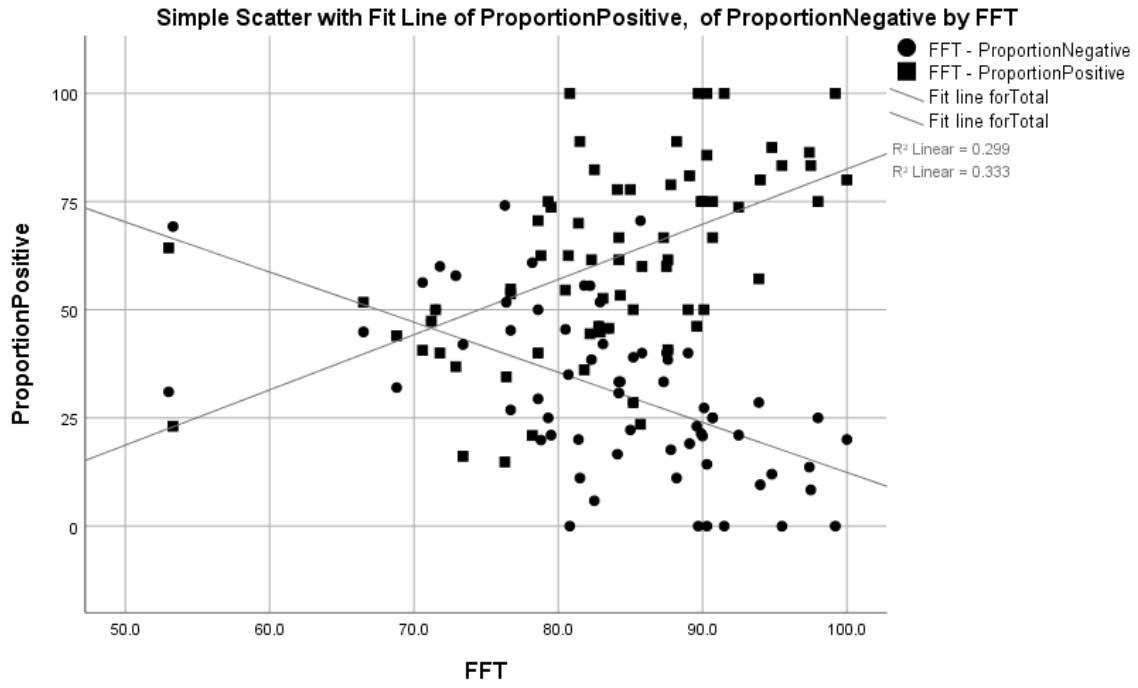


Figure 1 Correlation between the proportion of positive responses and the Friends and Family Test score (those who would recommend the general practice)

review only

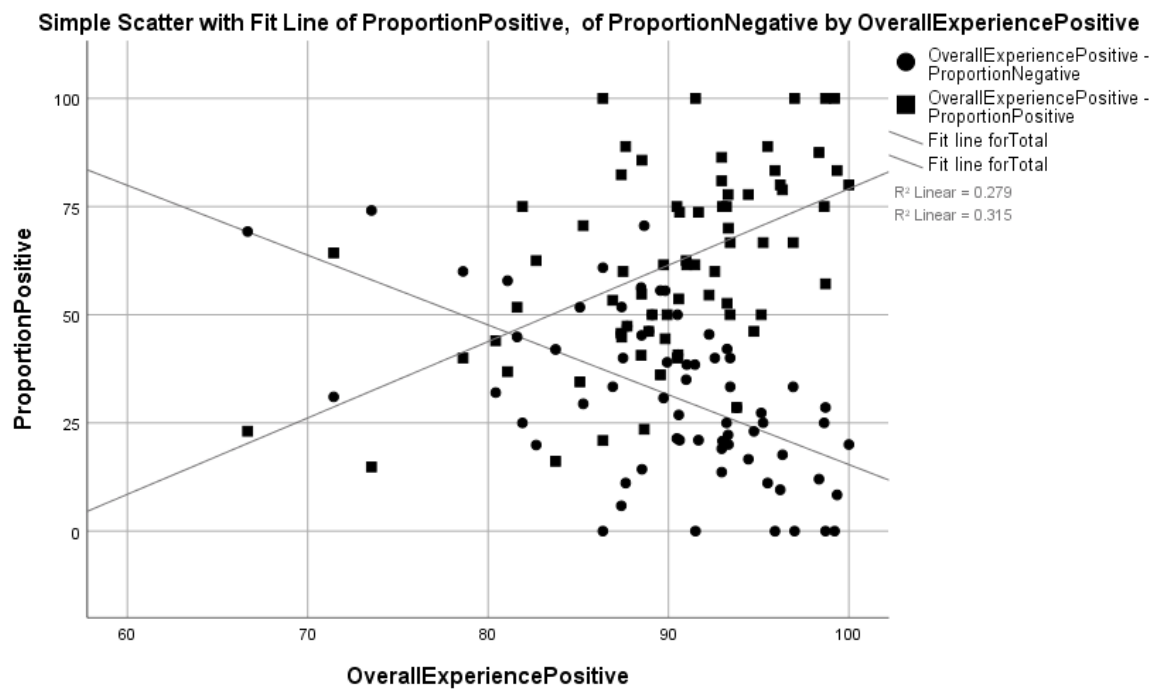


Figure 2 Correlation between the proportion of positive responses and proportion of GPPS respondents reporting an overall positive experience

review only

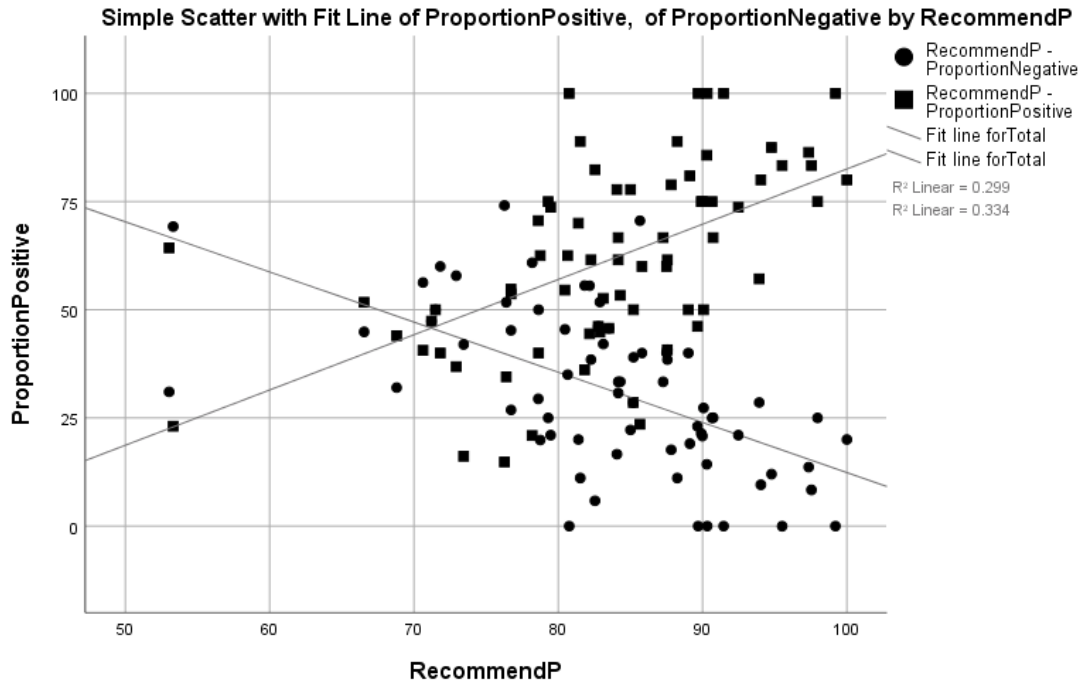


Figure 3 Correlation between the proportion of positive responses and proportion of GPPS respondents who recommend the general practice

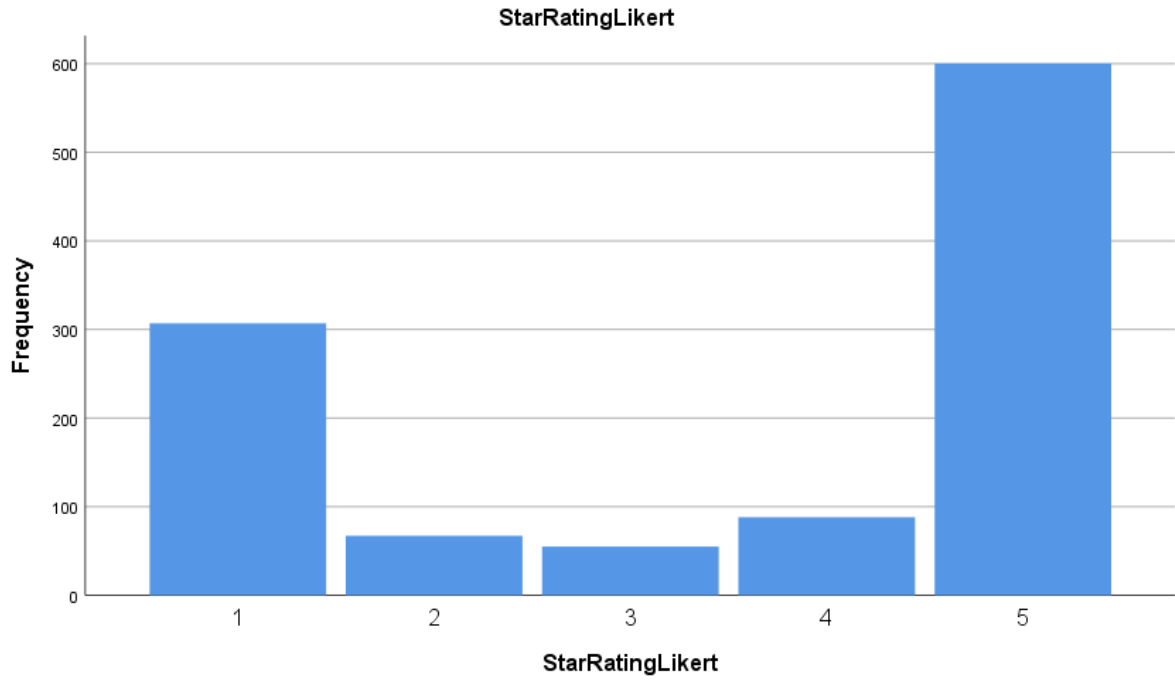


Figure 4 Proportion of star ratings received across all general practices

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## Online patient feedback as a measure of quality in primary care: a multi-method study using correlation and qualitative analysis.

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3 **Online patient feedback as a measure of quality in primary care: a multi-method study using**  
4 **correlation and qualitative analysis.**  
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## Online patient feedback as a measure of quality in primary care: a multi-method study using correlation and qualitative analysis.

### ABSTRACT

**Objectives:** To ascertain the relationship between online patient feedback and the General Practice Patient Survey (GPPS) and the Friends and Family Test (FFT). To consider the potential benefit it may add by describing the content of public reviews found on NHS Choices for all general practices in one Clinical Commissioning Group in England.

**Design:** Multi-method study using correlation and thematic analysis.

**Setting:** 1396 public online reviews and ratings on NHS Choices for all General Practices (n=70) in Oxfordshire Clinical Commissioning Group in England.

**Results:** Significant moderate correlations were found between the online patient feedback and the GPPS and the FFT. Three themes were developed through the qualitative analysis: 1) online feedback largely provides positive reinforcement for practice staff; 2) online feedback as a platform for suggesting service organisation and delivery improvements; 3) online feedback as a source of insight into patients' expectations of care. They demonstrate the wide range of topics commented on by patients, including their medical care, relationships with various members of staff, practice facilities, amenities and services in primary care settings.

**Conclusions:** This multi-method study demonstrates that online feedback found on NHS Choices is significantly correlated with established measures of quality in primary care. This suggests it has a potential use in understanding patient experience and satisfaction, and a potential use in quality improvement and patient safety. The qualitative analysis shows that this form of feedback contains helpful information about patients' experiences of general practice that provide insight into issues of quality and patient safety relevant to primary care. Health providers should offer patients multiple ways of offering feedback, including online, and should have systems in place to respond to and act on this feedback.

### Article summary

#### *Strengths and limitations*

- A multimethod approach combining both quantitative and qualitative approaches allows us to investigate the value of OPF as both a quantifiable measure of quality (for example through correlation with other scores), as well as to explore the content and draw conclusions about how people use reviews.
- The reviews lack demographic data so it is difficult to draw conclusions about the characteristics of people who post.
- The General Practice Patient Survey and Friends and Family Test have their own weaknesses and is it therefore debatable whether they represent a gold standard with which to correlate.

