**Interruption and rapport disruption: measuring the prevalence and nature of verbal interruptions during back pain consultations**

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**Abstract**

**Background:** Evaluating the impact of communication during clinical encounters is complex. One behaviour, largely ignored in clinical practice and training, is interruptions in verbal communication. Two types exist: an ‘overlap’ (an error projecting when a turn ends); and an ‘interruption’ (when an individual starts talking before the speaker’s turn is complete). This paper reports the prevalence of these behaviours during initial consultations involving physiotherapists and patients with back pain.

**Methods:** 25 initial back pain consultations were observed, audio-recorded, transcribed verbatim, analysed thematically and managed using a Framework approach.

**Results:** The data set comprised 15,489 turns: 7,659 by patients; 7,647 by clinicians; and 183 by others (patients’ spouse or clinical colleagues). Clinicians were 7 times more likely to interrupt than patients (284 and 39 respectively), however overlaps were 1.5 times more prevalent among patients (n=582) compared to clinicians (n=385). The main functions for interruptions by clinicians and patients were to ‘seek’ or ‘give’ additional information respectively. A trend was noted that female physiotherapists were 3 times more likely to interrupt than male clinicians and overall, the prevalence of interruptions in same-sex consultations was twice as likely as in mixed-sex encounters, however the small sample size precluded secondary analyses.

**Conclusion:** Alongside measuring the prevalence of interruptions in back pain consultations, this study identified differences in the *nature* of interruptions made by physiotherapists and patients. It highlights the complexity of clinical encounters and being aware of interruptions is important to optimise rapport and clinician-patient relationships.

**Key words:** health communication, interruptions, interaction, back pain, physical therapy, professional-patient relations

**Introduction**

In the United Kingdom, patients’ experiences of clinical services are increasingly seen as a priority and used as a comprehensive indicator of quality in healthcare.[1] The term ‘patient experience’ is often used interchangeably with ‘patient satisfaction’, however this is erroneous as they are not reporting the same construct. Whilst ‘patient experience’ seeks to determine whether something that should have happened did in fact happen (according to the patient), ‘satisfaction’ seeks to determine whether a patient’s expectations about their healthcare were met, and thus satisfaction ratings are influenced by expectations. To help guide the measurement of patient experience, the NHS National Quality Board developed a framework outlining the critical elements[2] (Figure 1), and communication between the healthcare professional and patient is a key component that impacts upon every consultation, whatever the diagnosis or care setting.

It can be particularly challenging to provide a positive experience when diagnostic labels are nebulous for example in back pain, where the precise cause cannot be identified in the majority of patients, and their presentation is labelled ‘non-specific low back pain’. This term is a diagnosis by exclusion, not a single diagnostic category, and there is some evidence to suggest that a lack of clear diagnosis is associated with negative psychological, clinical and behavioural outcomes.[3] In addition to the lack of clear diagnosis, treatment options for back pain are limited and recurrence is common, further adding to the challenge of providing a positive experience. Given the high prevalence of back pain consultations (comprising around 14% of general practice consultations in the UK each year[4]) and the burden to individuals, healthcare systems and society, it is essential that clinicians fully develop their communication skills in order to optimise the patient’s outcome and experience when treating this challenging symptom.

Figure 1: NHS Patient Experience Framework[2]

In October 2011, the NHS National Quality Board agreed on a working definition of patient experience to guide the measurement of patient experience across the health service. This framework outlines those elements which are critical to the patients’ experience of NHS Services:

* *Respect for patient-centred values, preferences, and expressed needs, including: cultural issues; the dignity, privacy and independence of patients and service users; an awareness of quality-of-life issues; and shared decision making;*
* *Co-ordination and integration of care across the health and social care system;*
* *Information, communication, and education on clinical status, progress, prognosis, and processes of care in order to facilitate autonomy, self-care and health promotion;*
* *Physical comfort including pain management, help with activities of daily living, and clean and comfortable surroundings;*
* *Emotional support and alleviation of fear and anxiety about such issues as clinical status, prognosis, and the impact of illness on patients, their families and their finances;*
* *Welcoming the involvement of family and friends, on whom patients and service users rely, in decision-making and demonstrating awareness and accommodation of their needs as care-givers;*
* *Transition and continuity as regards information that will help patients care for themselves away from a clinical setting, and coordination, planning, and support to ease transitions;*
* *Access to care with attention for example, to time spent waiting for admission or time between admission and placement in a room in an in-patient setting, and waiting time for an appointment or visit in the out-patient, primary care or social care setting.*

