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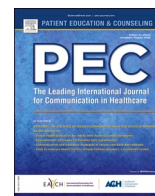
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## Recognition, explanation, action, learning: Teaching and delivery of a consultation model for persistent physical symptoms

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### ABSTRACT

**Objective:** To describe the teaching and delivery of an extended consultation model designed for clinicians to use with patients with persistent physical symptoms and functional disorders. The model is underpinned by current scientific knowledge about persistent physical symptoms and the communication problems that arise in dealing with them.

**Methods:** Process evaluation of training and delivery of the Recognition, Explanation, Action, Learning (REAL) model within the Multiple Symptoms Study 3: a randomised controlled trial of an extended-role GP “Symptoms Clinic”. Evaluation used clinician and patient interviews and consultation transcripts.

**Results:** 7 GPs were trained in the intervention and 6 of them went on to deliver the REAL model in Symptoms Clinics either face-to-face or online. The Symptoms Clinic provided a set of 4 extended consultations to approximately 170 patients. Evaluation of training indicated that there was a considerable load in terms of new knowledge and skills. Evaluation of delivery found clinicians could adapt the model to individual patients while maintaining a high level of fidelity to its core components.

**Conclusion:** REAL is a teachable consultation model addressing specific clinical communication issues for people with persistent physical symptoms.

**Practice Implications:** REAL enables clinicians to explain persistent physical symptoms in a beneficial way.

### 1. Introduction

Physical symptoms, which are disproportionate to underlying pathology, are common in both generalist and specialist healthcare [1–4]. Persistent physical symptoms (PPS) may occur in isolation (e.g. dizziness) or in combination, often in specific syndromes (such as fibromyalgia or irritable bowel syndrome) [5]. While historically symptoms have been viewed in a binary fashion (“medically explained” versus “medically unexplained”; organic vs functional) [6] there is increasing evidence that all symptoms share “central” neuropsychological processes [7,8]. Additionally, many people with PPS have both peripheral and central components to their symptoms. We use the term PPS because it is favoured by patients [9] although recognise that other terms are commonly used including medically unexplained symptoms [6] and

functional disorders [8]. Regardless of the labels used, PPS are common, impair quality of life [10], and account for substantial health service costs [11].

Clinical consultations about PPS are often problematic [12]. Clinicians struggle to explain PPS effectively [13,14] and patients commonly feel dismissed, unheard and experience stigma [15]. In the past there has been an emphasis on explanations which ‘re-attribute’ symptoms to psychological distress [16], however this has been shown to be ineffective [17,18]. A recent meta-ethnography framed the problem in terms of relational and epistemic congruence in the consultation [12]. Relational congruence implies that the doctor and patient are working together to as a doctor and patient should (i.e. within a supportive relationship), while epistemic congruence implies that there is a matching-up of different forms of knowledge (patient experience of their body and

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doctor's models of disease). Johansen and Risor argue that "medically unexplained" symptoms make epistemic congruence impossible, thus leaving the doctor to focus on relational congruence. This means that a key step in the process of diagnosing and interpreting symptoms is omitted. There is a clear need for interventions to improve clinical communication and consequently patient outcomes for PPS [19].

We, and others, have argued that PPS can be explained sufficiently to achieve epistemic congruence (i.e. to make sense to the patient in a non-judgemental way which facilitates therapeutic action)[20–23]. If this is achieved, then two things can happen. First the patient has sufficient explanation to reduce their need to find further reasons for their symptoms (either by focusing on their symptoms to find patterns or by seeking further medical tests and opinions) and second that explanation can lead to a rationale for engaging with appropriate forms of self-management. This model of explanation was developed through preliminary studies [24,25] with a view to a large pragmatic clinical trial [26]. In constructing the training and delivery materials for the trial, we sought to develop an easily memorable model for ensuring both relational and epistemic congruence in clinical consultations. That model has four components: Recognition, Explanation, Action and Learning.

The aim of this paper is to briefly describe the model, evaluate our experience of teaching it in a clinical trial and then to examine how the model was used by clinicians within the trial.