## INTRODUCTION

Patient experience is a core component of quality health care. Recent high-profile inquiries into care failures in the English NHS have uncovered a failure to take account of patients' concerns.(1-3) These inquiries have called for all organisations to solicit the experiences of patients and carers, recognising their experiences as essential to monitoring quality and safety in the NHS. In the NHS patient experience and satisfaction is recorded in primary care using the General Practice Patient Survey (GPPS) and the Friends and Family Test (FFT). However, the FFT has been criticised for its invitation and response biases, and because it has resulted in a significant amount of staff time spent collecting, collating and reporting on the data, rather than devoting this time to quality improvement.(4) The usefulness of the GPPS is also debatable and has been criticised as items pertaining to the patient-doctor relationship are reported at practice level, potentially masking individual GP performance. A study in English general practices found that positive survey responses can mask negative experiences that patients described in subsequent interviews(5) and equally prevents GPs from reflecting on their practice.(6) This suggests that surveys might not capture a full and holistic picture of patients' experiences and that providing a platform on which patients can describe their experiences in an unstructured way may counteract this problem. In fact, there is no gold standard measure of patient satisfaction and experience in primary care and in this context, online patient feedback websites may offer a solution.

Online patient feedback is becoming increasingly prevalent(7). A recent UK survey showed that 42% of respondents had read and 8% had posted online feedback about healthcare experiences on various types of patient feedback websites.(8) Early evidence indicated some correlation with standardised measures of patient satisfaction in secondary care with online feedback about secondary care.(9) It may provide an efficient and effective means of collecting information about patient experience and satisfaction, not necessarily replacing current standardised measures, but offering a way to complement their content. The emergence of online feedback is also seen as potentially useful in monitoring and inspection(10) – in 2013, the Care Quality Commission invited websites that collect patient feedback to share data for use in their monitoring activities. At the same time, General Practitioners (GPs) express a range of concerns about online patient feedback, particularly in relation to its usability, validity and transparency.(11) Equally, patients in general have mixed views about the appropriateness of posting reviews online. A qualitative interview study showed that it can be a convenient way of publicly sharing feedback, but that patients are concerned about accessibility, privacy and security, and about how seriously doctors would take it.(12)

In addition to the concerns of GPs and patients, there are other factors in general practice that may complicate the reception and use of online feedback. General practice provides a different context for online reviews and ratings than secondary care. The smaller nature of each organisation means that there is greater potential for staff and patients to be identifiable in reviews. Unlike most secondary care organisations, general practices do not tend to have dedicated patient experience managers or communications staff, and the resource (finance and time) implications of reading and responding to feedback may often be prohibitive.

In this context, we undertook a multi-method study to examine the relationship between the content of online patient feedback on the NHS's patient feedback website, NHS Choices, and standardised measures of patient experience and satisfaction (the GPPS and FFT), acknowledging that these measures are not without their flaws. Our aim was to determine if there was a correlation between online reviews and ratings (both qualitative and quantitative feedback) and other quality measures. We also aimed to identify what the content of online reviews reveals about patient

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3 experience and satisfaction with general practice, and if it has the potential to provide additional  
4 benefit to understanding experiences of primary care.  
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## 8 **METHODS**

### 9 **Study design**

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12 This is a multi-method study of online patient qualitative reviews and quantitative ratings for each  
13 general practice in Oxfordshire Clinical Commissioning Group (CCG) in England. A multimethod  
14 approach, combining both quantitative and qualitative approaches, allows us to investigate the  
15 value of online patient feedback data as both a quantifiable measure of quality, including through  
16 correlation with other frequently used measures, as well as to explore content and draw conclusions  
17 about the usability of reviews. Other measures include the FFT, which asks patients “How likely are  
18 you to recommend our service to friends and family if they needed similar care or treatment?”  
19  
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### 21 **Setting**

22  
23 This study was conducted on all general practices in Oxfordshire CCG in England, which, at the time  
24 of data collection, included 70 general practices, serving approximately 700,000 registered patients.  
25 Oxfordshire CCG covers a mixed rural/urban population which is relatively affluent although there  
26 are pockets of deprivation with significantly poorer outcomes in terms of health, education, income  
27 and employment. In 2018, 87.4% patients reported having a positive experience of their GP practice  
28 compared with a national (England) average of 83.8%; and the total percentage of Quality Outcomes  
29 Framework (QOF) points obtained across Oxfordshire CCG was 97.6% compared with an England  
30 average of 96.3%.  
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33 Data for each practice were extracted from NHS Choices, the General Practice Patient Survey and  
34 the Friends and Family Test. More information on the general practices can be found at  
35 oxfordshireccg.nhs.uk. NHS Choices ([www.nhs.uk](http://www.nhs.uk)) is the UK’s biggest health website, containing a  
36 range of information about health conditions and health services. In addition to learning about the  
37 staff and facilities at any general practice, patients can post reviews and ratings of their experiences  
38 of using a general practice to the NHS Choices site. They enter their feedback (reviews and ratings)  
39 on a page dedicated to their general practice. There are some instructions provided on how to do  
40 this. All reviews are anonymised by NHS Choices before they are publicly available using specific  
41 moderation rules, which include removing other names, including staff names, and swear words. No  
42 identifiable information is published. Online patient feedback lacks accompanying demographic  
43 data, so conclusions about the characteristics of those who post are not possible. General practice  
44 staff can access these comments and can respond online if they choose.  
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### 48 **Data sources**

49  
50 All patient reviews and ratings for each general practice in the Oxfordshire CCG posted from October  
51 2009 to July 2016 were extracted from NHS Choices in October 2017. The reviews were in text  
52 format and the ratings were numeric, on a scale of 1–5 stars. The GPPS and the FFT data were  
53 downloaded from [gp-patient.co.uk](http://gp-patient.co.uk) and [england.nhs.uk/fft](http://england.nhs.uk/fft) (the NHS England website) respectively  
54 for July 2016. The total proportions of respondents with a good experience (very and fairly good) for  
55 the ‘Overall experience of GP surgery’ and ‘Recommending GP surgery to someone who has just  
56 moved to the local area’ scores were extracted from the GPPS. The total proportion of respondents  
57 recommending the practice (extremely likely and likely) for the ‘likelihood to recommend the  
58 practice to friends and family’ score from the FFT were extracted for each practice in the CCG.  
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## Methods of analysis

### Qualitative reviews

We adopted an inductive thematic approach(13) to analyse the qualitative reviews. This allowed us to explore and search for patterns in the subjective experiences reported in the reviews. The reviews were analysed by the first and second author (AMB & AT) and NVivo 11 was used to aid the data management process. An coding frame was developed inductively in discussion with the research team and was updated when new codes were added. The emergent findings were discussed in regular meetings. The resulting themes were developed inductively and in discussion with the wider research team. The qualitative analysis was conducted before the quantitative analysis in an attempt to ensure that it was not influenced by the quantitative findings.

To ensure quality, we drew on Yardley's(14) principles of good qualitative research. To demonstrate *sensitivity to context* we drew on a comprehensive scoping review of relevant literature to inform this research and obtained ethical approval from the University of Oxford (reference R53128/RE001) prior to commencing the research. Skilled and experienced researchers undertook thorough data collection and in-depth analyses to demonstrate *commitment and rigour*. We kept a clear audit trail and used appropriate methods, demonstrating *transparency and coherence* and we consider the *impact and importance* of this work in the discussion below.

### Quantitative ratings

Quantitative analyses were conducted using SPSS version 22. Each of the 70 practices was given a unique identifying number. Reviews were checked by two researchers and duplicates removed. Descriptive analyses were conducted to demonstrate the trend in frequency of reviews, and the proportion of positive, negative and mixed comments. We report the median and interquartile range for the number of reviews. We used Spearman's Rho to determine correlations between positive and negative reviews, the GPPS and the FFT and report the Spearman correlation,  $R^2$ , and P value ( $P < 0.05$  considered to be significant). The content of the qualitative reviews were assigned a numeric value to categorise them as either entirely positive (1) or entirely negative (0). These comments contained either only positive or only negative items. Mixed responses, i.e. containing both positive and negative items were also categorised and assigned a numeric value (2). The proportions of positive, negative, and mixed responses reviews were calculated by dividing the number of those reviews by the total number of reviews. For the GPPS, the total proportions of respondents with a good experience were calculated by combining the proportions of respondents who had a 'very good' or 'fairly good' experience, and respondents recommending the practice were calculated by combining the proportions of respondents who said 'definitely' or 'probably' recommend the practice to someone who had just moved to the local area. For the FFT, the total proportions were calculated by combining the proportions of respondents who were 'extremely likely' or 'likely' to recommend the practice to friends and family. Using Spearman's Rho, the proportion of positive and negative comments were individually compared with the GPPS 'good experience' and 'likely to recommend the practice' scores and the FFT 'likely to recommend the practice' score. The NHS choices reviews were compared to their accompanied star ratings to research whether the valence of reviews matched their star ratings (e.g. whether negative reviews had low star ratings, mixed reviews had medium star ratings, and positive reviews had high star ratings).

### Ethics

This study was approved by the Medical Sciences Inter-Divisional Research Ethics Committee, University of Oxford (Ref: R53128/RE001).

### Patient and public involvement

Patients and members of the public were not involved in planning or conducting this study. However, they were consulted about a wider programme of work on online feedback and agreed that exploring the content of patient feedback for primary care was an important project.

## RESULTS

### Quantitative findings

At the time of data collection (October 2016), there were 1402 reviews in total for the 70 practices. Six were verbatim repetitions (i.e. posts by the same users at the same time) indicating they were errors and so were excluded from further analyses, leaving a total number of 1396 included reviews. Every general practice in this CCG had received at least one review on NHS Choices. The median number of reviews was 17 (Inter Quartile Range: 9 to 28). One surgery had received only one review and the highest number of reviews received by any surgery was 142. The earliest was recorded on 13 October 2009. Of the 1396 reviews, 59% (n=823) were positive, 34% (n=474) were negative and the remainder 7% were mixed (n=99).

#### Correlation with FFT

Our correlation analyses showed that practices with a larger proportion of positive reviews had a significantly higher FFT score (Spearman correlation=0.595,  $R^2=0.299$ ,  $P=0.000$ ) and those with a larger proportion of negative reviews had a significantly lower FFT score (Spearman correlation=-0.625,  $R^2=0.333$ ,  $P=0.000$ ). See Table 1 and Figure 1.

*Table 1: Correlation (Spearman) between the proportion of positive responses and Friends and Family Test score (those who would probably or definitely recommend the practice)*

	<b>Proportion Positive versus Friends and Family Test score</b>	<b>Proportion Negative versus Friends and Family Test score</b>
Correlation Coefficient	.595*	-.625*
Significance (2-tailed)	.000	.000
Total number	70	70

\* Correlation is significant at the 0.01 level (2-tailed).

#### Correlation with GPPS

General practices with a larger proportion of positive reviews had a significantly higher proportion of positive GPPS comments (Spearman correlation=0.527,  $R^2=0.279$ ,  $P=0.000$ ). General practices with a larger proportion of negative reviews had a significantly lower proportion of positive GPPS comments (Spearman correlation=-0.560,  $R^2=0.315$ ,  $P=0.000$ ). See Table 2 and Figure 2.

*Table 2: Correlation between the proportion of positive response and proportion of General Practice Patient Survey (GPPS) respondents with an overall positive experience (very good or fairly good)*

	<b>Proportion Positive versus GPPS Positive Overall Experience</b>	<b>Proportion Negative versus GPPS Positive Overall Experience</b>
Correlation Coefficient	.527*	-.560*
Significance	.000	.000
Total number	70	70

\* Correlation is significant at the 0.01 level (2-tailed).

General practices with a larger proportion of positive reviews had a significantly higher proportion of patients from the GPPS survey recommending the surgery (Spearman correlation=0.595,  $R^2=0.279$ ,  $P=0.000$ ). General practices with a larger proportion of negative reviews had a significantly lower proportion of positive GPPS comments (Spearman correlation=-0.625,  $R^2=0.334$ ,  $P=0.000$ ). See Table 3 and Figure 3.

*Table 3: Correlation between the proportion of positive responses and proportion of General Practice Patient Survey (GPPS) respondents who recommended the surgery*

	<b>Proportion Positive versus GPPS Recommending the Practice</b>	<b>Proportion Negative versus GPPS Recommending the Practice</b>
Correlation Coefficient	.595*	-.625*
Significance	.000	.000
Total number	70	70

\* Correlation is significant at the 0.01 level (2-tailed).

80% (n=1117) of the 1396 reviews were accompanied by a star rating, of which 44% (n=600) had received a five-star rating, the highest possible score. 28% (n=307) had received the lowest rating of one. The spread of star rating scores is shown in Figure 4, clearly demonstrating a U-shaped distribution.