Evaluating the impact of communication during clinical encounters is complex. During the initial phase of the consultation, rapport begins to develop and history-taking, if done well, resembles a conversation that tends to be paced and directed by both participants[5] rather than an interview or, worse still, an interrogation. Much can be learned about social interaction from other disciplines beyond healthcare, for example from the micro-analytic, methodology of conversation analysis, which systematically explores social interactions. This approach has shown that talk is not haphazard; it follows social rules, such as ‘turn-taking’, which is considered to be the most basic level of organisation in a conversation[6]. This concept has shown how turns are constructed and the techniques for allocating speakership, where each speaker has one ‘turn construction unit’ per turn.[6] After one unit is produced, the speaker may transfer the turn to the other directly (for example by asking a question, in which the social action would be for the other to respond), or the other may claim the next turn as the conversation continues. Knowing how to recognise these points through linguistic and non-linguistic cues not only provides a platform for developing meaningful dialogue and analysing verbal communication, but is also key to building rapport, which is particularly pertinent to healthcare interactions.

Rapport has been defined as a social phenomenon that involves mutual attentiveness, positivity and interactional synchrony, resulting in ‘good chemistry’[7] and, along with compassion and empathy, has been described as a cornerstone of a positive clinical encounter.[8] It is a complex phenomenon that is affected by non-verbal gestures such as offering a handshake on introduction, making eye contact without prolonged staring, or maintaining an open, non-threatening body posture,[9] in addition to skills in verbal communication. Rapport is a dynamic phenomenon that can be challenging to build but is easily undermined by verbal and non-verbal behaviours. As Moyle noted in her phenomenological study of individuals hospitalised with a depressive illness, therapeutic relationships do not seem to occur ‘consistently or effortlessly in practice.’[10 pp104] To help develop these relationships, active listening is strongly advocated in communication training.[11]

Specific to healthcare encounters, much has been written about the structure of verbal communication and six distinct stages have been identified: opening; problem presentation; information gathering; diagnosis; treatment; and closing.[12-14] Robinson and Heritage observed that the problem presentation stage is the only time patients are given the opportunity to share information about their symptoms in their own words and according to their own agenda.[13, 14] Giving the patient an opportunity to direct the conversation has been shown to increase adherence to treatment [15] and improve patient ‘satisfaction,’[16]  and is therefore pivotal in building rapport. Nevertheless, it has been reported that doctors have been loath to inquire about the social and emotional impact of patients’ problems, for fear it will increase the patients’ distress, take up too much time and threaten their own emotional survival.[17] Consequently, they respond to emotional cues with strategies to block further disclosure such as: offering advice and reassurance before the main problems have been identified; explaining away distress as normal; attending to physical aspects only; switching topic; or “jollying” patients along.[17 pp698]

Fears of opening a ‘can of worms’ in the problem presentation stage may be unfounded as shown by Langewitz et al. who reported that patients will take 92 seconds on average to explain their problem in an outpatient setting if they are not interrupted.[18] Studies have shown however that 25-76% of patients are interrupted by physicians before they finish talking, and the mean talking time is reduced to a mere 12-23 seconds.[19-21] Interruptions are not restricted to the problem presentation stage; they can occur at any time during the clinical encounter and by either the patient or clinician.[19] Such interruptions may lead to delays in patients expressing their concerns[22] and missed opportunities to gather relevant information,[20] resulting in incomplete or improper medical advice.[22] It is therefore important to understand their prevalence and nature in healthcare encounters, which has not been reported to date.