## 2. Material and methods

### 2.1. Overview of the REAL model and Multiple Symptoms Study 3

#### 2.1.1. REAL model

The model comprises 4 components: Recognition seeks to validate the patient's experience and emphasise the clinician's recognition of the problem as legitimate. Explanation involves negotiation of explanations for symptoms in ways which integrate brain and body without necessarily implying psychological cause. Action comprises the clinician and the patient negotiating one or more self-management strategies (some taught by the clinician). Learning jointly reviews and modifies the preceding three components as necessary, with the ultimate aim of patient self-management.

#### 2.1.2. The symptoms clinic intervention

The REAL model was then embedded in a structured intervention – the Symptoms Clinic. This was designed to be delivered by specially trained GPs working in an extended-role model (i.e. using enhanced clinical generalist skills in a setting that extended beyond their usual general practice premises and patients). The Symptoms Clinic consists of up to four consultations; an initial long consultation (approximately 50 min) followed by up to three medium length consultations (15–20 min) approximately every two weeks. Clinicians had flexibility to increase the gaps between sessions if required. The Symptoms Clinic was originally designed for face-to-face delivery but due to the Coronavirus pandemic it was also delivered – without substantial changes to the content – using a secure video-consultation platform or, in a small number of instances, by telephone.

#### 2.1.3. Multiple Symptoms Study 3

Multiple Symptoms Study 3 (MSS3) is a pragmatic, multi-centre, randomised controlled trial to assess the clinical and cost-effectiveness of the Symptoms Clinic, delivered by specially trained GPs to patients not registered with their practice [26]. The study compares the Symptoms Clinic intervention plus usual care with usual care alone and included an embedded process evaluation that involved multiple forms of data collection [27]. 7 GPs were recruited and trained to deliver the Symptoms clinic: one completed training but did not see patients in the study and one withdrew due to other commitments after only a few months. GPs were recruited through a competitive process of application

and interview and underwent training before delivering clinics. Patients were identified through their own GP practices using computer searches and mailouts with subsequent recruitment and enrolment carried out by a central research team. 354 participants were recruited and individually randomised. The primary outcome is the self-reported PHQ-15 at 52 weeks post-randomisation. Ethics approval for MSS3, including the process evaluation described here was obtained via Greater Manchester Central Research Ethics Committee (Reference 18/NW/0422). The study enrolled participants between December 2018 and December 2021 (with a hiatus in 2020 due to the COVID-19 pandemic). Data entry was completed in March 2023 and analysis of effectiveness and cost-effectiveness are ongoing.

### 2.2. Training and supervision of GPs in REAL and the Symptoms Clinic

Training for the study comprised a total of 10 half-day sessions.

- Two whole days (non-consecutive) of structured training at the University of Sheffield. This involved substantial didactic teaching about current understanding of PPS and of consultations involving PPS. There was some use of peer role play in this training, but the primary focus was knowledge transfer. The content of the two days are summarised in Table 1. The training sessions were backed up by a written intervention manual provided to the GPs. The manual contained current information about persistent physical symptoms, advanced consultation skills – particularly focused on personalising explanation - and examples of explanations (Appendix A contains the table of contents of the manual).
- Four half day sessions during which the GPs saw patients in their own practice using different elements of the symptoms clinic model and received supervision from their local investigator (CB or VD)

**Table 1**  
Summary of content for the first two days of training.

DAY 1	The consultation and persistent physical symptoms
Introduction	Introductions of participants, including their experience, the assets they bring to the work and their particular questions and concerns An introduction to the study: the problem posed by lack of explanation; The REAL model (Recognition, Explanation, Action, Learning)
Communication	The consultation and its challenges: listening to patients who have not been heard or have difficulty being heard; the importance of patient identities (as individuals and as people with a condition) Hearing and responding to emotional cues: maintaining the patient's integrity; handling anxiety and depression without making them the primary focus.
Diagnosis	Positive features: recognising and eliciting positive features of functional symptoms Safety: the risk of unrecognised pathology, listening for pointers away from functional symptoms
DAY 2	Explanation of symptoms and action to manage them
Understanding explanation	The importance of explanation; framework of explanation types and content
Symptoms Science	An integrated model of symptom perception: brain-body signalling and symptom perception Multiple causal factors: comorbid diseases; genetic / epigenetic; early life adversity; neural plasticity; interoception; autonomic; immune; psychological Mechanisms of symptom generation or persistence: somatic; central sensitisation; energy conservation; dissociation; threat-alarm; attention & amplification.
From science to explanation	Converting science into explanation – using the facts, causes & mechanisms framework Negotiating explanations, recognising obstacles and ways of getting round them
Action to manage symptoms	Symptom management techniques: teaching and discussion of simple symptom control techniques including relaxation, breath control techniques and sensory grounding.