#### Ratings versus reviews

Of the 307 one-star ratings, 96% (n=294) were accompanied by a negative review. Of the 600 five-star reviews, 96% (n=578) were accompanied by a positive review. Of the 55 three-star ratings, 58% (n=32) were negative, 35% (n=19) positive and the remainder were mixed (Table 4).

*Table 4: Star ratings versus reviews*

<b>Star rating</b>		<b>Negative review</b>	<b>Positive review</b>	<b>Mixed review</b>	<b>Total reviews</b>
1	Number	294	3	10	307
	% within Star Rating	95.8%	1.0%	3.3%	100.0%
2	Number	60	3	4	67
	% within Star Rating	89.6%	4.5%	6.0%	100.0%
3	Number	32	4	19	55
	% within Star Rating	58.2%	7.3%	34.5%	100.0%
4	Number	10	60	18	88
	% within Star Rating	11.4%	68.2%	20.5%	100.0%
5	Number	8	578	14	600

	% within Star Rating	1.3%	96.3%	2.3%	100.0%
Total	Number	404	648	65	1117
	% within Star Rating	36.2%	58.0%	5.8%	100.0%

## Qualitative findings

In this section, we present the findings of the qualitative analyses of the comments on the general practices. Three themes were developed through an iterative process and in discussion with the research team: 1) online feedback largely provides positive reinforcement for practice staff; 2) online feedback as a platform for suggesting service organisation and delivery improvements; 3) online feedback as a source of insight into patients' expectations of care.. Sample quotations from the reviews illustrating the themes are found in Table 5.

The comments were about the full range of practice staff, including GPs, practice nurses, midwives, receptionists and pharmacists. Reviews about GPs, nurses and midwives frequently, but not exclusively, recounted positive experiences care. Reviews about receptionists often included negative content. Practice managers were not explicitly mentioned in the comments. Patients often used reviews to express satisfaction or dissatisfaction with their interactions with staff. They also used them as an opportunity to express gratitude for the care they received.

### Online feedback largely provides positive reinforcement for practice staff

Reviews were largely positive and reviewers sometimes prefaced or concluded their positive comments with how they were surprised at the negative reviews and ratings their practice had received. In response to this, they often included a defence of the practice in the positive report of their care experiences. This demonstrates the positive esteem in which patients who comment online hold their general practices, and that they wanted staff to know they supported them and felt positively about their care experiences.

Reviewers made largely favourable comparisons between their current practice and others they had previously attended or had heard about. Patients' comparisons with other practices and with doctors within practices were sometimes unfavourable, but for the most part were positive. The reviews also contained comparisons of doctors within each practice, demonstrating that patients drew on previous experiences in writing their reviews and not necessarily on one single interaction. These findings suggest that those who provide online patient feedback draw on their personal histories and relationships with the practices and practice staff when reviewing their experiences. (See Table 5)

### Online feedback as a platform for suggesting service organisation and delivery improvements

The comments frequently referred to the services offered by the practice, how the patients experience them and the way in which services were organised and delivered. They discussed a range of service delivery issues. These included access and appointments, which, perhaps unsurprisingly, were largely a source of frustration for patients, who frequently acknowledged that GPs did their best to work within the strict time constraints they were under. Time taken to get an appointment was frequently reported in the reviews. This related to the time spent trying to get through on the phone and talking to the receptionists in addition to the delay in availability of appointments with patients citing waiting times of three weeks and longer. Opening hours was also another contentious access issue. Practices were criticised for closing for lunch and others were



1  
2  
3 praised for offering appointments in the evenings and on Saturdays. Continuity of care was often  
4 discussed alongside the issue of appropriate provision of staff. Many comments referred to not  
5 being able to see their named GP or to see the same GP twice about the same issue. This was not a  
6 concern for all, as comments stated GPs took the time to review their medical notes.  
7

8  
9 Other services that were commented on, included automated check-in machines, booking systems  
10 and online services, which again received mixed feedback. How these improved efficiency for  
11 patients or made attending appointments more complex was explored in the reviews. Telephone  
12 access and triage were again mixed with patients particularly commenting on the role of  
13 receptionists as gatekeepers. There were concerns about receptionists asking about the reason for  
14 the call without having any medical training. Comments also considered the physical environment  
15 and focused on the building, particularly its accessibility, aesthetics and cleanliness. Facilities, mainly  
16 parking and waiting rooms were subject to review with concerns on the latter pertaining particularly  
17 to issues of privacy. Comments included those posted by patients who had a substantial history with  
18 the practice and contained information about how they perceived the practices had changed over  
19 time, offering insight into how they had improved or declined.  
20  
21

22  
23 Patients' feedback often included suggested improvements, indicating that providing online  
24 feedback was not used simply as a chance to complain or moan about their practice. The range of  
25 items contained in the feedback in this theme demonstrates the broad range of issues that are  
26 important to patients' experiences of attending their general practice and it is clear that they feel  
27 confident in reviewing aspects their experience that relate to service delivery and organisation.  
28

29  
30 Online feedback as a source of insight into patients' expectations of care

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32 Positive accounts of care by all healthcare staff often included adjectives such as '*personal*',  
33 '*compassionate*', and '*respectful*'. Descriptions of positive care often centred on communication  
34 skills with reviewers commenting on times when healthcare staff listened, and took the time needed  
35 to explain the diagnosis, treatment, side effects, and what to expect next. They also included  
36 accounts of shared decision-making and involvement in decisions about care.  
37

38  
39 Poor communication was also reported frequently in the negative or mixed reviews. This tended to  
40 be about not being listened to, feeling rushed and treated with suspicion, particularly with regard to  
41 medication requests or repeat prescriptions. There were multiple negative evaluations of the  
42 doctors' attitudes, with reviewers using words like '*rude*', '*unfortunate manner*', '*unfriendly*'  
43 '*dismissive*', '*hostile*', '*condescending*' and '*disinterested*'.  
44

45  
46 The reviews contained accounts of times when patients' dignity and privacy were compromised by  
47 the action or inaction of staff, providing insight into how staff could improve the patients'  
48 experiences by prioritising dignity and privacy. Reviewers also commented on their perceptions of  
49 the competence of the staff they encountered. They recounted experiences that led them to feel like  
50 they could not trust their healthcare practitioner's advice. Comments also addressed misdiagnoses,  
51 feeling dismissed, queries around staff competence and suspicions around mistakes. These included  
52 global statements, like '*the GP misdiagnosed me on several occasions*' that contained no specific  
53 information to assess the veracity or gravity of the concern. However, comments also contained  
54 specific detail about medical aspects of their condition (see Table 5). Comments containing specific  
55 information indicate the level of engagement some patients have with their care and the  
56 expectations of how GPs should therefore interact with them. It was also notable that patients were  
57 aware of the constraints GPs were working within and recognised that they could not always give  
58 the care they wanted to.  
59  
60

Reviewers also commented on their interactions with receptionists using both positive and negative terms: 'exceptional', 'helpful', 'efficient', 'kind and respectful' and 'rude', 'brusque', 'didn't listen', 'incompetent'. These extremes demonstrate the variation of experiences that are reported online. Criticisms of and praise for receptionists often pertained to their manner and not their efficiency or competence. They were often described as 'customer-facing' or performing a 'customer service' role. This perception conflicted with some aspects of their role, including the questions they asked when patients phoned to ask for an appointment or to speak to the doctor. What is clear is that receptionists are seen as the face of the practice and can influence how patients feel about the care they receive from booking and checking in for appointments to the interaction with their GP or the practice nurse.

These theme provides an understanding of patients' expectations of care and interactions with general practice staff, which often centred around the level of interaction they expected with their GP. A sense of thoroughness and completeness was important in interactions with GPs, whilst good 'customer care' was often cited in relation to interactions with receptionists.

Table 5: Sample quotations from the online reviews

#### **Online feedback largely provides positive reinforcement for practice staff**

*I am surprised at some of the adverse comments about this GP surgery. I have been registered with the practice ... for many years and would be devastated if I had to change surgery; my GP has always been excellent, listens and is proactive in referring me on for other services if required.*

*I transferred to this practice from a different surgery [...] because it was almost impossible to get an appointment with my previous GP. This surgery is so much better - the availability of appointments with doctors and nurses is great. ... my experience is that they are much better than other GPs in the area.*

#### **online feedback as a platform for suggesting service organisation and delivery improvements**

*[...] Getting appointments can be a challenge! I have been a patient of this surgery for 30 years and things are a lot better now than they were 15 years ago!*

*The appointment side of things is also ridiculous. The earliest appointment I've managed to get recently has been 3 weeks in advance! Which when you need to see someone fairly urgently isn't acceptable.*

*Very long wait each time. The worst was today where I had to wait for 1.5hrs to see the GP despite arriving punctual for my appointment.*

*The doctor I am listed with is excellent, I have been less impressed when I have had to see another doctor in the practice, who is much less approachable and seemed rather dismissive.*

*I am very unhappy with the disabled parking at this medical centre. I am a wheelchair user and I can not use the one space they have. Its too small...*

*I like the new TV and music in the waiting room, it gives a more relaxed feel and something to pass the time with some interesting information*

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2  
3 ...Could also do with some new chairs in the waiting room to match their new extension and to  
4 keep patients comfortable while they wait!  
5

6 Premises are cramped and overcrowded. Playing Radio 2 very loud in the waiting room "for  
7 reasons of confidentiality" is not great if you have a headache or are feeling unwell.

8  
9 Sometimes it can be difficult to get through on the phone but an extended surgery until 8pm one  
10 day a week is very useful for me  
11

12 An overcrowded surgery, with too many part-time GPs. This means that it is difficult to see the  
13 same GP each time and there is therefore no real continuity of care.  
14

15 I have never seen the same doctor more than once; however, I have no complaints about all the  
16 doctors whom I have seen.  
17  
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### 21 **Online feedback as a source of insight into patients' expectations of care**

22 Always on one's level with superb listening skills and adequately explaining things. Never any  
23 sense of rush. I always feel at ease and appropriate nice humour shared is good. So very polite and  
24 they say they are sorry to have kept me waiting.  
25

26 One of the practice nurses is also excellent, capable of carrying out the most intimate of  
27 procedures without causing embarrassment.  
28

29  
30 There are three doctors in the surgery. I have found all of them well-informed and caring, taking  
31 time to explain procedures, results, and options.  
32

33 I put three stars for involvement in decisions because sometimes the doctors themselves have no  
34 choice or they have very less alternatives for treatment or for referral options, so they are limited  
35 to help with a range of options. This limitation is mostly due to the system itself within which they  
36 need to work in. But all staff try and help as much as possible.  
37  
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39

40 They told me to undress, did not offer me a gown to cover myself and made me lay on the table  
41 next to an open window with partially open curtains.  
42  
43

44 For COPD they initially prescribed half the normal dose of inhaler, presumably in order to cut costs.  
45 They didn't give me any guidance about exacerbations. More recently at my annual review my  
46 SpO2 (oxygen saturation) was recorded as 98% rather than the actual value of around 94%. The  
47 98% would have put me outside the recommended range for review for further medication.  
48  
49

50  
51 ...there is one receptionist, who is very helpful just like the others, but very rarely smiles when  
52 dealing with patients.  
53

54 The receptionists always pretend that they are the doctors and ask lots of questions that they  
55 don't have a clue at all, but eventually, I was always told that a doctor needs to call me back again  
56 to discuss the problem. Which is waste of time for everyone, because in every case of mine, the  
57 doctor will say that I need to see them anyway.  
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## DISCUSSION

This study found a relationship between online patient feedback and other quality measures, specifically the GPPS and the FFT, in general practices in one English CCG. We found a moderate positive correlation between the online feedback on NHS Choices and both of these quality measures. Online patient feedback was found to express the extremes of experience, the very positive and the very negative, as demonstrated by the U-shaped distribution of the frequencies of different ratings (figure 4). The majority of the ratings were positive with few middle-ground experiences being reported. This also suggests that it is not appropriate to take an arithmetic average (mean) score from these data, given the skewed distribution towards each end of the spectrum.

Through our qualitative analysis, we developed three themes that indicate how patients who post online feedback review their experiences. We demonstrated that they use NHS Choices to provide positive reinforcement for staff, to suggest improvements to service delivery and organisation, and we found that the comments contained a great deal of information about their expectations of care. Reviewers commented on almost the full range of practice staff; only practice managers were omitted from the reviews, perhaps because they are less likely to interact with patients than other staff. The vast majority of comments were positive and pertained to a range of factors about the care experience, including the environment, service delivery, and interactions with staff. However, this analysis demonstrates that patients also comment on issues relevant to quality (e.g. autonomy, choice, clarity of communication, confidentiality, dignity, prompt attention, and quality of basic amenities) and on issues of patient safety (e.g. access, skill and competence of clinicians and clinical errors, although examples of these were few).

