Patient autonomy in the consultation: How signalling structure can facilitate patient-centred care

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A B S T R A C T

Objective: To identify types and functions of doctors' verbal signalling behaviours used to share consultation structure with patients.
Method: Doctors' verbal utterances signalling what would happen in the consultation were identified by two independent raters from transcripts of 78 simulated consultations from a postgraduate examination for physicians. In total, 974 behaviours were categorised as *informing, inviting* or *instructing*. Principles adopted from Speech Act Theory and Conversation Analysis were used to examine their function from their literal meaning and use in context.
Results: Signalling behaviours to *inform* were most frequent, particularly 'signposts', with less informative signalling behaviours also found ('posts without signs' and 'signs without posts'). Behaviours to *invite* involvement offered limited choice. Doctors also *instructed* the patient in what to do (behaviour) or not to do (emotion). Behaviours signalled more 'micro-level' changes than broader consultation aims. Signalling behaviours carried roles beyond their literal meaning ('hyperfunctions') and were combined ('stacked'), often seen deflecting the conversation away from patient concerns.
Conclusion: Doctors use a variety of verbal signalling behaviours with multiple functions. As well as sharing information, these behaviours regulate patient agency in the consultation.
Practice implications: Doctors' signalling behaviours may play an important role in facilitating or inhibiting patient autonomy.

1. Introduction

This paper explores how patient autonomy may be supported or undermined in doctor-patient interactions through sharing information about what is to happen in the consultation. Autonomy is a crucial ethical and legal principle acknowledging the right of individuals to make choices about healthcare [1]. The medical consultation has a central role in enabling patient autonomy through clinicians and patients working in partnership to achieve a shared understanding of the problem and agree a way forward [2–5]. Patient-centred communication facilitates this by empowering the patient to take an active part in the consultation and express needs, preferences, values and concerns [6–10]. This approach aligns with evidence linking an active role in healthcare with positive health outcomes [11–13]. An organised structure for the medical consultation that is clear to the patient is key to facilitating patient agency, through enabling the patient to plan their contribution and articulate individual needs [14,15].

Strategies to share the organisation of the consultation with patients feature consistently across international educational guidance for training and assessment [14,16–24]. Clinical communication models recommend verbal strategies to negotiate a shared agenda, as well as more 'micro-level' tasks, such as signalling transitions between consultation stages or topics. Strategies include those that primarily *inform* the patient (e.g. *let the patient know what to expect* [17]) or encourage patient *involvement* (e.g. *invite the patient to contribute thoughts, ideas, suggestions and preferences* [21]). However, tension between competing priorities is evident, even in educational models, suggesting a mismatch between doctor and patient agendas (e.g. *with a very talkative patient it may be necessary and effective to interrupt the patient* [18]). This suggests another role for these verbal signalling behaviours, to *instruct* the patient to follow the doctor's plan for the consultation. The varying aims of these strategies are reflected in diverse terminology in educational models (e.g. *signpost, indicate, announce, invite, direct, forecast, outline, frame, negotiate, facilitate, plan, structure, prioritise, share, summarise, categorise*).

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Strategies that share information with the patient about the consultation apply across all medical settings and specialities. Observational research has studied various clinical settings, as well as simulated consultations in assessment. Verbal signalling behaviours have been found that highlight agenda-setting [25,26] and orient patients to the next stage or topic [27]. Signalling behaviours have been observed that invite patients to contribute topics, or simply inform patients about what to expect [28]. Signalling can be used in advance of changes, for example, bridging the transition between topics, when introducing sensitive topics like sexual history [29]. Other signalling occurs whilst changes are happening, taking the form of online commentary [30]. Doctors have also been observed using verbal signalling behaviours to move away from the patient agenda, such as using small talk to change the topic from psychosocial issues raised by the patient [31].

The flow of conversation can therefore be controlled through using these signals [32]. This suggests that verbal signalling behaviours used in structuring the consultation may play an important role in fostering, or indeed inhibiting, patient agency. However, there has been little systematic research examining how doctors use verbal behaviours to signal consultation structure, what roles these behaviours play, or how they align with strategies proposed by international educational guidance. This highlights a pressing need for research to explore how doctors use language to facilitate or inhibit the patient agenda.

Language can be examined through a variety of lenses. Whilst the literal meaning provides some information about the role of an utterance, identifying its function requires an appreciation of the social context of the conversation and the roles of the participants. Speech Act Theory [33] provides a framework through considering the form the verbal behaviour takes (literal meaning) and its social function (pragmatic meaning). For example, if a doctor says 'can I ask you a few questions?', it is understood that the doctor is signalling an intention to ask questions, not making an enquiry about their own capability to do so. According to Speech Act Theory, speech does more than just describe things or situations; it also *does* social actions that transform the social world in some way; for example, a judge pronouncing someone as guilty transforms their identity [33]. Exploring the function of communication requires more than just an understanding of the words and grammar used by a speaker, it requires an understanding of what speech act the speaker intends to convey; for example, whether a description of a symptom is just describing or also expressing a concern [34].