Towards the end of these sessions GPs recorded one or more consultations either with an actual or simulated patient.

- Two further half-day training sessions at their local centre to consolidate knowledge and learn trial procedures.
- Satisfactory completion of training was assessed by at least one clinical investigator (CB or VD) assessing one or more consultation recordings to assess adherence to the treatment model.

In addition to the training before beginning intervention delivery, participating GPs received regular supervision from one either CB or VD. This was approximately every one to two months due to relatively low recruitment rates in the early stages of the study.

Due to changing circumstances and delays initiating one of the sites following training, one GP took no active part in the study and one withdrew after seeing only a few patients.

### 2.3. Evaluation of training

The study GPs were interviewed shortly after they had begun seeing patients by a qualitative researcher not involved in the delivery of the intervention. These one to one semi-structured interviews included reflection upon their experiences within training, and how they had implemented what they had learnt into delivering the intervention. Interviews followed a topic guide which was designed to be used flexibly. The GPs were then re-interviewed approximately 6 months later, when they had become more established in delivering the intervention.

### 2.4. Evaluation of delivery of REAL and the Symptoms Clinic

#### 2.4.1. Recording and transcription of Symptoms Clinic consultations

All Symptoms Clinic consultation were audio recorded (including those delivered using the online platform) and a sample of 144 out of 586 (25%) of consultations were transcribed. A further 27 consultations were analysed directly from the recording (for fidelity testing only). This resulted in a total of 171 out of 586 (29%) of consultations available for analysis. Transcription was managed so that approximately similar numbers of participants per clinician were available for qualitative analysis.

#### 2.4.2. Fidelity of delivery

Fidelity to the intervention was assessed from consultation transcripts and recordings using a scoring matrix comprising a series of statements regarding each element of the REAL model. For each patient the presence of each item was evidenced by an extract from the consultation transcript and the number of the consultation in the series in which it first appeared. A traffic light system was used: green indicated that an item was clearly present, amber that it was possibly present, and red that it was absent.

#### 2.4.3. Consultation content

Following fidelity assessment, 35 transcribed consultations sets were also used for qualitative analysis of consultation content. These were sets of 1, 2, 3 or 4 consultations, depending on how many sessions the patient attended.

#### 2.4.4. Patient interviews

19 participants from the Symptoms Clinic arm of the trial were interviewed about their experience of the trial. Interviews took place in person or remotely and were held at different times from enrolment (either after session 1 or after sessions 3 or 4) in order to capture initial and later perceptions of the intervention. Participants whose data was analysed for fidelity were not invited to interview to ensure that the researcher was blind to consultation content while conducting and analysing interview. Interviews lasted between 12 and 43 min and were transcribed for analysis.

### 2.5. Qualitative analysis

We used an inductive thematic approach to analysis of consultation content and participant interviews. This drawing on sensitising concepts around experience, language, culture and stories, in order to maximise engagement with this varied dataset. Initial codes were developed and then aggregated into themes in an iterative process by the qualitative researcher (KF). They were then discussed in regular analysis meetings with three other members of the team: a GP and two sociologists (CB, TS and MG). Initial meetings focussed on discussion of singular cases (consultations, transcripts or interviews) while later meetings moved on to reviewing important themes. This paper takes a relatively simple descriptive approach to the data in order to demonstrate what was delivered in the intervention and how it was received. Interviews and initial coding were conducted by KF and analysis meetings included KF, CB, MG and TS.

## 3. Results

Data was analysed from interviews with 5 GPs (10 interviews), 49 consultations (from 15 patients) and 19 patient interviews.

### 3.1. Clinician experience of training

#### 3.1.1. Initial teaching sessions

Study GPs had substantial prior experience of clinical practice and of training others in consultation skills. They had also gone through a competitive recruitment process to take part in the study. Despite this, they described approaching the study with apprehension.