To our knowledge, no other study has shown a relationship between quality measures and online feedback in primary care. Other studies have found correlations with online feedback in secondary care in England<sup>(9)</sup> with the inpatient survey and the Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) in the United States.<sup>(15)</sup> We acknowledge that the FFT and GPPS are not without their problems, but there is no gold standard measure of quality or safety in primary care with which to compare online feedback. The position of online feedback, therefore, may be to provide supplementary information on issues of patient experience in primary care and pluralise the range of media through which patients can report their experiences.

Our findings are consistent with previous research that has shown that the majority of online feedback is positive.<sup>(7, 16-18)</sup> This is contrary to the opinions of GPs, who have been found to perceive online feedback as predominantly negative.<sup>(11)</sup> Also consistent with previous research is the U-shaped distribution of the weighting of online feedback, which was reported in a study of a German patient feedback website on which approximately 50 percent of the feedback was aimed at general practitioners.<sup>(19)</sup>

Berwick<sup>(3)</sup> argued that the NHS should be a '*system devoted to continual learning and improvement of patient care*' (p.5). He also called for more transparent reporting on quality and safety data, and emphasised the importance of listening to patients and carers. This is particularly important as what constitutes quality or good care may not be consistent across all populations.<sup>(20)</sup> Online feedback websites may provide a partial solution to this, offering patients the opportunity to see how others have reviewed their care. Equally, rating and review sites could act as databases of experiential

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3 insight; thus potentially useful to healthcare providers aiming to incorporate patients' views in  
4 service organisation and delivery.  
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6 In addition to quality improvement, online feedback has the potential to improve patient safety.(21)  
7 A small minority of patients commented on the medical aspects of their experiences (e.g. oxygen  
8 saturation levels in COPD); most only mentioned their condition or disease to explain why they  
9 needed to see the doctor. We suggest patients may have the capacity to comment online on this  
10 level and thus on issues pertinent to patient safety. This has been demonstrated in previous studies  
11 of patient safety in primary and secondary care.(22, 23)  
12  
13

14 Patients' views on safety in primary care have previously been researched qualitatively and through  
15 patient reported experience and outcome measures. Communication has been shown to be crucial  
16 in improving patient safety, along with timely access, improved speed of diagnosis and continuity of  
17 care.(22, 24) Evaluating task performance (the ability of staff to perform particular tasks, largely  
18 diagnosis and appreciation of the severity of the problem) was heightened by patients with previous  
19 experience of medical harm.(22)  
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22 Online feedback should not be the only means of collecting patient insight; a pluralised approach  
23 remains warranted.(25) Only a small number of people post reports of their care experiences online.  
24 A recent survey in the UK found 8% of respondents had posted feedback,(8) indicating that public  
25 awareness is low and perhaps that staff may not encourage this activity. However, the same survey  
26 showed that 42% reported reading online feedback, demonstrating the potential power it wields. As  
27 we have shown, the majority of feedback is positive and records extremes of experience. GPs tend  
28 to perceive online feedback as mostly negative. They may derive more benefit from it if they  
29 approached is as capturing extremes of experience that is not representative data where you can  
30 take an average, but is a report of individual patient' experiences.  
31  
32

33 We need to better understand the impact of providing feedback online and to consider the range of  
34 possible factors that influence the contents of online reviews. This might include implicit and explicit  
35 messages patients receive through how websites like NHS Choices are formatted, and through  
36 interactions with the health service. Currently, little is known about the difference between  
37 providing healthcare feedback via different media and this warrants further exploration.  
38  
39

#### 40 **Limitations**

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42 The feedback data gathered between 2009-2016 were extracted from NHS Choices by the research  
43 team in 2017 and the correlations with the GPPS and FFT were conducted using the most recently  
44 available data, which was from 2016. In addition, and as with previous studies of online patient  
45 feedback, we were limited to the information that is available online. Therefore, this study provides  
46 little insight into the characteristics of the patients who provide feedback. Equally, NHS Choices  
47 moderates online posts by patients and does not publish comments that contravene their rules,  
48 including those that are not in English or those containing expletives or staff names. Without access  
49 to these unpublished posts, it is unclear if all posts conform to our findings. However, this is the  
50 nature of this type of insight and, as such, this study provides a comprehensive analysis of what is  
51 available. Adopting a multi-method approach was valuable as it allowed us to correlate the online  
52 feedback with established measures of patient satisfaction. Additional insight as to what impact this  
53 type of feedback could have was found in the course of the qualitative analysis.  
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#### 56 **Future research**

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3 As this study has shown, patients comment on a wide range of aspects of their care experience and  
4 this insight could be used to make improvements in general practice. However, more research is  
5 needed to ascertain whether the findings of this in-depth case study of one CCG could be  
6 extrapolated across the NHS to answer the question of whether local insight can be used to make  
7 national improvements. National experiences can have local resonance,<sup>(26)</sup> but it is unclear if the  
8 reverse is also true. Online platforms may provide a cost-effective and attractive means for soliciting  
9 feedback from patients, but the volume of online reviews per practice is quite low in comparison  
10 with the numbers of patients enrolled. Future research should aim to explore the views of service-  
11 users who are reluctant to comment online. Equally, we need to explore the views of all staff who  
12 are subject to online review, including practice nurses and receptionists, who have been neglected  
13 from previous qualitative research in this area. It is unclear how they feel about this phenomenon. In  
14 addition, we do not know how online patient feedback is used in primary care. More research is  
15 needed to explore this, particularly how general practice staff perceive and use negative feedback.  
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## 20 CONCLUSION

21 Our study shows that patient feedback on general practices found on NHS Choices is correlated with  
22 established measures of patient satisfaction and could be useful in helping patients choose a general  
23 practice, in areas where choice is possible. It also shows that it has potential uses in determining  
24 issues of quality improvement and patient safety. Health providers should offer patients multiple  
25 ways of offering feedback, including online, and should have systems in place to respond to and act  
26 on this feedback.  
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## 31 Figure Legends

32  
33 Figure 1: Correlation between the proportion of positive responses and the Friends and Family Test  
34 score (those who would recommend the general practice)  
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36 Figure 2: Correlation between the proportion of positive responses and proportion of GPPS  
37 respondents reporting an overall positive experience  
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39 Figure 3: Correlation between the proportion of positive responses and proportion of GPPS  
40 respondents who recommend the general practice  
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42 Figure 4: Number of star ratings received across all general practices  
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45

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50  
51  
52  
53

## 54 COMPETING INTERESTS

55 The authors declare no competing interests.  
56  
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6 design; data collection, analysis or interpretation; report writing or decisions about submitting the  
7 paper for publication.  
8  
9

## 10 11 12 **DATA SHARING**

13 All data employed in this paper is available from:

14 [www.nhs.uk](http://www.nhs.uk)

15 [www.england.nhs.uk/fft/friends-and-family-test-data/](http://www.england.nhs.uk/fft/friends-and-family-test-data/)

16 [www.gp-patient.co.uk](http://www.gp-patient.co.uk)  
17  
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## 19 **AUTHOR CONTRIBUTORSHIP**

20 All authors made substantial contributions to the study design and analysis of the data, were  
21 involved in drafting or revising the paper, have approved the final version and agree to be held  
22 accountable for all aspects of the work.  
23

24 Anne-Marie Boylan designed the study, conducted the literature search, analysed and interpreted  
25 the data, drafted the initial manuscript and prepared it for submission.  
26

27 Amadea Turk contributed to the design of the study, sourced the quantitative and qualitative data  
28 and analysed and interpreted the qualitative data, and contributed to writing the manuscript.  
29

30 Michelle van Velthoven contributed to the design of the study, prepared the figures, analysed and  
31 interpreted the quantitative data and contributed to writing the manuscript.  
32

33 John Powell contributed to the design of the study, was involved interpreting the data, and  
34 contributed to writing the manuscript.  
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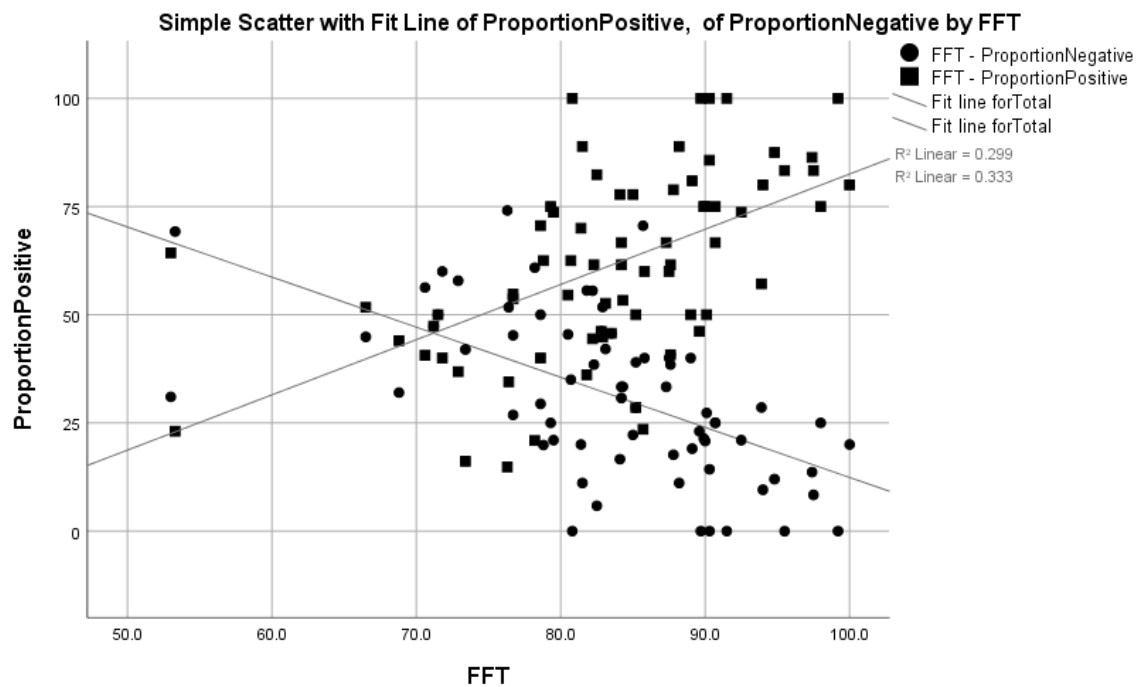


Figure 1 Correlation between the proportion of positive responses and the Friends and Family Test score (those who would recommend the general practice)

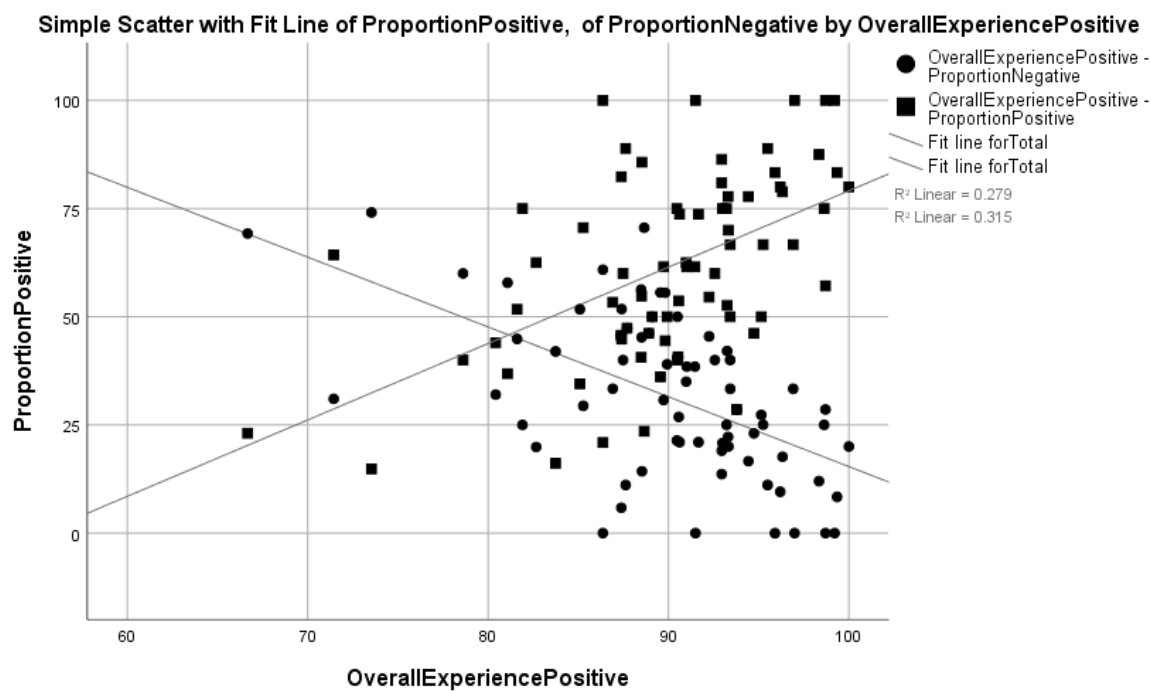


Figure 2 Correlation between the proportion of positive responses and proportion of General Practice Patient Survey respondents reporting an overall positive experience