When exploring interruptions, it is important to look beyond the field of healthcare to sociolinguistics for evidence of ‘malfunctions’ in turn-taking.[23] Schegloff differentiated between overlaps and interruptions, declaring “By overlap we tend to mean talk by more than a speaker at a time … the second one has projected his talk to begin at a possible completion point of the prior speaker’s talk.” Meanwhile, “If it’s projected to begin in the middle of a point that is in no way a possible completion point for the turn, then we speak of it as an interruption.”[24] Thus as Tannen concludes, when speakers intend to achieve turn-taking, an overlap represents a tactical error in this system whereas an interruption is a violation of it.[23]

Bennett attempted to differentiate between overlaps and interruptions on structural grounds, maintaining an overlap to be a descriptive term referring to the timing of a contribution, whereas an interruption is an interpretive category, reflecting the speaker’s interpretations of prevailing rights and obligations in the interaction.[25] In contrast, Tannen suggests that differentiating between interruption and overlapping depends on the topic of the conversation, how long each of the interlocutors has already spoken, what kind of relationship they have, how they react to the other’s interruption and most importantly, how the interruption or overlap belongs to the actual topic i.e. whether it is a support, a contradiction, or even a change of topic.[23] The reaction of the speaker on the receiving end of the interjection is therefore an important consideration in making this distinction.

From the literature, it is therefore evident that deciding whether an overlap or interruption has occurred can be influenced by many factors and further complicated by cross-gender and cross-cultural language differences (for a review see Tannen).[23] In summary, there is no universally acknowledged definition of overlaps and interruptions, and in practice the two terms are often applied interchangeably.[26, 27] Kitzinger’s description of an interruption as; a start-up at a point in a speaker’s talk where it cannot possibly be completed, and an overlap as; an error in projecting where a speaker is planning to end their turn,[27] was taken as the starting point for this study.

Although clinical communication has been most widely studied within medicine, it is gathering pace across other disciplines yet, despite the plethora of literature now available across healthcare in general, little is known about communication involving patients with back pain, despite its high importance. Therefore, a novel study (reported elsewhere[28]) was undertaken to map the communication that occurs between physiotherapists and people with low back pain during their initial consultation to identify the communication and clinical decision-making taking place in consultations between physiotherapists and people with back pain. The data revealed evidence of clinicians talking concurrently and interrupting patients, and so it was decided to analyse the prevalence of these behaviours in more detail, exploring overlaps and interruptions to understand whether these behaviours obstructed speech and impacted negatively on rapport, or whether they could be regarded as cooperative,[23] thereby helping to establish rapport and build solidarity between the patient and clinician. Therefore, as well as considering the prevalence of interruptions and overlaps, it was important to explore their nature and so the purpose of this study was to address the question: ‘What is the prevalence and nature of verbal interruptions made during initial consultations between musculoskeletal physiotherapists and patients presenting with back pain?’

**Methods**

*Study design*

This cross-sectional, observational study sought to determine the prevalence and nature of verbal interruptions at consultations between clinicians and patients with back pain at their first encounter. Ethical approval for this study was granted by the Southampton and South West Hampshire Local Research Ethics Committee (08/H0502/15).

*Setting*

This study took place in the primary care service at a small, city hospital in Southern England. Patients were referred to the service by their general practitioner and allocated an individual, 45-minute initial appointment, with further 30-minute treatment sessions, if required.

*Participants*

Patients were eligible to participate in this study if they were aged 18 years or over, with a diagnosis of low back pain (defined as pain of unspecified duration, in an area bounded by the 12th thoracic vertebra and ribs superiorly, gluteal folds inferiorly, and contours of the trunk laterally) irrespective of any distal referral to the lower limbs. Patients with recurrent back pain were eligible provided they had not received any physiotherapy or acupuncture within the preceding three months in order to identify this episode of back pain as distinct.

Patients were excluded if they had:

* signs and symptoms suggesting possible serious spinal pathology (red flags) as listed in national guidelines[29]
* spinal surgery for this episode
* another musculoskeletal disorder more troublesome than their back pain
* attended additional consultations for this back pain episode with additional health care professionals other than their general practitioner
* a known severe psychiatric or psychological disorder
* inability to communicate in English without assistance.

All physiotherapists working in the study setting, registered with the Health and Care Professions Council[30] and currently managing patients with back pain, were invited to take part. They completed a brief, demographic questionnaire detailing their grade, number of years qualified and duration working in the musculoskeletal speciality. After recruiting the clinicians, purposive sampling was undertaken to ensure that the four sex combinations were included in data collection: male therapist and patient; male therapist/female patient; female therapist/male patient; female therapist and patient. To include a range of clinical practice, quota sampling was used to ensure a maximum of four patients were recruited for each clinician. Consistent with qualitative methods, a sample size of 20 to 30 patients was anticipated to provide the richness of data that was sought.[31] When patients were contacted about their physiotherapy appointment, they were given details of the research by the administration team and invited to contact the senior author (LR) if they wished to take part. Written consent was obtained and, prior to their consultation, patients completed a brief questionnaire detailing the location of their symptoms, onset, duration, work status and self-reported, pre-morbid activity level.