The initial sessions were deliberately information-heavy and GPs perceptions reflected this.

“I felt like, especially after the first couple of sessions, I kind of had a lot of head knowledge about the theory, but I still didn't know what I was going to do with that” (GP01).

All GPs valued the practical aspects of the training, such as role-playing, and while this was seen as uncomfortable to some degree, it was seen as necessary, and the GPs would have appreciated more of this:

“I think there could have been more kind of erm discussion or role playing, we did a little bit of role play, which everyone, everyone huffs and puffs about, but it's always really good and it's always really, really instructive doing role play” (GP03).

The training used peer-to-peer role play, and part of the rationale for this was to enable GPs to experience the patient role. In their feedback, however, GPs did not acknowledge this. Instead they suggested that role play might have been more effective had they been done more as simulated consultations, for example being acted out by facilitators (which we also did to some extent) or others, rather than by GPs themselves.

At the end of the training, some GPs wanted to have more practice on actual patients before the clinics started. They found that the intervention manual made more sense once GPs started working with patients, which again suggests that more practical experience as part of the training would be useful.

“sometimes a lot of talking, and a lot of reading, it's still difficult to apply until you can actually do it and reflect on it” (GP05).

However finding patients in the training phase was difficult. GPs were asked to recruit patients from their own practices in order to gain experience in using the consultation techniques and applying the taught knowledge. They found making choices about who to invite and actually making the invitation quite difficult. They also reported difficulty in placing an actual patient in the role of a training example. Several felt it would have been easier with either existing and experienced training patients (for instance those who are involved in undergraduate medical

education) or simulated patients. Despite the GPs experience, practicing new techniques on real patients with real issues felt uncomfortable.

“I guess erm it perhaps would have been easier to have had a couple of simulated clinics” (GP02).

### 3.1.2. Putting things into practice

Making the transition from learning about the intervention in theory, and delivering it to patients in practice, was again approached with some apprehension:

“it’s - again, something that sounds really easy on paper and it’s much harder to actually put it into practice” (GP01).

This was exacerbated by delays in patient recruitment, which meant that the gap between completed training, and seeing the first trial patient, was larger than intended. However, GPs were surprised at how well their first few consultations went:

“you know like I had it very clear in my mind how I was going to structure the consultation based the training...so I had a clear structure in the back of my mind, so I felt, I didn’t feel you know I didn’t feel unprepared at all, quite prepared for it [right] and I was certainly surprised how well it went” (GP03).

Each GP had prior skills which influenced how comfortable they felt delivering different aspects of the intervention although all found the explanation components unfamiliar and needed to rely on explanations within the manual more. One GP felt that the interventions she suggested were shaped more by her confidence in explaining them, than their appropriateness to the patient. After a few patients, the general principles of the intervention would ‘percolate through’, giving the GPs more confidence that they could deal with the range of issues that patients may present with. Delivering the explanations became more natural with practice.

“you’ve got a set script thquaq you kind of learn off, kind of you can just say, there’s some common themes and some common principles running through” (GP02)

The intervention was taught to be delivered flexibly, but GPs found it difficult after first receiving training to find a balance between following the example explanations given in the manual, and making the explanations personalised to the patient. However, most of the GPs found the manual to be a useful guide to the consultations, particularly in the early stages of delivering the intervention:

“So I found the [session by session] instructions in the manual helpful, when this is what we expect of you in the first [session] is just to let them listen really and start to think around explanations. And so that was good because I didn’t feel like I’d got to do too much out of my comfort zone til I’d got that bit done then the next consultation I could do a bit of reading before I did that one, so chunking it out was quite helpful” (GP05)

While initially the GPs saw the examples in the manual as things to be learned and delivered, over time they moved to using it as a resource and set of skills to be used flexibly and adaptably so as to personalise the consultations for each particular patients, akin to a form of “improv”[28]:

“with the current ones it felt much better [yes] or is it that I’ve just got used to and I’ve got used to you know the explanations will get better every time you give them [ok] erm but it feels more natural [yes] to do it, [yes] that way” (GP03).