review only

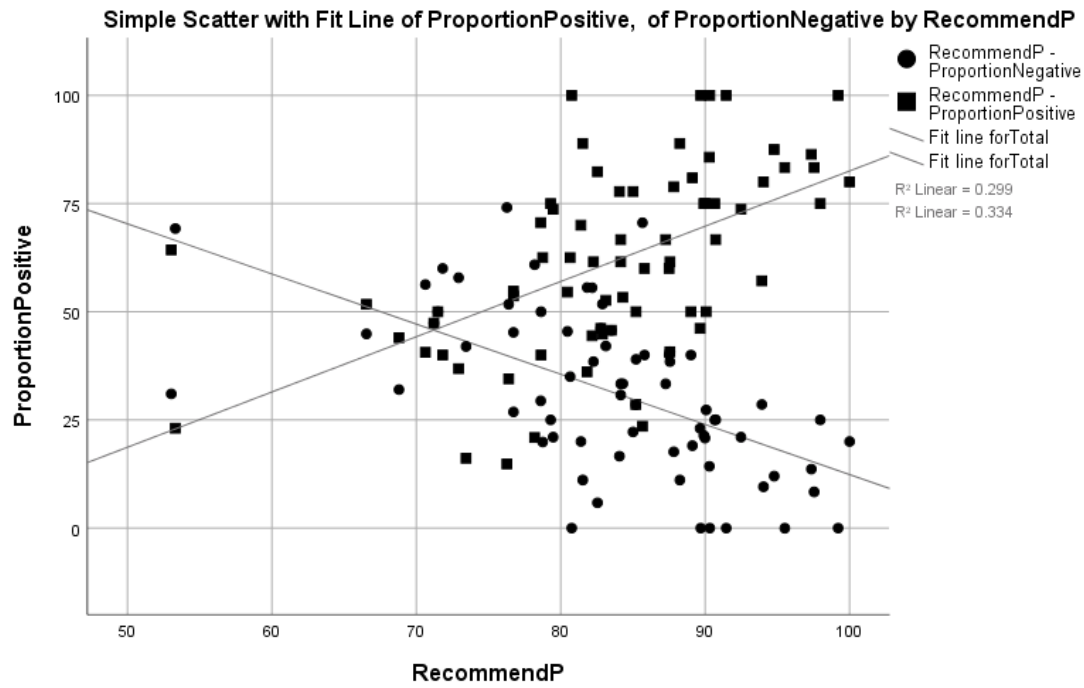


Figure 3 Correlation between the proportion of positive responses and proportion of General Practice Patient Survey respondents who recommend the general practice

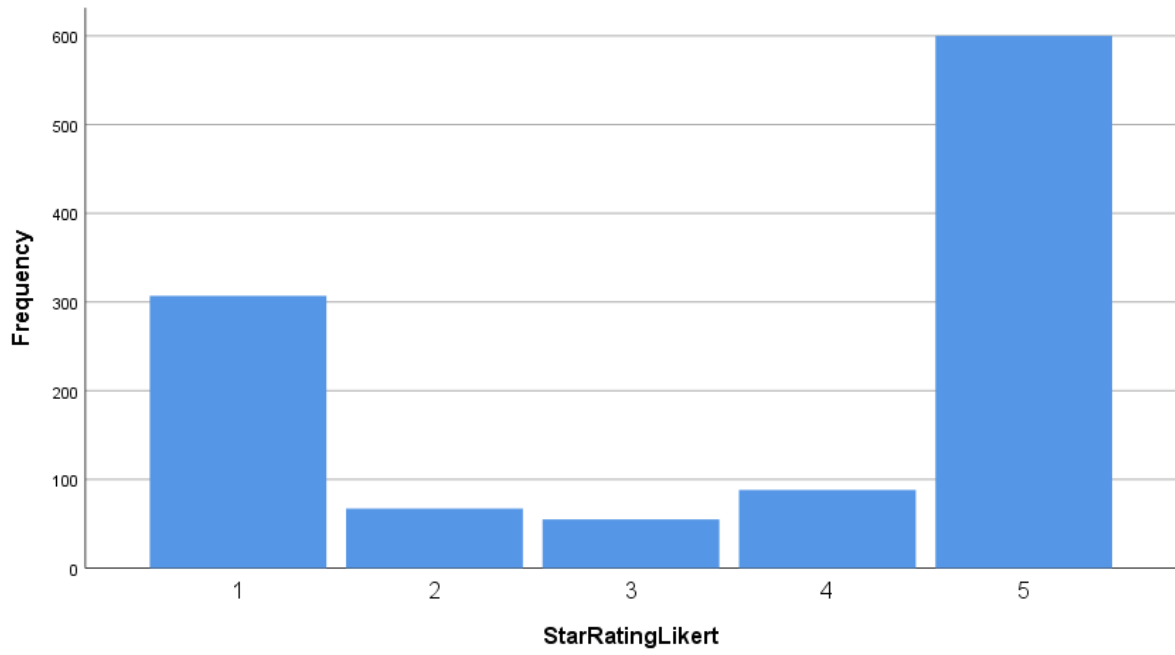


Figure 4 Proportion-Number of star ratings received across all general practices

Peer review only

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# BMJ Open

## Online patient feedback as a measure of quality in primary care: a multi-method study using correlation and qualitative analysis.

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3 **Online patient feedback as a measure of quality in primary care: a multi-method study using**  
4 **correlation and qualitative analysis.**  
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4 **correlation and qualitative analysis.**  
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8 **ABSTRACT**  
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10 **Objectives:** To ascertain the relationship between online patient feedback and the General Practice  
11 Patient Survey (GPPS) and the Friends and Family Test (FFT). To consider the potential benefit it may  
12 add by describing the content of public reviews found on NHS Choices for all general practices in one  
13 Clinical Commissioning Group in England.  
14

15 **Design:** Multi-method study using correlation and thematic analysis.  
16

17 **Setting:** 1396 public online reviews and ratings on NHS Choices for all General Practices (n=70) in  
18 Oxfordshire Clinical Commissioning Group in England.  
19

20 **Results:** Significant moderate correlations were found between the online patient feedback and the  
21 GPPS and the FFT. Three themes were developed through the qualitative analysis: 1) online feedback  
22 largely provides positive reinforcement for practice staff; 2) online feedback is used as a platform for  
23 suggesting service organisation and delivery improvements; 3) online feedback can be a source of  
24 insight into patients' expectations of care. These themes illustrate the wide range of topics  
25 commented on by patients, including their medical care, relationships with various members of staff,  
26 practice facilities, amenities and services in primary care settings.  
27  
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29 **Conclusions:** This multi-method study demonstrates that online feedback found on NHS Choices is  
30 significantly correlated with established measures of quality in primary care. This suggests it has a  
31 potential use in understanding patient experience and satisfaction, and a potential use in quality  
32 improvement and patient safety. The qualitative analysis shows that this form of feedback contains  
33 helpful information about patients' experiences of general practice that provide insight into issues of  
34 quality and patient safety relevant to primary care. Health providers should offer patients multiple  
35 ways of offering feedback, including online, and should have systems in place to respond to and act  
36 on this feedback.  
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42 **Article summary**  
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44 *Strengths and limitations*  
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- 46 • A multimethod approach combining both quantitative and qualitative approaches allows us to  
47 investigate the value of OPF as both a quantifiable measure of quality (for example through  
48 correlation with other scores), as well as to explore the content and draw conclusions about how  
49 people use reviews.  
50
- 51 • The online reviews lack demographic data so it is difficult to draw conclusions about the  
52 characteristics of people who post.  
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- 54 • The General Practice Patient Survey and Friends and Family Test have their own weaknesses,  
55 and is it therefore debatable whether they represent a gold standard with which to correlate.  
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## INTRODUCTION

Patient experience is a core component of quality health care. Recent high-profile inquiries into care failures in the English NHS have uncovered a failure to take account of patients' concerns.(1-3) These inquiries have called for all organisations to solicit the experiences of patients and carers, recognising their experiences as essential to monitoring quality and safety in the NHS. In the NHS patient experience and satisfaction is recorded in primary care using the General Practice Patient Survey (GPPS) and the Friends and Family Test (FFT). However, the FFT has been criticised for its invitation and response biases, and because it has resulted in a significant amount of staff time spent collecting, collating and reporting on the data, rather than devoting this time to quality improvement.(4) The usefulness of the GPPS is also debatable and has been criticised as items pertaining to the patient-doctor relationship are reported at practice level, potentially masking individual GP performance. A study in English general practices found that positive survey responses can mask negative experiences that patients described in subsequent interviews(5) and equally prevents GPs from reflecting on their practice.(6) This suggests that surveys might not capture a full and holistic picture of patients' experiences and that providing a platform on which patients can describe their experiences in an unstructured way may counteract this problem. In fact, there is no gold standard measure of patient satisfaction and experience in primary care and in this context, online patient feedback websites may offer a solution.

Online patient feedback is becoming increasingly prevalent(7). A recent UK survey showed that 42% of respondents had read and 8% had posted online feedback about healthcare experiences on various types of patient feedback websites.(8) Early evidence indicated some correlation with standardised measures of patient satisfaction in secondary care with online feedback about secondary care.(9) It may provide an efficient and effective means of collecting information about patient experience and satisfaction, not necessarily replacing current standardised measures, but offering a way to complement their content. The emergence of online feedback is also seen as potentially useful in monitoring and inspection(10) – in 2013, the Care Quality Commission invited websites that collect patient feedback to share data for use in their monitoring activities. At the same time, General Practitioners (GPs) express a range of concerns about online patient feedback, particularly in relation to its usability, validity and transparency.(11) Equally, patients in general have mixed views about the appropriateness of posting reviews online. A qualitative interview study showed that it can be a convenient way of publicly sharing feedback, but that patients are concerned about accessibility, privacy and security, and about how seriously doctors would take it.(12)

In addition to the concerns of GPs and patients, there are other factors in general practice that may complicate the reception and use of online feedback. General practice provides a different context for online reviews and ratings than secondary care. The smaller nature of each organisation means that there is greater potential for staff and patients to be identifiable in reviews. Unlike most secondary care organisations, general practices do not tend to have dedicated patient experience managers or communications staff, and the resource (finance and time) implications of reading and responding to feedback may often be prohibitive.

In this context, we undertook a multi-method study to examine the relationship between the content of online patient feedback on the NHS's patient feedback website, NHS Choices, and standardised measures of patient experience and satisfaction (the GPPS and FFT), acknowledging that these measures are not without their flaws. Our aim was to determine if there was a correlation between online reviews and ratings (both qualitative and quantitative feedback) and other quality measures. We also aimed to identify what the content of online reviews reveals about patient

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3 experience and satisfaction with general practice, and if it has the potential to provide additional  
4 benefit to understanding experiences of primary care.  
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## 8 **METHODS**

### 9 **Study design**

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11  
12 This is a multi-method study of online patient qualitative reviews and quantitative ratings for each  
13 general practice in Oxfordshire Clinical Commissioning Group (CCG) in England. A multimethod  
14 approach, combining both quantitative and qualitative approaches, allows us to investigate the  
15 value of online patient feedback data as both a quantifiable measure of quality, including through  
16 correlation with other frequently used measures, as well as to explore content and draw conclusions  
17 about the usability of reviews. Other measures include the FFT, which asks patients “How likely are  
18 you to recommend our service to friends and family if they needed similar care or treatment?”  
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### 21 **Setting**

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23 This study was conducted on all general practices in Oxfordshire CCG in England, which, at the time  
24 of data collection, included 70 general practices, serving approximately 700,000 registered patients.  
25 Oxfordshire CCG covers a mixed rural/urban population which is relatively affluent although there  
26 are pockets of deprivation with significantly poorer outcomes in terms of health, education, income  
27 and employment. In 2018, 87.4% patients reported having a positive experience of their GP practice  
28 compared with a national (England) average of 83.8%; and the total percentage of Quality Outcomes  
29 Framework (QOF) points obtained across Oxfordshire CCG was 97.6% compared with an England  
30 average of 96.3%.  
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34 Data for each practice were extracted from NHS Choices, the General Practice Patient Survey and  
35 the Friends and Family Test. More information on the general practices can be found at  
36 oxfordshireccg.nhs.uk. NHS Choices ([www.nhs.uk](http://www.nhs.uk)) is the UK’s biggest health website, containing a  
37 range of information about health conditions and health services. In addition to learning about the  
38 staff and facilities at any general practice, patients can post reviews and ratings of their experiences  
39 of using a general practice to the NHS Choices site. Patients enter their feedback (reviews and  
40 ratings) on a page dedicated to their general practice. There are some instructions provided on how  
41 to do this. All reviews are anonymised by NHS Choices before they are publicly available using  
42 specific moderation rules, which include removing other names, including staff names, and swear  
43 words. No identifiable information is published. Online patient feedback lacks accompanying  
44 demographic data, so conclusions about the characteristics of those who post are not possible.  
45 General practice staff can access these comments and can respond online if they choose.  
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### 48 **Data sources**