*Data collection*

A small, digital Edirol audio recorder (model R-09HR, Roland Corporation, Shizuoka, Japan) was discreetly placed in the treatment cubicle. The senior author (LR) sat out of the direct field of vision of either participant and took no active part in the consultation, recording field notes to assist in contextualising the interaction.

It was important to rate the patients’ perceptions of the overall interaction, encompassing verbal communication and also non-verbal behaviours that may contribute to the development of trust and rapport (and are key to establishing and maintaining interpersonal relationships).[32] As there is no gold standard tool for measuring non-verbal behaviours, a tool was selected from the literature that had been used to measure physiotherapists’ non-verbal communication in a cohort of US clients aged 75 years or over.[32] In this tool, clients were asked to rate 17 interpersonal, affective dimensions on a 9-point scale ranging from 1 (‘*not at all*’) to 9 (‘*very*’). While developing the current study, public and patient representatives suggested that participants might struggle with the notion of attributing a score of 1 to a behaviour that was not seen at all. Since it was the *ranking* of words that was the primary interest with this tool, rather than absolute values, on completion of the consultation, patients were asked to rate the physiotherapists’ behaviour using the more familiar 11-point (0-10) scale, keeping the same end-point descriptors. Thus in summary, the patients’ rating of the overall interaction was made using a 0-10 scale, where 0 = ‘*not at all*’ and 10 = ‘*very*’.

*Data analysis*

Audio-recordings were transcribed verbatim and the number of speaking turns between the physiotherapists and patients were counted. Each turn comprised one ‘turn construction unit’, identified by Sacks, Schegloff and Jefferson as any sentential, clausal, phrasal and lexical construction.[6] The prevalence of interruptions and overlaps was identified, based on Kitzinger’s description of an overlap being an error in where a speaker plans to end their turn, versus an interruption, which was a start-up at a point in the speaker’s talk where it could not possibly be complete[27] (i.e. a violation of turn-taking[23]). Each section of concurrent talk was coded as either an overlap or an interruption and its function explored. Thematic analysis was undertaken to explore their function in communication. In this exploratory study, differentiating overlaps from interruptions, no further categorisations of the overlaps were made.

Data were managed using a Framework approach,[33, 34] which is a highly systematic method of qualitative data management. Originating in large-scale social policy research, Framework is becoming an increasingly popular approach in health research. The defining feature is a matrix output where rows (cases), columns (codes) and ‘cells’ of summarised data provide a structure into which the data are reduced in order to enable analysis by case or by code. [34] The method is not aligned with a particular epistemological, philosophical or theoretical approach, but is a flexible tool that can be adapted for use with many qualitative approaches and thematic analyses, and is most commonly used for managing the thematic analysis of semi-structured interview transcripts.[34] The Framework method comprises seven stages: 1) transcription; 2) familiarisation with the interview; 3) coding; 4) developing a working analytical framework; 5) applying the analytical framework; 6) charting data into the matrix; 7) interpreting the data.[34] For consistency, one researcher (FB) counted the prevalence of all the turns and any areas of uncertainty in coding function were discussed and resolved with the senior author (LR). The prevalence of overlaps and interruptions were expressed as percentages by dividing the number of occasions the patient or clinician each overlapped or interrupted (as the numerator) by the total number of respective turns (as the denominator) and multiplying by 100.

**Results**

*Clinicians*

Fourteen out of 15 eligible physiotherapists (5 male and 9 female), agreed to take part in the study, 9 of whom successfully recruited patients within the study timeframe (3 male and 6 female). The reasons for non-recruitment were: maternity (n=2), rotation of staff (n=2), and managerial responsibilities (n=1).

The clinicians’ experience ranged from 6 months to 15 years post-training (median 4 years), and their reported experience in a musculoskeletal speciality ranged from 8 days to 11 years (median 19 months). Three clinicians were at the entry grade for qualified physiotherapists with a bachelor or pre-registration masters’ degree, four were ‘experienced or specialist’ grade, and the most senior two were ‘advanced practitioner’ grade.