### 3.1.3. Unexpected benefits

GPs appreciated the opportunity to study this aspect of practice in more detail, and felt that the skills they had learnt not only helped with the study patients, but also with dealing with similar patients in their

daily practice:

“I no longer would view those patients as you know kind of heartsink patients” (GP01).

More specifically, GPs felt more able to engage in dialogue with the patient, rather than delivering purely didactic explanation, and better able to judge whether a patient was likely to be receptive to suggestions.

GPs also valued being part of the trial and feeling part of a ‘community’ of GPs who were delivering the intervention. They found discussions between themselves to be very useful and would have liked the opportunity to continue meeting up throughout the trial.

“to be able to kind of really bounce ideas off each other, so I think it was really well done” (GP02).

GPs talked about noticing an improvement in their ability to talk with patients about symptoms, alongside increased confidence that they were handling the issues in the best possible way. This was grounded in the intervention training but also supported by ongoing feedback and supervision, that related to their experience with actual patients:

“the most useful bit was kind of having supervision on patients that I’ve seen” (GP03).

Receiving clinical supervision is not a normal part of GPs’ work but it was clearly valued in this extension to their usual role. Benefits appeared to arise through feeling authorised and backed-up, and being part of a community of practice committed to working in this way with patients with PPS.

At the first interview, one of the GPs was notably less confident and more critical than the others. This applied to both the training provided and her own competence in delivering the intervention. However, fidelity checking and supervision suggested that this GP was as competent as the others in delivering the intervention. Furthermore, in the 2nd interview, this GP’s views were much more aligned with the other GPs.

## 3.2. Checklist assessment of fidelity

**Table 1** summarises the assessment of fidelity from 15 participants representing 3 randomly selected cases for each of the 5 GPs who were substantially involved in the study. The colour indicates the score for each element (green for good, orange for borderline, red for wrong/harmful, and blue for absent). Cells are blank where the patient did not attend enough sessions to receive the element. The number refers to the consultation number in which the element was first observed, e.g. active listening was always present from the first consultation, whereas teaching often did not occur until the second consultation.

## 3.3. Qualitative assessment of model delivery

### 3.3.1. Recognition

GPs made an effort to explicitly recognise the reality of the symptoms that the patient was experiencing, and reassuring them that it wasn’t ‘all in their head’:

Oh, it’s not in your brain, it’s not making it up, it’s not you, it’s not all in your head, which are words people always say. You’re feeling it as a pain, it is a pain, it is a true pain.

(GP02 from second consultation with G03002).

The GPs recognition of the symptoms as objectively true was sometimes contrasted with the patient’s previous experience with the medical profession. When interviewed about the intervention, patients talked about feeling ‘believed’ by the intervention GP, in a way that they might not have experienced with medical professionals previously:

The doctor I saw was great. She was really understanding and she really tried to erm, say to me I don’t think you’re making this, any of [yeah] this up in any shape or form.

(S10048 Interview).

In the patient interviews, we found that patients had experienced this recognition as something different from previous medical encounters and did not have to work to prove their legitimacy:

because obviously she understands this sort of stuff better, it didn't feel like she was being judgemental. Sometimes you go to the doctors and you feel like it's 'oh, she's here again' ... but they don't realise that you... really are struggling with your symptoms and ... with these kind of invisible illnesses you almost feel like you've got to justify yourself.... I just felt like she took that as read, kind of thing, rather than ... you're up against it from the beginning

(S19054 Interview).

### 3.3.2. Explanation

GPs would use a combination of general and patient specific explanations. They would often begin with a more general explanation, and move on to applying it specifically to the patient:

so you get these long term symptoms, our body's designed to heal itself and get better afterwards, but we see quite a lot of people with persistent symptoms that the normal pattern doesn't happen [yeah] and something has been stimulated and triggered. Your central nervous system can moderate the degree to which you feel pain [yes] like you said that you feel pain differently to how you used to feel it, [yes] and that can often be connected to they call it central sensitization

GP04 in 1st consultation with D02018.

They would also check back regularly with the patient to ensure understanding:

so it's not working the way that it was designed to work even though all the parts are how they should be when you just look at them individually. [Right]. Does that make sense? [Yeah]

(GP02 in 2nd consultation with S22068).