Moreover, the social uses of language are complex; there may be more than one layer of meaning signalled by an utterance. Examining this requires a framework that takes into account the context in which the utterance occurs. For example, approaches such as Conversation Analysis [35,36] have considered how social actions are achieved during talk within an interaction. Taking inspiration from this, the principle that *sequences* of social actions occur through a process of turn-taking between participants can be applied to put into context how doctors use signalling utterances. In Conversation Analysis, social actions occur in pairs, where the second action is responsive to the first. The responsive action needs to be 'relevant' to the first, in order for it to be understandable; for example, an acceptance to an invitation would be relevant, but a 'goodbye' would not [37]. Adopting this principle, when a patient expresses a concern, one relevant response from the doctor would be to acknowledge that concern. Thus 'can I ask you a few questions?', while being an initiating action by the doctor, could additionally be considered a responsive action to a patient's concern, if the patient had said 'I'm really worried' immediately before it.

This study presents an innovative approach to systematically examining verbal behaviours used by doctors to signal the structure of the consultation to the patient. Specifically, it aims to address the following questions:

- What verbal behaviours do doctors use to signal what is to happen in the consultation to the patient?
- What roles do these verbal behaviours play in the consultation?

2. Method

2.1. Design

This article reports an observational study examining doctors' verbal communication signalling *what will happen in the consultation*, identified from verbatim transcripts of simulated consultations from a postgraduate medical examination.

2.2. Participants

The participants were 78 doctors: 51 % (N = 40) women, with a mean age of 31.7 years (SD 5.3), 46 % (N = 36) with a primary medical qualification from the United Kingdom. Participants were physicians (doctors in secondary care focusing on non-surgical treatment of conditions) taking the Membership of the Royal Colleges of Physicians of the United Kingdom Practical Assessment of Clinical Examination Skills at one United Kingdom examination centre, during one two-week period in 2012 [38]; 76 % of 103 examination candidates participated: 89 consented, 78 were successfully recorded.

2.3. Setting

The postgraduate assessment is a two-hour practical examination of clinical skills and knowledge, part of the MRCP(UK) Diploma that qualifies physicians to enter specialist training [39]. Participants were video-recorded with written consent in a 14-minute consultation with a simulated patient representing a first general medical outpatient consultation ('History-taking station'). Trained actors portrayed the patients. The consultation did not require a physical examination. The marking criteria comprised five domains (*clinical communication, clinical judgement, differential diagnosis, managing patient concerns* and *maintaining patient welfare*).

2.4. Measures and procedure

In the absence of an established measure to systematically examine doctors' verbal signalling behaviours, an original methodology was developed. Coding criteria were devised to identify *doctors' verbal behaviours that explicitly signal changes in the consultation,* through *informing, inviting* or *instructing* the patient (Table 1).

The functions of the behaviours were identified using a two stage process. Taking inspiration from Speech Act Theory [33,34], the pragmatic meaning of the behaviour within the doctor's turn was identified from its content and what immediately followed. For example, 'Well I think I've got enough history now' followed by the doctor moving to the next consultation stage was categorised as signalling a phase transition; 'And can I just go . . . symptom by symptom?' followed by a question was categorised as signalling questioning. Secondly, the principle of social actions being conducted within sequences of talk from Conversation Analysis [35–37] was adopted to examine the behaviours in the context of the doctor-patient talk surrounding the signalling behaviour. Through this process, any further functions of the signalling behaviour were identified. For example, 'Yeah, [patient name] . . . after listening to your history . . . first of all, I would like to summarise your problems' was categorised as signalling a transition to summary, when considering the meaning of the signalling behaviour in isolation. However, considering the behaviour in

Table 1
Coding criteria to identify doctors' verbal signalling behaviours.

Doctors' verbal utterances signalling upcoming changes within the current consultation, either immediately or at a later point, that:
1. Inform
Provide information that tells the patient what will happen in the consultation.
It is not necessary for patient to provide a verbal response to the doctor's utterance, although the patient might acknowledge receipt.
2. Invite
Provide opportunities for the patient to choose what will happen in the consultation.
Patient interaction in terms of a verbal response is often required, but is not essential to code this behaviour.
Includes opportunities for the patient to create the structure coming ahead freely, or by selecting from options provided by the doctor.
3. Instruct
Tell the patient what to do in the consultation.
Not all instructions signal structure, and only those that refer to structure should be collected.
Note:
Only includes signalling behaviours about what is to happen in this consultation, not immediately afterwards or in a subsequent consultation. If there are doubts as to whether the doctor is referring to the current consultation or not, the behaviour is not coded.

the context of the surrounding talk, it also moved the discussion away from a patient concern that immediately preceded it, where the patient had described being 'frightened' by pain (twice) and being 'bothered' by the meaning of a test result. However, the doctors' signalling behaviour made no reference to the patient's concern. Furthermore, the doctor's subsequent talk consisted of a summary of some aspects of the bio-medical history, omitting any mention of the problems (pain and test result) or emotions raised by the patient. The absence of these indicated that the action being performed by the doctor's response was to change the topic and move discussion away from the concern. This further role for the signalling behaviour was coined the *hyperfunction*.