49  
50 All patient reviews and ratings for each general practice in the Oxfordshire CCG posted from October  
51 2009 to July 2016 were extracted from NHS Choices in October 2017. The reviews were in text  
52 format and the ratings were numeric, on a scale of 1–5 stars. The GPPS and the FFT data were  
53 downloaded from [gp-patient.co.uk](http://gp-patient.co.uk) and [england.nhs.uk/fft](http://england.nhs.uk/fft) (the NHS England website) respectively  
54 for July 2016. The total proportions of respondents with a good experience (very and fairly good) for  
55 the ‘Overall experience of GP surgery’ and ‘Recommending GP surgery to someone who has just  
56 moved to the local area’ scores were extracted from the GPPS. The total proportion of respondents  
57 recommending the practice (extremely likely and likely) for the ‘likelihood to recommend the  
58 practice to friends and family’ score from the FFT were extracted for each practice in the CCG.  
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## Methods of analysis

### Quantitative analysis of the reviews and ratings

Quantitative analyses were conducted using SPSS version 22. Each of the 70 practices was given a unique identifying number. Reviews were checked by two researchers and duplicates removed. Descriptive analyses were conducted to demonstrate the trend in frequency of reviews, and the proportion of positive, negative and mixed comments. We report the median and interquartile range for the number of reviews. We used Spearman's Rho to determine correlations between positive and negative reviews, the GPPS and the FFT and report the Spearman correlation,  $R^2$ , and P value ( $P < 0.05$  considered to be significant). The content of the qualitative reviews were assigned a numeric value to categorise them as either entirely positive (1) or entirely negative (0). These comments contained either only positive or only negative items. Mixed responses, i.e. containing both positive and negative items were also categorised and assigned a numeric value (2). The proportions of positive, negative, and mixed responses reviews were calculated by dividing the number of those reviews by the total number of reviews. For the GPPS, the total proportions of respondents with a good experience were calculated by combining the proportions of respondents who had a 'very good' or 'fairly good' experience, and respondents recommending the practice were calculated by combining the proportions of respondents who said 'definitely' or 'probably' recommend the practice to someone who had just moved to the local area. For the FFT, the total proportions were calculated by combining the proportions of respondents who were 'extremely likely' or 'likely' to recommend the practice to friends and family. Using Spearman's Rho, the proportion of positive and negative comments were individually compared with the GPPS 'good experience' and 'likely to recommend the practice' scores and the FFT 'likely to recommend the practice' score. The NHS choices reviews were compared to their accompanied star ratings to research whether the valence of reviews matched their star ratings (e.g. whether negative reviews had low star ratings, mixed reviews had medium star ratings, and positive reviews had high star ratings).

### Qualitative analysis of the reviews

We adopted an inductive thematic approach<sup>(13)</sup> to analyse the qualitative reviews. This allowed us to explore and search for patterns in the subjective experiences reported in the reviews. The reviews were analysed by the first and second author (AMB & AT) and NVivo 11 was used to aid the data management process. A coding frame was developed inductively in discussion with the research team and was updated when new codes were added. The emergent findings were discussed in regular meetings. The resulting themes were developed inductively and in discussion with the wider research team. The qualitative analysis was conducted before the quantitative analysis in an attempt to ensure that it was not influenced by the quantitative findings.

To ensure quality, we drew on Yardley's<sup>(14)</sup> principles of good qualitative research. To demonstrate *sensitivity to context* we drew on a comprehensive scoping review of relevant literature to inform this research and obtained ethical approval from the University of Oxford (reference R53128/RE001) prior to commencing the research. Skilled and experienced researchers undertook thorough data collection and in-depth analyses to demonstrate *commitment and rigour*. We kept a clear audit trail and used appropriate methods, demonstrating *transparency and coherence* and we consider the *impact and importance* of this work in the discussion below.

## Ethics

This study was approved by the Medical Sciences Inter-Divisional Research Ethics Committee, University of Oxford (Ref: R53128/RE001).

### Patient and public involvement

Patients and members of the public were not involved in planning or conducting this study. However, they were consulted about a wider programme of work on online feedback and agreed that exploring the content of patient feedback for primary care was an important project.

## RESULTS

### Quantitative analysis of the reviews and ratings

At the time of data collection (October 2016), there were 1402 reviews in total for the 70 practices. Six were verbatim repetitions (i.e. posts by the same users at the same time) indicating they were errors and so were excluded from further analyses, leaving a total number of 1396 included reviews. Every general practice in this CCG had received at least one review on NHS Choices. The median number of reviews was 17 (Inter Quartile Range: 9 to 28). One surgery had received only one review and the highest number of reviews received by any surgery was 142. The earliest was recorded on 13 October 2009. Of the 1396 reviews, 59% (n=823) were positive, 34% (n=474) were negative and the remainder 7% were mixed (n=99).

#### Correlation with FFT

Our correlation analyses showed that practices with a larger proportion of positive reviews had a significantly higher FFT score (Spearman correlation=0.595,  $R^2=0.299$ ,  $P=0.000$ ) and those with a larger proportion of negative reviews had a significantly lower FFT score (Spearman correlation=-0.625,  $R^2=0.333$ ,  $P=0.000$ ). See Table 1 and Figure 1.

*Table 1: Correlation (Spearman) between the proportion of positive responses and Friends and Family Test score (those who would probably or definitely recommend the practice)*

	<b>Proportion Positive versus Friends and Family Test score</b>	<b>Proportion Negative versus Friends and Family Test score</b>
Correlation Coefficient	.595*	-.625*
Significance (2-tailed)	.000	.000
Total number	70	70

\* Correlation is significant at the 0.01 level (2-tailed).

#### Correlation with GPPS

General practices with a larger proportion of positive reviews had a significantly higher proportion of positive GPPS comments (Spearman correlation=0.527,  $R^2=0.279$ ,  $P=0.000$ ). General practices with a larger proportion of negative reviews had a significantly lower proportion of positive GPPS comments (Spearman correlation=-0.560,  $R^2=0.315$ ,  $P=0.000$ ). See Table 2 and Figure 2.

*Table 2: Correlation between the proportion of positive response and proportion of General Practice Patient Survey (GPPS) respondents with an overall positive experience (very good or fairly good)*

	<b>Proportion Positive versus GPPS Positive Overall Experience</b>	<b>Proportion Negative versus GPPS Positive Overall Experience</b>
Correlation Coefficient	.527*	-.560*
Significance	.000	.000
Total number	70	70

\* Correlation is significant at the 0.01 level (2-tailed).

General practices with a larger proportion of positive reviews had a significantly higher proportion of patients from the GPPS survey recommending the surgery (Spearman correlation=0.595,  $R^2=0.279$ ,  $P=0.000$ ). General practices with a larger proportion of negative reviews had a significantly lower proportion of positive GPPS comments (Spearman correlation=-0.625,  $R^2=0.334$ ,  $P=0.000$ ). See Table 3 and Figure 3.

*Table 3: Correlation between the proportion of positive responses and proportion of General Practice Patient Survey (GPPS) respondents who recommended the surgery*

	<b>Proportion Positive versus GPPS Recommending the Practice</b>	<b>Proportion Negative versus GPPS Recommending the Practice</b>
Correlation Coefficient	.595*	-.625*
Significance	.000	.000
Total number	70	70

\* Correlation is significant at the 0.01 level (2-tailed).

80% (n=1117) of the 1396 reviews were accompanied by a star rating, of which 44% (n=600) had received a five-star rating, the highest possible score. 28% (n=307) had received the lowest rating of one. The spread of star rating scores is shown in Figure 4, clearly demonstrating a U-shaped distribution.

#### Ratings versus reviews

Of the 307 one-star ratings, 96% (n=294) were accompanied by a negative review. Of the 600 five-star reviews, 96% (n=578) were accompanied by a positive review. Of the 55 three-star ratings, 58% (n=32) were negative, 35% (n=19) positive and the remainder were mixed (Table 4).

*Table 4: Star ratings versus reviews*

<b>Star rating</b>		<b>Negative review</b>	<b>Positive review</b>	<b>Mixed review</b>	<b>Total reviews</b>
1	Number	294	3	10	307
	% within Star Rating	95.8%	1.0%	3.3%	100.0%
2	Number	60	3	4	67
	% within Star Rating	89.6%	4.5%	6.0%	100.0%
3	Number	32	4	19	55
	% within Star Rating	58.2%	7.3%	34.5%	100.0%
4	Number	10	60	18	88
	% within Star Rating	11.4%	68.2%	20.5%	100.0%
5	Number	8	578	14	600

	% within Star Rating	1.3%	96.3%	2.3%	100.0%
Total	Number	404	648	65	1117
	% within Star Rating	36.2%	58.0%	5.8%	100.0%

### Qualitative analysis of the reviews

In this section, we present the findings of the qualitative analyses of the comments on the general practices. Three themes were developed through an iterative process and in discussion with the research team: 1) online feedback largely provides positive reinforcement for practice staff; 2) online feedback is used as a platform for suggesting service organisation and delivery improvements; 3) online feedback can be a source of insight into patients' expectations of care. Sample quotations from the reviews illustrating the themes are found in Table 5.

The comments were about the full range of practice staff, including GPs, practice nurses, midwives, receptionists and pharmacists. Reviews about GPs, nurses and midwives frequently, but not exclusively, recounted positive experiences care. Reviews about receptionists often included negative content. Practice managers were not explicitly mentioned in the comments. Patients often used reviews to express satisfaction or dissatisfaction with their interactions with staff. They also used them as an opportunity to express gratitude for the care they received.

#### *Online feedback largely provides positive reinforcement for practice staff*

Reviews were largely positive and reviewers sometimes prefaced or concluded their positive comments with how they were surprised at the negative reviews and ratings their practice had received. In response to this, they often included a defence of the practice in the positive report of their care experiences. This demonstrates the positive esteem in which patients who comment online hold their general practices, and that they wanted staff to know they supported them and felt positively about their care experiences.

Reviewers made largely favourable comparisons between their current practice and others they had previously attended or had heard about. Patients' comparisons with other practices and with doctors within practices were sometimes unfavourable, but for the most part were positive. The reviews also contained comparisons of doctors within each practice, demonstrating that patients drew on previous experiences in writing their reviews and not necessarily on one single interaction. These findings suggest that those who provide online patient feedback draw on their personal histories and relationships with the practices and practice staff when reviewing their experiences. (See Table 5)

#### *Online feedback is used as a platform for suggesting service organisation and delivery improvements*

The comments frequently referred to the services offered by the practice, how the patients experience them and the way in which services were organised and delivered. They discussed a range of service delivery issues. These included access and appointments, which were largely a source of frustration for patients, who frequently acknowledged that GPs did their best to work within the strict time constraints they were under. Time taken to get an appointment was frequently reported in the reviews. This related to the time spent trying to get through on the phone and talking to the receptionists in addition to the delay in availability of appointments with patients citing waiting times of three weeks and longer. Opening hours was also another contentious access

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3 issue. Practices were criticised for closing for lunch and others were praised for offering  
4 appointments in the evenings and on Saturdays. Continuity of care was often discussed alongside  
5 the issue of appropriate provision of staff. Many comments referred to not being able to see their  
6 named GP or to see the same GP twice about the same issue. This was not a concern for all, as  
7 comments stated GPs took the time to review their medical notes.  
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10 Other services that were commented on, included automated check-in machines, booking systems  
11 and online services, which again received mixed feedback. How these improved efficiency for  
12 patients or made attending appointments more complex was explored in the reviews. Telephone  
13 access and triage were again mixed with patients particularly commenting on the role of  
14 receptionists as gatekeepers. There were concerns about receptionists asking about the reason for  
15 the call without having any medical training. Comments also considered the physical environment  
16 and focused on the building, particularly its accessibility, aesthetics and cleanliness. Facilities, mainly  
17 parking and waiting rooms were subject to review with concerns on the latter pertaining particularly  
18 to issues of privacy. Comments included those posted by patients who had a substantial history with  
19 the practice and contained information about how they perceived the practices had changed over  
20 time, offering insight into how they had improved or declined.  
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24 Patients' feedback often included suggested improvements, indicating that providing online  
25 feedback was not used simply as a chance to complain or moan about their practice. The range of  
26 items contained in the feedback in this theme demonstrates the broad range of issues that are  
27 important to patients' experiences of attending their general practice and it is clear that they feel  
28 confident in reviewing aspects their experience that relate to service delivery and organisation.  
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### 32 *Online feedback can be a source of insight into patients' expectations of care*