The checking back would not only encompass understanding, but how the patients were responding to the explanation in general:

D: I think it's quite feasible that, that all ties into the same thing [nerves yeah] that these nerves are [yeah] malfunctioning [yeah ok] how does it feel to hear that?

P: yeah, yeah I mean it's the first time anything's made sense in a long time.

GP03 in 2nd consultation with G01042.

In the patient interviews, the patients were asked to reflect on the explanations they received as part of the intervention. Many patients described this as the first time they had received a clear explanation for their symptoms. For some there was uncertainty whether the new information they received reflected a difference in their clinician's knowledge or in the duration of the consultation:

I just thought they had a better understanding. Whether that's not right and whether the other doctors had an understanding but didn't put it across as well maybe. Because it didn't have the time you know. It didn't get the diagrams and the explanation of the central nervous system and all that sort of thing. So I think it is time.

(G22054 Interview).

Most patients felt that the explanations they received gave them a better understanding of their symptoms and were delivered at a level that was easy for them to understand. For some patients, the explanation went beyond their symptoms, to a more profound transition in understanding:

It suddenly made me think of myself as much more whole than even I had imagined.

(S10004 Interview).

### 3.3.3. Action

In their training, GPs were given specific breathing, relaxation, and sensory grounding techniques to suggest to and teach the patients. The training also covered increasing activities, finding information, social support, and dealing with the medical profession. In supervision, further techniques were rehearsed and then implemented including activity, rest and sleep management, simple grief work, mindfulness, anxiety and mood management techniques. Clinic GPs were provided with study-specific leaflets outlining these techniques which could be shared with the patient.

The breathing and relaxation techniques were the most common suggestions made in the consultations:

So the, the activities that can be worth thinking about introducing [aha] are based on what we've talked about before which is activating the parasympathetic nervous system so you know, allowing our systems time to slow down and recuperate; rest. So, one other thing to try is maybe introduce a short regular relaxational breathing practice into your evening routine, just to send your system a message that it's safe

(GP02 in consultation with S17056).

In addition to describing actions and giving patients written information, GPs often involved the patients in practical demonstrations of these techniques. The GPs training encouraged them to link strategies suggested to the explanation given to the patient, and this was usually the way that GPs would begin the discussion:

the other things that we can do is because this is all set up on the fight or flight thing, you know there's danger, we need to be alert all the time [yeah yeah], something that we can do is try and break that cycle by convincing the brain that actually you're more relaxed, see what I mean? So and that would be...either using relaxation techniques or breathing techniques.

(GP01 in 2nd consultation with S20002).

Even when making quite specific suggestions, GPs would frame the suggestion tentatively, being careful to keep the patient in control of the actions agreed upon:

So, I, I just wonder if we could do a little bit of thinking about whether setting a goal of beginning to not pay quite so much attention to the pain when it happens and beginning to ignore it

GP02 in 3rd consultation with S04024.

The patients saw the actions suggested in the intervention as distinct from other medical encounters. For some patients, hearing this was new to them, and they questioned whether the strategies would work:

"when I first came home I was thinking, is this really going to work, you do [yeah] people can tell you different things, you do, you question it don't you"(G14023 Interview)."

Some patients had done similar things to the strategies suggested by the GPs before, but had seen these as a way to address stress, rather than directly impacting upon the symptoms:

"He also suggested breathing exercises, which I hadn't done before. I had some mindfulness, but that was more for stress and I hadn't really thought about it for to help my stomach and everything" (G22054 Interview).

Importantly, many patients felt that the strategies gave them the power to do something for themselves, rather than relying on medication:

"I need to be able to control what's happening to me myself and I think it helped in that respect, you know, giving me back control to a certain extent" (S22013 Interview).

While some participants were more neutral about the strategies suggested, only one patient rejected the suggested strategies outright as

inappropriate for them.

### 3.3.4. Learning

Patients noted a variety of ways in which their learning throughout the intervention had impacted upon their experience of symptoms. Some of these were clearly measurable, such as being able to reduce medication:

Because I would wake up in the morning and think oh I'm really sore, I best go take my medication [yea] so I'm functional by the time she wakes up, whereas for this I was doing the, even the short guided meditations or the body scan meditations or whatever, and then when I finished those I would find that I didn't feel as painful, so I would maybe just take paracetamol and then see how I got on.