Coding was an iterative process. Consultations were transcribed verbatim to ensure that all utterances were captured, including false starts and repeated words. Transcripts were anonymised to ensure raters were blind to participant characteristics to prevent any bias in interpretation of the utterances. Transcripts comprised a mean of 2361 words (SD 237). Two independent raters (GM and LN) identified utterances meeting the criteria and categorised these by behaviour type and function. The raters met regularly to review criteria and coding agreement. Coding was conducted in batches, with two full passes through the 78 consultations: 19 batches for the first pass as criteria were refined, and 5 batches for the second pass after agreement of final criteria.

Additionally, to ensure that signalling of post-consultation events (such as tests or treatment) were excluded, the raters independently identified all utterances signalling future events in the phases of the consultations devoted to explanation and planning [20] and categorised these as 'definitely within this consultation', 'definitely post-consultation' and 'unclear'. Inter-rater reliability was 82.9 % (949/1144 utterances). A total of 119 behaviours were retained: 98 through initial agreement and a further 21 following consensus discussion.

Overall inter-rater reliability (agreement of coding the behaviours by type and function) was 90.2 % (range 81.5–100 % for the 24 batches) for a final tally of 974 verbal signalling behaviours. Final codes were agreed for all behaviours through consensus discussions.

2.5. Ethics

The research was approved by UCL Research Ethics Committee.

3. Results

3.1. Type and frequency of signalling behaviours

Signposts were found in the 974 signalling behaviours identified across the 78 consultations (Table 2).

However not all behaviours identified in the *inform* type were explicit about what would happen. Some signalled a change in the structure but not what the change entailed, and were called 'post without sign'. Others signalled a change in content, but not how the patient was to be involved: these were coined 'sign without post'. Some signalling behaviours simultaneously pointed forwards and backwards, letting the patient know what was coming next in relation to what had already happened: these were called 'bi-directional signposts'. Others retrospectively signalled a change that had occurred and were called 'post signposts'.

Signalling behaviours to *invite* patient input typically took the form of questions or statements that provided varying degrees of choice about the consultation (Table 2). One example of 'open choice' was identified, giving the patient an opportunity to shape the agenda. However, more instances were found of 'limited choice', that invited patients to contribute within the existing structure, typically by presenting options regarding content to be discussed. Other signalling behaviours invited patient input on topics that had been discussed through 'check-in' or 'tested' the patient's understanding of the consultation agenda or content. A further behaviour ('rhetorical question') that appeared to present the patient with an opportunity to contribute was used to preface an explanation.

In the *instruct* category, doctors directed patient involvement in terms of what the patient should or should not do, with the majority in the latter category telling the patient not to be worried.

The frequency of the behaviour types (Table 3) showed that *inform* behaviours were most common (92 %), with signposts the single most common category (36 % of *inform* behaviours).

3.2. Function of signalling behaviours

Twenty five functions were identified (Table 4). These were used to signal the structure or content of the consultation, with some used for either. Two functions ('reassuring' and 'postponing') occurred in response to patient concerns or questions.

The frequency of functions (Table 5) shows that *introducing questions* was most common (31 % of 974 behaviours). The majority of behaviours signalled content rather than structure (54 %, 530/974). The most frequent behaviours informed the patient about what would immediately follow, for example, questions, a list, plan, different topic or summary. Signalling behaviours informing the patient about the consultation plan, inviting the patient to be involved in the plan, or signalling the structure of the consultation appeared in relatively lower frequencies. For example, 29 'agenda-setting' behaviours were used by 27 doctors.

3.3. Hyperfunctions of signalling behaviours

Just over a third of behaviours (35 %, 345/974) were identified as having one or more further functions, resulting in 410 instances of hyperfunctions (Table 6).

Table 2
Types of doctors' verbal signalling behaviours.

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1. Inform
a. Signpost
A verbal utterance that explicitly signals what is going to happen in the consultation.
  Examples:
Examples:
- *"Okay.* **Uh, I'll be asking a few questions, you know, to find out exactly what's going on, and then we'll address your concerns and we'll devise how, how we will proceed from there on**. *Is that alright?"*
- *"Right, okay. Uh, and* **I'll just quickly go through, uh, all the systems just to make sure that we're not missing anything**. *So have you recently lost any weight at all?"*

b. Post without sign
Indicates a change in the consultation is coming, but not what the specific content of that change is.
Examples:
- *"* **I'd just like to review something else with you**. *Do you take any regular medication?"*
- *"Okay. And . . . I don't . . .* **it's going to be quite embarrassing for me and you as well but** *. . . I mean you went . . . you're only with your wife, or you went . . . you haven't had any sex with any other . . . "*

c. Sign without post
Indicates a change in the the content, but not what is going to happen; does not give the patient information about how they will be involved in the discussion.
Examples:
- *"Okay.* **Um, so then, uh, drugs**. *You're on [medications]. Do you take any other drugs at all?*
- *"That's fine, ah,* **um, about your family history**, *does anybody have got problem with diabetes or, er, thyroid problem, anyone else?"*

d. Bi-directional signpost
Indicates a change is coming, whilst also referring back to previous discussion.
Examples:
- *"Okay right,* **so I've taken a history there so perhaps it would be helpful now if I sort of explain things a little bit**."
- *"Sure,* **sorry, just to go back, I did forget to mention**, *have you had any sickness?"*

e. Post-signpost
Refers back to discussion that has already happened (e.g. by providing a rationale, apology or to emphasise content).
Examples:
- *"Yeah. It runs in family.* **For that reason I asked you about your family history**."
- *"Sure, okay, um, fine, have you got any ideas or concerns?* **I know it's a bit of a silly question as well.**"