34 Positive accounts of care by all healthcare staff often included adjectives such as '*personal*',  
35 '*compassionate*', and '*respectful*'. Descriptions of positive care often centred on communication  
36 skills with reviewers commenting on times when healthcare staff listened, and took the time needed  
37 to explain the diagnosis, treatment, side effects, and what to expect next. They also included  
38 accounts of shared decision-making and involvement in decisions about care.  
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41 Poor communication was also reported frequently in the negative or mixed reviews. This tended to  
42 be about not being listened to, feeling rushed and treated with suspicion, particularly with regard to  
43 medication requests or repeat prescriptions. There were multiple negative evaluations of the  
44 doctors' attitudes, with reviewers using words like '*rude*', '*unfortunate manner*', '*unfriendly*'  
45 '*dismissive*', '*hostile*', '*condescending*' and '*disinterested*'.  
46  
47

48 The reviews contained accounts of instances when patients' dignity and privacy were compromised  
49 by the action or inaction of staff, providing insight into how staff could improve the patients'  
50 experiences by prioritising dignity and privacy. Reviewers also commented on their perceptions of  
51 the competence of the staff they encountered. They recounted experiences that led them to feel like  
52 they could not trust their healthcare practitioner's advice. Comments also addressed misdiagnoses,  
53 feeling dismissed, queries around staff competence and suspicions around mistakes. These included  
54 global statements, like '*the GP misdiagnosed me on several occasions*' that contained no specific  
55 information to assess the veracity or gravity of the concern. However, comments also contained  
56 specific detail about medical aspects of their condition (see Table 5). Comments containing specific  
57 information may indicate the level of engagement some patients have with their care and possibly  
58 their expectations of how GPs should therefore interact with them. It was also notable that patients  
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were aware of the constraints GPs were working within and recognised that they could not always give the care they wanted to.

Reviewers also commented on their interactions with receptionists using both positive and negative terms: 'exceptional', 'helpful', 'efficient', 'kind and respectful' and 'rude', 'brusque', 'didn't listen', 'incompetent'. These extremes demonstrate the variation of experiences that are reported online. Criticisms of and praise for receptionists often pertained to their manner and not their efficiency or competence. They were often described as 'customer-facing' or performing a 'customer service' role. This perception conflicted with some aspects of their role, including the questions they asked when patients phoned to ask for an appointment or to speak to the doctor. What is clear is that receptionists are seen as the face of the practice and can influence how patients feel about the care they receive from booking and checking in for appointments to the interaction with their GP or the practice nurse.

This theme provides an understanding of patients' expectations of care and interactions with general practice staff, which often centred around the level of interaction they expected with their GP. A sense of thoroughness and completeness was important in interactions with GPs, whilst good 'customer care' was often cited in relation to interactions with receptionists.

Table 5: Sample quotations from the online reviews

#### **Online feedback largely provides positive reinforcement for practice staff**

*I am surprised at some of the adverse comments about this GP surgery. I have been registered with the practice ... for many years and would be devastated if I had to change surgery; my GP has always been excellent, listens and is proactive in referring me on for other services if required.*

*I transferred to this practice from a different surgery [...] because it was almost impossible to get an appointment with my previous GP. This surgery is so much better - the availability of appointments with doctors and nurses is great. ... my experience is that they are much better than other GPs in the area.*

#### **Online feedback is used as a platform for suggesting service organisation and delivery improvements**

*[...] Getting appointments can be a challenge! I have been a patient of this surgery for 30 years and things are a lot better now than they were 15 years ago!*

*The appointment side of things is also ridiculous. The earliest appointment I've managed to get recently has been 3 weeks in advance! Which when you need to see someone fairly urgently isn't acceptable.*

*Very long wait each time. The worst was today where I had to wait for 1.5hrs to see the GP despite arriving punctual for my appointment.*

*The doctor I am listed with is excellent, I have been less impressed when I have had to see another doctor in the practice, who is much less approachable and seemed rather dismissive.*

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*I am very unhappy with the disabled parking at this medical centre. I am a wheelchair user and I can not use the one space they have. Its too small...*

*I like the new TV and music in the waiting room, it gives a more relaxed feel and something to pass the time with some interesting information*

*...Could also do with some new chairs in the waiting room to match their new extension and to keep patients comfortable while they wait!*

*Premises are cramped and overcrowded. Playing Radio 2 very loud in the waiting room "for reasons of confidentiality" is not great if you have a headache or are feeling unwell.*

*Sometimes it can be difficult to get through on the phone but an extended surgery until 8pm one day a week is very useful for me*

*An overcrowded surgery, with too many part-time GPs. This means that it is difficult to see the same GP each time and there is therefore no real continuity of care.*

*I have never seen the same doctor more than once; however, I have no complaints about all the doctors whom I have seen.*

#### **Online feedback can be a source of insight into patients' expectations of care**

*Always on one's level with superb listening skills and adequately explaining things. Never any sense of rush. I always feel at ease and appropriate nice humour shared is good. So very polite and they say they are sorry to have kept me waiting.*

*One of the practice nurses is also excellent, capable of carrying out the most intimate of procedures without causing embarrassment.*

*There are three doctors in the surgery. I have found all of them well-informed and caring, taking time to explain procedures, results, and options.*

*I put three stars for involvement in decisions because sometimes the doctors themselves have no choice or they have very less alternatives for treatment or for referral options, so they are limited to help with a range of options. This limitation is mostly due to the system itself within which they need to work in. But all staff try and help as much as possible.*

*They told me to undress, did not offer me a gown to cover myself and made me lay on the table next to an open window with partially open curtains.*

*For COPD they initially prescribed half the normal dose of inhaler, presumably in order to cut costs. They didn't give me any guidance about exacerbations. More recently at my annual review my SpO2 (oxygen saturation) was recorded as 98% rather than the actual value of around 94%. The 98% would have put me outside the recommended range for review for further medication.*

*...there is one receptionist, who is very helpful just like the others, but very rarely smiles when dealing with patients.*

*The receptionists always pretend that they are the doctors and ask lots of questions that they don't have a clue at all, but eventually, I was always told that a doctor needs to call me back again*

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3 to discuss the problem. Which is waste of time for everyone, because in every case of mine, the  
4 doctor will say that I need to see them anyway.  
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## 10 DISCUSSION

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12 This study found a relationship between online patient feedback and other quality measures,  
13 specifically the GPPS and the FFT, in general practices in one English CCG. We found a moderate  
14 positive correlation between the online feedback on NHS Choices and both of these quality  
15 measures. Online patient feedback was found to express the extremes of experience, the very  
16 positive and the very negative, as demonstrated by the U-shaped distribution of the frequencies of  
17 different ratings (figure 4). The majority of the ratings were positive with few middle-ground  
18 experiences being reported. This also suggests that it is not appropriate to take an arithmetic  
19 average (mean) score from these data, given the skewed distribution towards each end of the  
20 spectrum.  
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24 Through our qualitative analysis, we developed three themes that indicate how patients who post  
25 online feedback review their experiences. We demonstrated that they use NHS Choices to provide  
26 positive reinforcement for staff, to suggest improvements to service delivery and organisation, and  
27 we found that the comments contained a great deal of information about their expectations of care.  
28 Reviewers commented on almost the full range of practice staff; only practice managers were  
29 omitted from the reviews, perhaps because they are less likely to interact with patients than other  
30 staff. The vast majority of comments were positive and pertained to a range of factors about the  
31 care experience, including the environment, service delivery, and interactions with staff. However,  
32 this analysis demonstrates that patients also comment on issues relevant to quality (e.g. autonomy,  
33 choice, clarity of communication, confidentiality, dignity, prompt attention, and quality of basic  
34 amenities) and on issues of patient safety (e.g. access, skill and competence of clinicians and clinical  
35 errors, although examples of these were few).  
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39 To our knowledge, no other study has shown a relationship between quality measures and online  
40 feedback in primary care. Other studies have found correlations with online feedback in secondary  
41 care in England(9) with the inpatient survey and the Hospital Consumer Assessment of Healthcare  
42 Providers and Systems (HCAHPS) in the United States.(15) We acknowledge that the FFT and GPPS  
43 are not without their problems, but there is no gold standard measure of quality or safety in primary  
44 care with which to compare online feedback. The position of online feedback, therefore, may be to  
45 provide supplementary information on issues of patient experience in primary care and pluralise the  
46 range of media through which patients can report their experiences.  
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49 Our findings are consistent with previous research that has shown that the majority of online  
50 feedback is positive.(7, 16-18) This is contrary to the opinions of GPs, who have been found to  
51 perceive online feedback as predominantly negative.(11) Also consistent with previous research is  
52 the U-shaped distribution of the weighting of online feedback, which was reported in a study of a  
53 German patient feedback website on which approximately 50 percent of the feedback was aimed at  
54 general practitioners.(19)  
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57 Berwick(3) argued that the NHS should be a '*system devoted to continual learning and improvement*  
58 *of patient care*' (p.5). He also called for more transparent reporting on quality and safety data, and  
59 emphasised the importance of listening to patients and carers. This is particularly important as what  
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3 constitutes quality or good care may not be consistent across all populations.(20) Online feedback  
4 websites may provide a partial solution to this, offering patients the opportunity to see how others  
5 have reviewed their care. Equally, rating and review sites could act as databases of experiential  
6 insight; thus potentially useful to healthcare providers aiming to incorporate patients' views in  
7 service organisation and delivery.  
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10 In addition to quality improvement, online feedback has the potential to improve patient safety.(21)  
11 A small minority of patients commented on the medical aspects of their experiences (e.g. oxygen  
12 saturation levels in COPD); most only mentioned their condition or disease to explain why they  
13 needed to see the doctor. We suggest patients may have the capacity to comment online on this  
14 level and thus on issues pertinent to patient safety. This has been demonstrated in previous studies  
15 of patient safety in primary and secondary care.(22, 23)  
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18 Patients' views on safety in primary care have previously been researched qualitatively and through  
19 patient reported experience and outcome measures. Communication has been shown to be crucial  
20 in improving patient safety, along with timely access, improved speed of diagnosis and continuity of  
21 care.(22, 24) Evaluating task performance (the ability of staff to perform particular tasks, largely  
22 diagnosis and appreciation of the severity of the problem) was heightened by patients with previous  
23 experience of medical harm.(22)  
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26 Online feedback should not be the only means of collecting patient insight; a pluralised approach  
27 remains warranted.(25) Only a small number of people post reports of their care experiences online.  
28 A recent survey in the UK found 8% of respondents had posted feedback,(8) indicating that public  
29 awareness is low and perhaps that staff may not encourage this activity. However, the same survey  
30 showed that 42% reported reading online feedback, demonstrating the potential power it wields. As  
31 we have shown, the majority of feedback is positive and records extremes of experience. GPs tend  
32 to perceive online feedback as mostly negative. They may derive more benefit from it if they  
33 approached is as capturing extremes of experience that is not representative data where you can  
34 take an average, but is a report of individual patient' experiences.  
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38 We need to better understand the impact of providing feedback online and to consider the range of  
39 possible factors that influence the contents of online reviews. This might include implicit and explicit  
40 messages patients receive through how websites like NHS Choices are formatted, and through  
41 interactions with the health service. Currently, little is known about the difference between  
42 providing healthcare feedback via different media and this warrants further exploration.  
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#### 44 **Limitations**

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46 The feedback data gathered between 2009-2016 were extracted from NHS Choices by the research  
47 team in 2017 and the correlations with the GPPS and FFT were conducted using the most recently  
48 available data, which was from 2016. In addition, and as with previous studies of online patient  
49 feedback, we were limited to the information that is available online. Therefore, this study provides  
50 little insight into the characteristics of the patients who provide feedback. Equally, NHS Choices  
51 moderates online posts by patients and does not publish comments that contravene their rules,  
52 including those that are not in English or those containing expletives or staff names. Without access  
53 to these unpublished posts, it is unclear if all posts conform to our findings. However, this is the  
54 nature of this type of insight and, as such, this study provides a comprehensive analysis of what is  
55 available. Adopting a multi-method approach was valuable as it allowed us to correlate the online  
56 feedback with established measures of patient satisfaction. Additional insight as to what impact this  
57 type of feedback could have was found in the course of the qualitative analysis.  
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### Future research

As this study has shown, patients comment on a wide range of aspects of their care experience and this insight could be used to make improvements in general practice. However, more research is needed to ascertain whether the findings of this in-depth case study of one CCG could be extrapolated across the NHS to answer the question of whether local insight can be used to make national improvements. National experiences can have local resonance,(26) but it is unclear if the reverse is also true. Online platforms may provide a cost-effective and attractive means for soliciting feedback from patients, but the volume of online reviews per practice is quite low in comparison with the numbers of patients enrolled. Future research should aim to explore the views of service-users who are reluctant to comment online. Equally, we need to explore the views of all staff who are subject to online review, including practice nurses and receptionists, who have been neglected from previous qualitative research in this area. It is unclear how they feel about this phenomenon. In addition, we do not know how online patient feedback is used in primary care and how or if staff can use it to make improvements.(27, 28) More research is needed to explore this, particularly how general practice staff perceive and use negative feedback.