Patient G01042 with GP03 in 4th Consultation.

Other impacts were not so easy to measure, but equally significant, for example, one patient's new-found acceptance of their condition as something to be worked with rather than against:

D: what do you think you've learned, what do you think are the things you are taking into the future from this?

P: I think a couple of things. Firstly that I can't just decide that I'm not going to have it anymore. Also that that's not going to work, just having a few weeks off work and being good for little while, do this, just chilling out, isn't going to cure it, it's going to come back. There's limits that you need to manage... and I'm really not good at that. So that's been hard to accept, that I can't power through it and I can't fix it just by deciding that I won't have it. Erm and in my normal techniques will actually work against, you know my normal coping techniques will work against what it, what it is. So that's been hard to accept that I have it.

(Patient G03002 with GP 03 in 4th Consultation).

This suggests that, while the illness still may not have a clear definition or solution the patient has found a different way of relating to the situation.

Others described a renewed commitment to valued activities, such as this patient who was cautiously getting back to playing cricket:

Well I've been playing a bit at home with the kids. As well like just because obviously don't want to straight away jump in at the complete deep end. I don't think that's going to be the wisest idea. Yeah the weather's been nice as well recently. So you know we have just been making the most of that. The kids love it as well. So yeah, it's just kind of slowly getting back into you know them kind of things.

S01027 with GP01 in 2nd consultation.

Most patients reported at least some change, in actions or thoughts, which could potentially be the beginning of a path to living well with symptoms, or even resolving symptoms. For a few patients, larger changes were made during the course of the intervention, for example, GP04 explained how the intervention had affected one of her patients:

the next time she came back and said 'I listened to what you said and I stopped doing that and now I'm now looking forward to the future, I handed in my notice in at work I've joined a walking group'. I was like 'blinking ink!' This is kind of unbelievably transformative for her.

GP04 Interview.

While the examples above are positive, there were patients who did not appear to find the intervention helpful or dropped out. Where this happened, it could be traced back to the recognition or explanation elements. While most conversation about explanation involved GP and patient moving to a point of agreement, there were examples where this did not happen. In the following extract, the GP fails to engage with the patient's description of how awful she felt, which was an opportunity to show recognition and from there the accounts failed to converge.

P: About 6 weeks ago. I went to Manchester and I went to a few gigs

D: Oh right, that's good. And how was the fatigue through that, or did you?

P: I was terrible afterwards. I was all right at...

D: But you enjoyed it? [Yeh] Okay that's good. Is that something you try to do often?

(GP04 with patient G10026).

In contrast, where recognition had occurred, explanations could be listened to and learned from:

"If I'd gone in for like a normal ten minute appointment and my GP had said try mindfulness, I would've said yeah OK, just refill my prescription please...the way that you'd explained it with medical evidence as well, cos I'm a sciencey person, has been really helpful, so it's made me want to commit to it"(S17068 Interview)

## 4. Discussion and conclusion

### 4.1. Discussion

#### 4.1.1. Summary of main findings

We report on a substantial intervention, combining expert clinical generalist skills, extended consultations, and recent knowledge about the science of persistent physical symptoms and the communication challenges that arise in dealing with them. The intervention has been manualised and can be taught but requires substantial time and supervised rehearsal before it can be used by experienced GPs. Once taught, and with regular supervision, the intervention can be delivered with fidelity of core components and flexibility of approach to individual patients.

#### 4.1.2. Strengths and limitations

The main strengths and limitations of this research both come from it being a formal process evaluation within a large clinical trial. Teaching and supervision benefitted from the rigour of the trials process and the way that clinics were set up specifically for the trial ensured that time was protected. Recordings were a routine part of the intervention and so extensive detailed content was available for analysis. While these make the findings more scientifically robust, they may limit the generalisability of the evidence to less structured settings. The number of GPs trained and delivering the intervention was relatively small and they were selected for their skills and experience. Once they had worked through the taught material, study GPs displayed a level of creativity in using it in consultations that may not be present in all GPs. However, despite prior experience, all found the training and initial consultations to be challenging in ways that suggest they were actively taking on new knowledge, skills and ways of thinking about the problem rather than simply using existing skills in a different setting.