2. Invite
a. Open choice
Offer of choice about the direction of the consultation (e.g. in terms of topics or amount of information to be discussed).
Example:
- *"Yes, certainly. So it's sort of obviously one thing you want to get out of today is to get some pain relief,* **is there anything else you were sort of expecting out of today that you're wanting to get out of this consultation**?"*

b. Limited choice
Opportunity for bounded choice about the direction of the consultation (e.g. within a particular topic or through choosing among options presented by the doctor).
Examples:
- *"Okay.* **Is there anything apart from what happened today that you want to tell me that I haven't asked you about**?"*
- *"Yes, I'm afraid there is. Um, to . . .* **Would you like me to explain a bit, or explain it more**?"*

c. Check-in
Opportunity for the patient to change the course of the consultation in a minor way (e.g. by revisiting information the doctor has discussed).
Examples:
- *"* **Any issues, any concerns, anything that you didn't understand today**?"*
- *"So, to, to . . .* **did I miss anything, from what I've summarised so far**?"*

d. Test
Requests a specific and narrow contribution of the patient's knowledge that will be verified by the doctor.
Examples:
- *"* **Do you know why we are here today**? *I think you've been to your GP and you were complaining of [symptoms], am I right?"*
- *"* **So you understand the plan now**?"*

e. Rhetorical question
A grammatical question that does not expect a response from the patient; used to preface an explanation.
Example:
  "We need to get to the bottom of things, **why have you developed this pain**? *It's quite sudden, isn't it?"*
3. Instruct
a. Direct patient input
Tells the patient what to do in the consultation.
Examples:
- *"Okay. So [patient title+surname],* **just allow me to just summarise your [symptoms]**."
- *"* **Stop me if I'm wrong there**?"*

b. Direct patient emotion
Tells the patient what to do regarding their emotions in the consultation.
Examples:
- *"I will tell you,* **definitely don't worry at the moment**, *[beeping] you know, we cannot comment at the moment. We are having, you know, just history.."*
- *"No,* **don't think about that way** *because we we have to sort out the problems that what's going on with you..."*

Table 3
Frequency of doctors' verbal signalling behaviours.

Type of behaviour	Frequency
1. Inform	
Signpost	319
Post without sign	208
Sign without post	146
Bi-directional signpost	141
Post signpost	81
Sub-total	*895*
2. Invite	
Limited choice	35
Check-in	12
Test	3
Open choice	1
Rhetorical question	1
Sub-total	*52*
3. Instruct	
Direct patient input	14
Direct patient emotion	13
Sub-total	*27*
Total	**974**

The majority related to concerns (65 %, 267/410); the most common being ignoring (27 %, 71/267) or postponing (21 %, 57/267). The most frequent hyperfunctions relating to content and structure respectively signalled medical uncertainty (64 %, 49/76) and transition between consultation stages (53 %, 31/59).

Examples of the three most common hyperfunctions relating to patient concerns (ignoring, postponing and reassuring) are shown in Table 7. In these, the main function of the behaviours is to signal questions or a plan. The further function either responds to or moves away from the patient's concern.

3.4. Stacking of signalling behaviours

Sometimes verbal signalling behaviours occurred together in a doctor's turn, a phenomenon coined 'stacking'; 96 stacks were found, comprising 209 signalling behaviours. Most combined two or three behaviours, with one found to have four. Whilst these carried their individual functions, when combined, the resulting stack of signalling behaviours carried an overall hyperfunction.

Table 4
Function of doctors' verbal signalling behaviours.