### CONCLUSION

Our study shows that patient feedback on general practices found on NHS Choices is correlated with established measures of patient satisfaction and could be useful in helping patients choose a general practice, in areas where choice is possible. It also shows that it has potential uses in determining issues of quality improvement and patient safety. Health providers should offer patients multiple ways of offering feedback, including online, and should have systems in place to respond to and act on this feedback.

### Figure Legends

Figure 1: Correlation between the proportion of positive responses and the Friends and Family Test score (those who would recommend the general practice)

Figure 2: Correlation between the proportion of positive responses and proportion of GPPS respondents reporting an overall positive experience

Figure 3: Correlation between the proportion of positive responses and proportion of GPPS respondents who recommend the general practice

Figure 4: Proportion of star ratings received across all general practices

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### COMPETING INTERESTS

The authors declare no competing interests.

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## DATA SHARING

All data employed in this paper is available from:

[www.nhs.uk](http://www.nhs.uk)

[www.england.nhs.uk/fft/friends-and-family-test-data/](http://www.england.nhs.uk/fft/friends-and-family-test-data/)

[www.gp-patient.co.uk](http://www.gp-patient.co.uk)

## AUTHOR CONTRIBUTORSHIP

All authors made substantial contributions to the study design and analysis of the data, were involved in drafting or revising the paper, have approved the final version and agree to be held accountable for all aspects of the work.

Anne-Marie Boylan designed the study, conducted the literature search, analysed and interpreted the data, drafted the initial manuscript and prepared it for submission.

Amadea Turk contributed to the design of the study, sourced the quantitative and qualitative data and analysed and interpreted the qualitative data, and contributed to writing the manuscript.

Michelle van Velthoven contributed to the design of the study, prepared the figures, analysed and interpreted the quantitative data and contributed to writing the manuscript.

John Powell contributed to the design of the study, was involved interpreting the data, and contributed to writing the manuscript.

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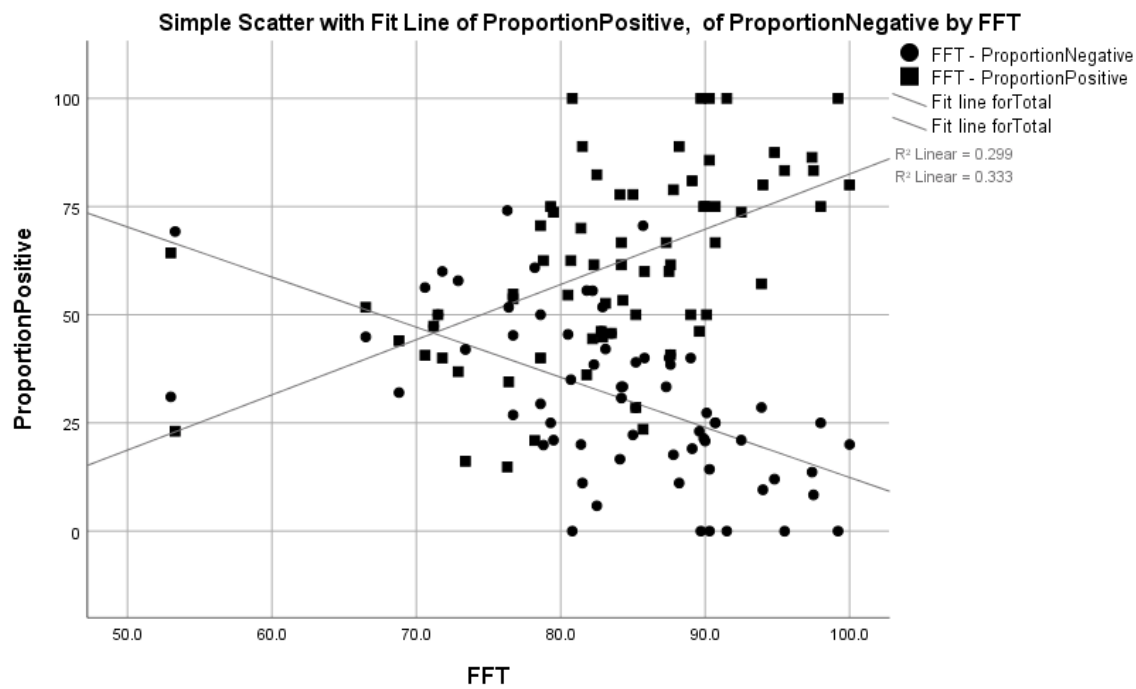


Figure 1 Correlation between the proportion of positive responses and the Friends and Family Test score (those who would recommend the general practice)

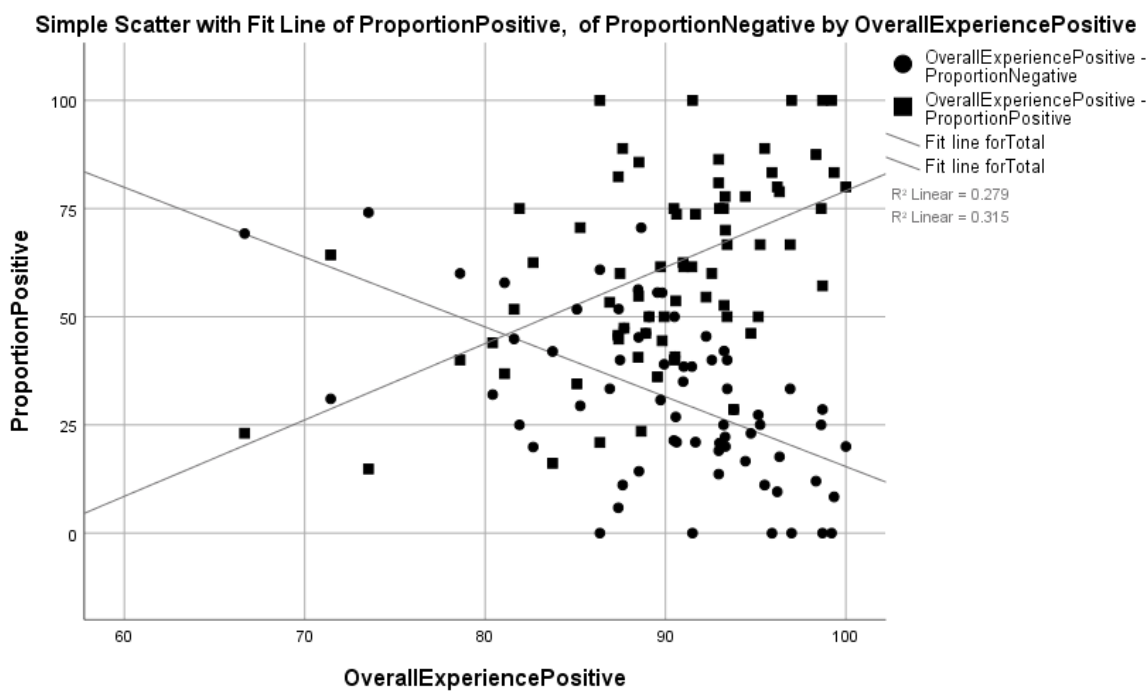


Figure 2 Correlation between the proportion of positive responses and proportion of General Practice Patient Survey respondents reporting an overall positive experience

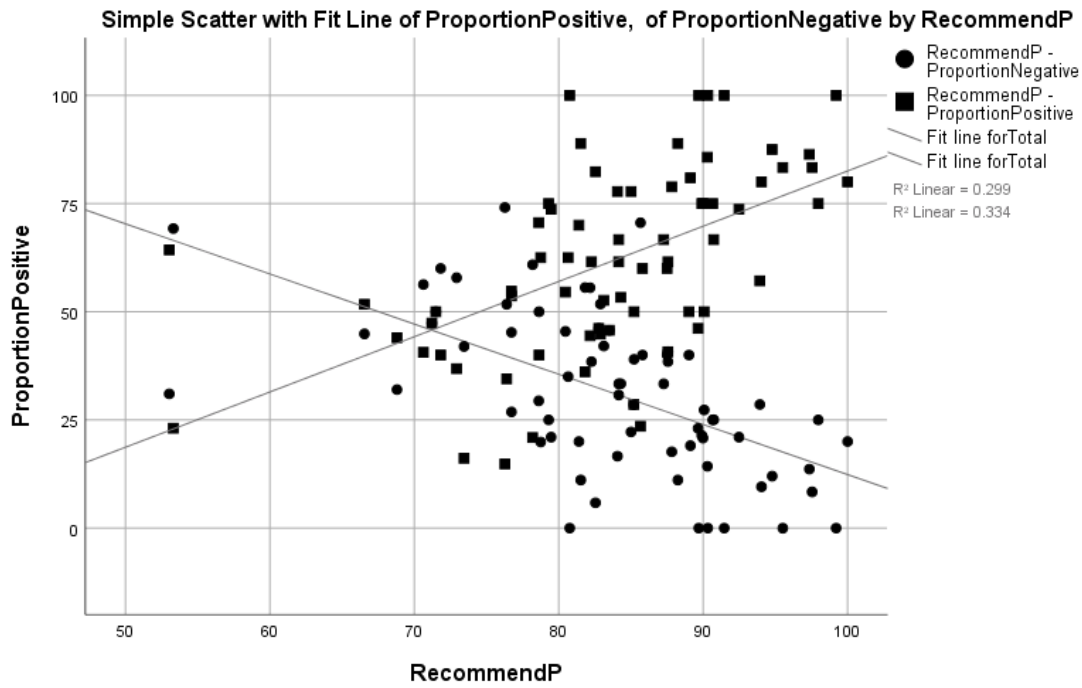


Figure 3 Correlation between the proportion of positive responses and proportion of General Practice Patient Survey respondents who recommend the general practice

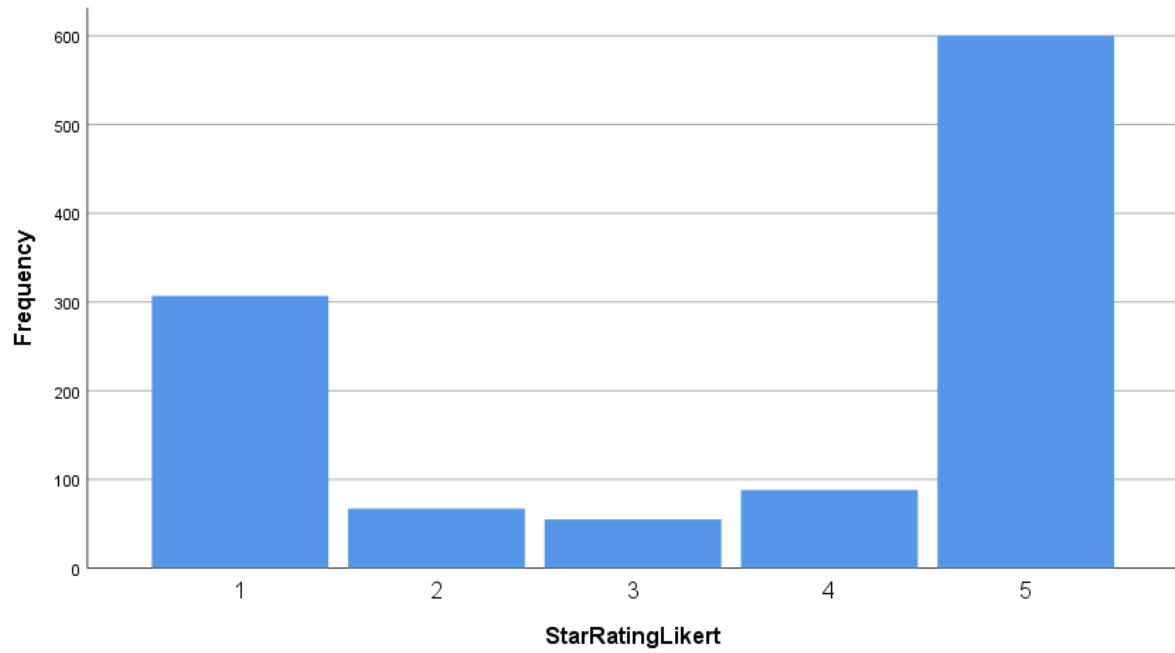


Figure 4 Number of star ratings received across all general practices