This study faced the challenge of developing an intervention that could be both flexible (so as to be personalised to each patient in a heterogeneous group) but have measurable fidelity in order to demonstrate generalisability of the clinical trial. The approach here of evidencing a set of prespecified criteria without specifying their exact form or timing appears to have been effective and can be used for future supervision of similar interventions.

The evaluation provided learning points for future training, in particular about role play. If running this again, we would include more of it and the use of either actual or simulated (actor) patients. While the study was designed to test the REAL model in a tightly defined clinical trial, the knowledge and skills used appear to be transferrable to shorter "ordinary" GP consultations. Hence several of the GPs described ways in which ways of thinking about symptoms and explanations for them had diffused into their everyday clinical practice.

4.1.3. Relationship to other research

This research is unusual in developing and evaluating a model of extended medical consultation for persistent physical symptoms. Most previous studies have sought to manage the problem within ordinary GP consultations or by referring to specialist psychotherapists [17,18,29]. Brief interventions by GPs in ordinary consultations are unlikely to be effective [17,29]. Two North American studies of more intensive primary care based interventions showed improvements in mental health [30,31]. These used a collaborative care model in a multi-faceted intervention and were longer than the four-session intervention described here. While specialist psychotherapy clearly has benefits for some patients, many find it problematic that doctors' failure to provide any other explanation when referring for psychological therapy implies that there must therefore be a psychological cause. That does not mean that the REAL model avoids the way social and emotional factors can affect the experience of persistent physical symptoms. Rather, by bridging the epistemic gap [12], the REAL model opens up the possibility of talking about the social and emotional correlates and consequences of symptoms without automatically implying that they must also be involved in the causation of those symptoms [23].

4.2. Conclusion

REAL is a teachable consultation model which addresses specific clinical communication issues for people with persistent physical symptoms.

4.3. Practice implications

GPs can be taught to create personalised explanations for persistent ("unexplained") physical symptoms using the REAL framework. While

this teaching involves acquisition of substantial new knowledge and skills, the resulting consultations are highly acceptable to patients and provide a rationale for additional ways of managing symptoms.

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CRediT authorship contribution statement

**Kate Fryer:** Investigation, Analysis, Writing – review & editing. **Tom Sanders:** Methodology, Analysis, Writing – review & editing. **Monica Greco:** Methodology, Analysis, Writing – review & editing. **Cara Mooney:** Methodology, Project administration, Writing – review & editing. **Vincent Deary:** Conceptualisation, Supervision, Writing – review & editing. **Christopher Burton:** Conceptualisation, Supervision, Writing – original draft, Funding acquisition.

Declaration of Competing Interest

The authors declare no competing interests. Competing interests are defined as those potential influences that may undermine the objectivity, integrity, or perceived conflict of interest of a publication. Interactions that occur within 5 years before submission date of an article are pertinent.

Appendix (A)

GP	1	1	1	2	2	2	3	3	3	4	4	4	5	5	5
Consultations checked	1,2,3,4	1,2,3,4	1,2,3,4	1,2,3,4	1,2,3,4	1,2,3,4	1,2,3,4	1,2	1,2,3,4	1,2,3	1	1,2,3,4	1,2,3	1,2,4	1
Recognition	Active listening	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	Picking up on cues	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	Impact	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	What it feels like	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	Patient concerns	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	Validating patient	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Explanation	Transition to explanation	2	1	1	1	1	1	1	1	1	1	1	1	2	
	Type / content	2	1	1	1	1	2	2	2	1		1	2	2	
	Delivery / negotiation	2	1	2	1	1	1	2	2	1		2	2	2	
	Linkage to explanation	2	2	2	1	1	2	2	2	1		1	2	2	
Action	Action type / content	2	2	2	2	1	2	2	2	1		1	2		
	Teaching	2	2	2	2	1	2	2	2	1		1	2		
	Deployment / activation	2	2	2	2	1	2	1	2	1	1	1	2		
Learning	Ask about learning	3	3	3	2	4	2	4		3	3		2	2	4
	Consolidating	3	4	3	2	4	3	4		3	3		2		4
	Wrapping up	3	4	4	2	4	3	4		4	3		4		4



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