Function	Examples
1. Relating to structure	
Agenda setting	
Gives an overview, plan or rationale for the consultation, usually in the initiating phase.	"Okay. My name is [name]. Uh, **I been asked by my consultant to see you, to talk to you about your problem**, cos, er, we have a referral letter from your GP."
	"My name is Dr. [name]. **I've been asked to have a quick chat with you here today,** if that's okay."
Plan	
Gives an overview of what will come next, elsewhere in the consultation.	**"Do you mind if we explore each of those in turn?"**
	"Okay. Maybe I'll [inaudible]. **I think what we should talk about now is what . . . what we are going to do from now on.**"
Inviting patient to construct consultation	
Provides an opportunity for the patient to change the course of the consultation, through open or limited choice.	"Nothing like that, alright, okay. **And er, do you want to know anything about [medical condition] or what we have discussed now?**"
	"Okay, fine. Um, and **just to confirm you didn't want anyone else . . . I should have asked probably, you didn't want anyone else to do consultation or just** [overtalking]."
Transition between consultation phases	
May signal a stage ending or a new one beginning; the stage does not need to be specified.	"Okay, [patient title] then what we would like to do, err, **having taken the history from you, I would do the examination** and then we'll do [investigations]."
	"Okay, um, **so just before I go onto the next bit,** so over the past six months you've been feeling [symptoms]."
Transition to summary	
Explicitly signals a summary phase.	"Okay. All right. **So, just to recap what you've already kind of told me.** You had [symptoms]."
	"Okay. **Uh, summing up, I would say that, uh, uh, if I could just summarise it for you . . .** "
Transition to physical examination	
Signals a hypothetical physical examination.	"We will we will definitely [maybe in one week- I'll get- immed-] see you **examine you now** and then make sure that you get all the [investigations] done."
	"Let's **check your blood pressure now.**"
External activity	
Signals the use of resources other than discussion (e.g. writing, drawing, using referral letter).	"Okay, **do you mind if I just write some things down?**"
	"Um, well, **I will look at the report of your x-ray just now.**"
2. Relating to content	
Change of topic	
Signals a new or revisited topic; the content does not need to be specified.	"Okay, and **going back to the smoking,** have you stopped smoking?"
	"**Just running through a few other things.** Do you, did you ever suffer from [symptoms] at all?"
Introducing questions	
May preface a single question or a line of questioning.	"**And the pain,** does it go anywhere else at all?"
	"Okay. Um, then, **I just want to ask you, in terms of family history,** any family history of diabetes?"
Introducing sensitive questions	
Signals an upcoming topic that may seem surprising or cause discomfort.	"**Please er forgive me for asking a sort of weird question,** do you, you don't use any illicit drugs?"
	"And again, **I hope you don't mind me asking,** but the feelings down there, sort of, sexual function and things, have you noticed any changes there?"
Explaining/clarifying	
Signals that information is coming to provide an explanation or clarification.	"**I'll run through the two of them** because they're quite unusual names and you probably won't be familiar with them."
	"Yes, so **just to be a bit more clear,** I'd like to run some investigations and if those confirm what I'm suspecting . . . "

Table 4 (*Continued*)

Function	Examples
Warning shot Signals that the doctor is about to deliver bad news.	"**I'm afraid** the symptoms you're having, which are mainly, um, which I have picked up and which I am concerned about . . . " "Now, you mentioned one of your concerns was it might be related to [medical condition], and **I'm afraid to say that might be the case**, okay."
Acknowledging sensitive topic Provides an apology or rationale for a sensitive topic.	"And have you taken any recreational drugs, **sorry to ask you**, but . . . any recreational drugs?" "**Sorry I asked, but I wanted to check just to make sure**."
Acknowledging bad news Notes that important information has been delivered, that the patient may need to process.	"**I wouldn't blame you at all if you didn't take in everything I've been saying sitting there**." "It's perfectly understandable. **Yeah, this is maybe too much for you to take in**."
Thanking patient for information Acknowledges the patient's delivery of information with a positive quality.	"Alright sir. Okay. **Thank you very much for talking to me. You gave me all this valuable information**." "Okay. **Thank you very much for giving me such an elaborate history**."
Professional disclosure The doctor invokes their professional role (e.g. values or knowledge) in the context of sharing information.	"**I have to be honest and say that I'm not an expert in [medical condition]**, but to best of my knowledge it's unknown, we don't know what causes it." "**But I must be upfront to you what I'm actually thinking in my mind as well**, but if you need . . . any other information to provide it to you later on . . . "
Checking with patient Invites the patient to seek clarification, express an opinion or correct what the doctor has said.	"**How do you feel about that?** I know it's a lot of information." "If that hasn't settled down, I think we'll need to investigate further into this and what could be causing it. **How does that sound for you?**"
Final check Invites the patient to ask any further questions or provide any remaining information, often towards the end of a consultation phase.	"Okay. Okay, right, fine. **Is there anything else that you want to tell me before I ask you a few more questions?**" "Okay. Those are the main things, **you can patch up wherever you think it's appropriate that we've missed**."
3. Relating to structure or content **Listing** Presenting a list; may state that a list is coming and/or present the enumerated list itself.	(a) Content "Okay, fine, right, um, well, um, **there are three different reasons** why you might have [symptoms], okay." (b) Structure "I think, **first of all**, I hope that I can give you a slight reassurance I think it's highly unlikely that it's [medical condition], I can pretty much say that."
Reminding Repeats or reinforces what the doctor has previously said.	(a) Content "It doesn't really fit in with [medical condition]. **So I think that's the first thing [inaudible] if that's okay**." (b) Structure: "Okay. And um however, **as I said**, I'd like to examine you, and I'd like to carry out other investigations before we just put it down to that."
Emphasis Draws the patient's attention to what the doctor is saying.	(a) Content "I think we do need to do some investigations, but **I think important thing is** that we probably got an idea of where we're actually going, going at." (b) Structure "Um, I think, **first and foremost**, I will have to examine you, okay."
Rationale for moving forward Signals what is to come through reflecting back on something the doctor or patient has previously said.	(a) Content "**Something I didn't ask you**, do you take, do you take the Pill for contraception?" (b) Structure "Just one question, sorry, **I have to go back, I just remembered**."
Warning what won't happen Signals what won't be included in the current consultation.	(a) Content "Um, I wonder in your case . . . **I can't, absolutely, as we're sitting here today, tell you what the diagnosis is going to be here**." (b) Structure "I think it's a complicated condition and **it's not something that I would expect in the course of, you know, a brief chat with you, um, to be able to communicate all the things you need to know**."
4. Relating to patient concerns **Reassuring** Signals reassurance, often in response to a patient concern or information provided by the doctor.	"Okay, well, **hopefully we can get to the bottom of that**." "Yes. **Right now, please not to be worried**. First let us find out what is the exact cause of these [symptoms]."
Postponing discussion of concerns Signals delay in addressing a patient concern or question.	"Okay, okay, okay. I understand your concern, but **I want to take some history first before I address your concern**." "**I think that's something we can come back to**, if that's all right?"

Table 5
Frequency of functions of doctors' verbal signalling behaviours.

Function of behaviour	Frequency
Introducing questions	299
Listing (content)	68
Plan	66
Change of topic	62
Reminding (structure)	54
Transition to summary	38
Reminding (content)	36
Warning what won't happen (content)	32
Introducing sensitive questions	30
Agenda setting	29
Checking with patient	28
Final check for questions	28
Explaining/clarifying	27
Reassuring	27
Listing (structure)	23
Postponing discussion of concerns	18
Acknowledging sensitive topic	13
Transition between consultation phases	12
Rationale for moving forward (content)	12
External activity	12
Acknowledging bad news	11
Professional disclosure	11
Emphasis (structure)	10
Inviting patient to construct consultation	8
Emphasis (content)	7
Warning shot	4
Thanking patient for information	3
Warning what won't happen (structure)	2
Rationale for moving forward (structure)	2
Transition to physical examination	2
Total	**974**

Examples are shown in Table 8. In these, the hyperfunctions of the combined behaviours related to patient concerns, with the overall effect of ignoring, postponing or reassuring.

4. Discussion and conclusion

4.1. Discussion

As the 'host' of the consultation, the doctor has considerable control over the structure and content of the conversation with the patient. This is accomplished through agenda-setting, organising phases and topics, and managing use of time. This study addresses a gap in the literature by systematically identifying the types and functions of doctors' verbal signalling behaviours to explore how these behaviours might affect patient agency in the consultation.

Doctors' verbal signalling behaviours were found in three categories: *inform, invite* and *instruct*, with *inform* being the most frequent. 'Signposting' was the most common *inform* behaviour. This aligns with its profile in educational guidance: international models for clinical communication teaching and assessment recommend strategies that clearly inform the patient about *what will happen in the consultation* [14–24,40,41]. However, a greater number of signalling behaviours were less informative ('posts without signs' and 'signs without posts). In this setting, these were used mainly to signal questions, often highlighting a 'checklist' for the consultation (in terms of section headings or topics), or prefacing sensitive topics. Due to the partial information provided in these signalling behaviours, patients were afforded a reduced opportunity to prepare for what was to come. These behaviours do not feature in consultation models, but their observed frequency

Table 6
Hyperfunctions of doctors' verbal signalling behaviours.

Hyperfunction	Definition	Frequency
1. Relating to structure		
Transition between consultation phases	Signals the start or end of a stage or task of the consultation.	31
Change prompted by examiner time signal	Change in direction of the consultation after the warning of 'two minutes remaining'.	13
Plan	Suggests a plan alongside the main function of behaviour.	9
Inviting fixed patient contribution	Provides the patient with the opportunity to make a narrow and specific contribution.	6
	Subtotal	*59*
2. Relating to content		
Medical uncertainty	Highlights lack of certainty regarding diagnosis, tests and/or treatment.	49
Introducing sensitive question	Raises a sensitive topic whilst overtly signalling questioning.	12
False list	Implies a list is coming but does not go beyond one option.	8
Warning shot	Prefaces delivery of bad news without making this explicit to the patient.	7
	Subtotal	*76*
3. Relating to patient concerns		
Ignoring concern	Moves the discussion away from a patient concern, without explicitly referring to it.	71
Postponing concern	Moves the discussion away from a patient concern, but acknowledges patient's wish to discuss a topic.	57
Reassuring	Provides reassurance.	42
Reframing patient concern	Changes the focus of the discussion when a patient concern is raised.	31
Parking concern	Moves the discussion away from a patient concern (e.g. by providing medical information).	24
Responding to biomedical aspect	Responds to the patient concern without addressing the emotional aspect.	20
Addressing delayed concern	Responds to a patient concern raised earlier in the consultation.	10
Shut down	Discourages the patient from asking questions or voicing concerns.	8
Soliciting patient concern	Invites the patient to express concerns through encouraging the patient to ask questions.	3
Empathy	Adds an element of empathy to the behaviour's main function.	1
	Subtotal	*267*
4. Other		
Professional disclosure	Invokes the professional role of the doctor.	3
Miscellaneous	Other hyperfunctions.	5
	Subtotal	*8*
	Total	**410**

Table 7
Examples of hyperfunctions of doctors' verbal signalling behaviours related to patient concerns.

Hyperfunction	Examples
Ignoring concern	Patient: "Oh god. I mean, I could. But I wake up tired. I'm not, I'm not sleeping at night. I'm sweating, disturbed. You know, I do, I want to sleep during the day. I feel like an old woman. It's not right to feel like that." Doctor: "And at the moment just with regards, um, **just another question for you if you don't mind.** Have you gone through the menopause yet?" Patient: "The mood, it's not low it's not low, not. I don't know what the the the definition of depression is but I don't feel depressed. I feel worried now, but I feel annoyed at the tiredness. It's constantly there." Doctor: "Would it be alright, **I'm going to run through your body systems to make sure we don't miss any symptoms.** So you said you've not had any chest pain?"
Postponing concern	Patient: "No, no I don't have [symptoms] but I am quite anxious to know what's actually causing all this, so. No, I suppose occasionally I miss when I get a bit anxious about what's causing it all, you know, I'd like to know . . . why, I mean, why would I get, um, [symptoms]?" Doctor: "Erm, it could be for a few different things. **I've just got a few more questions and then we'll have a chat about that, if that's all right?** Erm, so, erm, any diarrhoea at all?" Patient: "Well, I mean, you always think the worst, don't you? I think there's something maybe underlying, like, [inaudible] or something like that but I've just no idea you know, what could be causing this." Doctor: "**Okay, I'll get to that in a minute, I just want to sort of, go over a few things with you again to see if I've got all the information,** see if I've missed out on anything."
Reassuring	Doctor: "Yeah. I understand, [patient name], and **I will try my very best to [unclear] and find out what's the exact cause.** Okay, could you please tell me, uh, uh, how often you feel tired? Is it all the time . . . ?" Doctor: "Absolutely, I can . . . I can see where really that comes from **but we'll try to get to the bottom of it..**" Patient: "Mm hmm." Doctor: "**And then we'll . . . we'll see what we can do next, okay.** Have you got any idea what it may be or anyone has told you anything?"

Table 8
Examples of stacked doctors' verbal signalling behaviours.

Examples	Functions
Patient: " . . . I, I'm quite worried that this has got something to do with my lung cancer." Doctor: "Hmm-mm. Okay." Patient: "I mean, I'm wondering if there's a connection at all. I mean, I hope not, but it has crossed my mind." Doctor: "Sure. Sure. So, **let me quickly summarise, uh, uh, what your problem here is.** / **If I've missed anything important, please do let me know.** / **And then we discuss the plan, okay?**"	*Main functions:* Transition to summary, Checking with patient, Plan *Hyperfunction:* Ignoring concern
Patient: " . . . which is why I'm actually rather concerned about, about this pain and, and, you know, I hope it's not going to affect my work, that I'll be able to go to work." Doctor: "Yes, absolutely fine, **we'll speak a bit more about that.** / **Okay, maybe just a few more questions,** can I check if you're smoking?"	*Main functions:* Plan, Introducing questions *Hyperfunction:* Postponing concern
Doctor: "No, it's a real problem, it's a real thing, it's something we recognise. And it's something that . . . **maybe we'll ask you a few more questions and we get a read on what we might need to do,** / **but we could talk about what we could do to prevent that again.**"	*Main functions:* Plan, Plan *Hyperfunction:* Reassuring

suggests that educational guidance may need to emphasise that signalling behaviours, by definition, should be understood by the hearer.

Most *invite* behaviours signalled the opportunity for patient involvement within defined parameters. Only one instance offered the patient choice in the plan for the consultation, although agenda-setting is a feature of all consultation models. This adds to the literature revealing a discrepancy between educational recommendations and behaviour in practice [42]. Internationally, contemporary standards of healthcare promote patient-centred care as a means of enabling patient autonomy [43–48]. Whilst this is promoted to improve outcomes, it is also advocated as 'the right thing to do', justifiable solely on moral grounds, independent of its relationship with health outcomes [7]. If consultations reduce patient autonomy, this has profound implications not just for the individual, but for the function of healthcare in society [49]. The role of clinical communication in facilitating autonomy is not only to support the patient in making an informed decision at the end of a consultation, but a process of actively fostering partnership throughout the consultation. The role of doctors' verbal signalling behaviours in facilitating this is currently poorly understood.

A third category of verbal signalling behaviours identified, *instruct*, included directions about patient behaviour and emotion within the consultation. These functioned to keep the patient on the path for the consultation set out by the doctor. Where patient input was signalled by these behaviours, it was limited. The single most frequent role of verbal signalling behaviours in this category was to tell the patient *not to worry*. It has been argued that this strategy, observed across a variety of clinical settings, may have a negative effect on patient agency by dismissing the person's concerns [50,51].

The frequency and roles of doctors' verbal signalling behaviours will inevitably be context dependent [23]. In this setting, gathering information to solicit the patient's medical history was a priority task. The most commonly observed function, introducing questions, reflects this context. It could be argued that doctors may behave differently in examinations, which feature time-limited, high stakes interactions. However, this could equally be argued to apply to all medical consultations. A strength of investigating doctor-patient communication in this setting is its generalisability: the consultations had many features common across specialities, including gathering information, addressing patient concerns, considering potential diagnoses and agreeing the way forward.

These aims were further underpinned by the marking criteria. Nonetheless, the setting may also present limitations. Whilst the study investigated a naturalistic setting (an existing postgraduate examination) it is not known whether the doctors behaved differently under assessment conditions. Doctors may have demonstrated their 'best skills' or accentuated behaviours related to the marking criteria. There were instances where the doctor signalled a change in direction of the consultation after the 'two minutes remaining' warning, which would not occur in clinics.

Most of the behaviours signalled upcoming content, rather than structure, such as questions, lists, plans and topic changes, with the majority indicating immediate 'micro-level' changes. Signalling behaviours were rarely used for involving the patient in the overall plan, for example, agreeing the agenda or transitioning between consultation phases. In two thirds of the consultations, doctors did not signal the consultation agenda. The most commonly signalled structural change was to introduce the summary at the end of gathering information. This may reflect the demand characteristics of the setting, with doctors placing a focus on eliciting and checking the medical history. The lack of previous empirical work in this area makes it difficult to draw comparisons between the relative frequencies of verbal signalling behaviours in this and other settings. However, the methodology developed may encourage other researchers to undertake similar systematic examination of the type, frequency and functions of doctor's verbal signalling behaviours.

This study has proposed a conceptual framework for examining the functions of doctors' verbal signalling behaviours in context. These included explicit roles (shown in the pragmatic meaning), and further roles ('hyperfunctions') that were reflected in the way doctors used behaviours. Combinations of signalling behaviours were also found ('stacks') which similarly manifested roles beyond the pragmatic meaning of the individual signalling behaviours. Both of these were newly identified attributes of how doctors use verbal signalling behaviours that are absent from educational guidance: all clinical communication models imply that a verbal signalling behaviour serves only one function. Whilst some of these further roles related to consultation structure and content, they were commonly used as a response to patient concerns, with the majority being used to deflect the conversation away from the patient agenda. In the absence of data about doctors' intentions, it is not known which function doctors oriented to first, however. For example, whether a doctor wished to achieve a transition in the consultation, with ignoring a patient concern being a 'side effect', or whether a doctor wished to ignore a patient concern, and used a transition to accomplish this.

Deflection is a known strategy in research examining doctors' observed communication in response to patient concerns; indeed *ignoring* and *postponing* are categories in a well-established, international system for coding doctors' responses to patients' emotional cues and concerns [52]. This study provides further insights to advance this literature by revealing additional dimensions of doctors' behaviour in response to patient concerns. Firstly, it has highlighted that the apparent meaning of a signalling behaviour (e.g. *'can I ask some questions?'*) may not capture its further function of diverting discussion away from the patient's agenda. Secondly, it has shown that signalling behaviours (either singly or in combination) occur specifically at points in the consultation that move the conversation away from addressing patient concerns. This suggests that doctors not only use these behaviours to share the consultation structure with the patient, they are able to handle them in ways that return the consultation back under their control. Doctors can therefore use language in a variety of ways to share structure with the patient, but not always in a way with the effect of facilitating the patient agenda.

4.2. Conclusion

Using an original methodological approach, this study systematically identified doctors' verbal signalling behaviours, creating a taxonomy of behaviour types. A contextual analysis of the form and function of signalling behaviours examined how doctors used these behaviours, and explored their role in enabling or inhibiting patient agency.

As well as observing behaviours proposed by educational models of clinical communication, new behaviours were discovered that revealed a spectrum of signalling strategies. These ranged from inviting patients to contribute to the consultation, informing patients about what was coming next, to instructing patients to follow an already established pathway. Some signalling behaviours carried further roles or were combined in sequence, often serving to deflect away from concerns raised by the patient, which were manifestations of the patient agenda.

4.3. Practice implications

Doctors used strategies recommended by international clinical communication educational guidance in ways that are not taught or expected, and also used a number of techniques that are not taught. The findings suggest that educational models used for training and assessment of doctors must take account of doctors' observed behaviour, which may reflect doctors' perceived priorities. This study has shown that how doctors use behaviours to signal what is to happen in the consultation can promote or inhibit patient agency. This is accomplished by encouraging or discouraging patient participation, and either incorporating or deflecting away from the patient agenda.

Patient-centred care addresses the needs and concerns of the individual patient; however this study contributes to a body of research showing that doctors may repurpose communication strategies in ways that do not promote the patient's agenda. This highlights the need to align international standards of healthcare, teaching and assessment. Other widely-taught techniques from international educational models may be investigated in this way, enriching theory and enhancing the literature on how doctors' communication can promote patient autonomy.

CRediT authorship contribution statement

Gianpaolo Manalastas: Conceptualisation, Methodology, Formal analysis, Investigation, Resources, Data curation, Writing - original draft, Writing - review & editing, Visualisation. **Lorraine M. Noble:** Conceptualisation, Methodology, Formal analysis, Investigation, Resources, Data curation, Writing - original draft, Writing - review & editing, Visualisation, Supervision, Funding acquisition. **Rowena Viney:** Conceptualisation, Methodology, Investigation, Resources, Data curation, Writing - review & editing, Supervision, Funding acquisition. **Ann E. Griffin:** Conceptualisation, Investigation, Resources, Data curation, Writing - review & editing, Supervision, Funding acquisition.

Declaration of Competing Interest

The authors have no competing interests.

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Appendix A. Supplementary data

Supplementary material related to this article can be found, in the online version, at doi:https://doi.org/10.1016/j.pec.2020.05.020.

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