*Patients*

One hundred and fourteen patients reporting low back pain were sent information packs, and 27 were recruited to the study (response rate 24%). Of these, 14 were female (52%) and 13 male (48%). During recruitment, two patients breached the inclusion criteria and sampling strategy and were subsequently excluded from the study. No further data were missing. When checking for selection bias, there were no differences in demographic characteristics (sex, age) between those recruited and those who did not respond or declined to participate. The mean age of those recruited was 47.8 years (range: 20–81 years), and the median duration of their current episode of back pain was 28 weeks (range: 7 weeks–9 years).

*Duration of Consultations*

Initial consultations were allocated 45 minutes, and the mean duration per consultation was 38 minutes 59 seconds (38:59) (range: 26:21–53:16). The content of the verbal communication has been categorised using the Medical Communications Behavior System[35] and reported elsewhere.[28]

*Patients’ perceptions of the physiotherapists’ behaviours*

The mean scores rated by patients (n=17) of the 17 interpersonal, affective behaviours are summarised in Table 1. The results were clearly polarised, with 13 of the 17 behaviours scoring 6.8/10 or more and the remaining four behaviours (dominant, nervous, aloof or infantilizing), scoring 3.2/10 or less. It is worth noting that in a UK population, 4 of the 17 respondents asked the meaning of ‘infantilizing’ as this term was unfamiliar to them.

**Table 1: Patients’ rating of clinician behaviour at the initial consultation**

Please rate what you thought of the physiotherapist’s behaviour today on a scale from 0 to 10 (where 0=*not at all* to 10=*very*):

|  |  |
| --- | --- |
| **Manner** | **Mean score (n=17)** |
| Professional | 9.3 |
| Honest | 9.2 |
| Competent | 8.9 |
| Confident | 8.9 |
| Likable | 8.9 |
| Supportive | 8.9 |
| Attentive | 8.5 |
| Warm | 8.4 |
| Accepting | 8.1 |
| Enthusiastic | 8.1 |
| Concerned | 7.9 |
| Empathic | 7.2 |
| Optimistic | 6.8 |
| Dominant | 3.2 |
| Nervous | 2.3 |
| Aloof | 0.9 |
| Infantilizing | 0 |

*Frequency of interruptions and overlaps*

Of the 25 consultations (total duration: 975 minutes), 15,489 turns were recorded between clinicians (n=7,647) and patients (n=7,659) and 183 involving others (the patients’ spouse or clinical colleagues). In these encounters, clinicians interrupted patients on 284 occasions (3.7%), while patients interrupted the clinicians 39 times (0.5%). Patients overlapped clinician talk more frequently than vice versa, 7.6% (n=582) compared with 5.0% (n=385) respectively (Figure 2).

**Figure 2: Prevalence of overlaps and interruptions by clinicians, patients and others, in 25 initial back pain consultations (total 15.489 turns)**

In summary, the clinicians interrupted patients 7 times more frequently than patients interrupted clinicians, meanwhile overlaps were 1.5 times more prevalent among the patient group.

*Influence of sex*

Due to the sampling strategy, all four sex combinations were included, however the numbers were too small for sub-group analyses. It is worth noting a trend that female physiotherapists were 3 times more likely to interrupt than male clinicians. Furthermore, in same-sex consultations, overlaps and interruptions occurred twice as often as in mixed-sex consultations (Table 2).

*Influence of clinician experience*

In this sample, the level of experience of the clinician appeared to make little difference to the prevalence of overlaps and interruptions, although again, the sample size precludes secondary analyses (Table 2).

*Interruptions to the key clinical question*

At the start of the clinical consultation is the ‘problem presentation’ phase, normally initiated by clinicians with questions such as *‘What can I do for you today?’*[13] Earlier work specifically with this population of physiotherapists and patients with back pain, identified the preferred key clinical question (to facilitate discussion of the reason for attending) as: ‘Do you want to just tell me a little bit about your back pain first of all?’[36] This problem presentation phase is usually terminated by clinicians with questions that initiate the next phase of information gathering, such as *‘When did all this start?’*[14]

In this study, when looking specifically at the key clinical question about their back pain, the mean time that patients took to outline their symptoms was 23.8 seconds and in 40% (n=10) of consultations, the clinician interrupted the patient’s response to this important question.

**Table 2: Number of interruptions associated with sex differences, years and level of experience.**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **Who** | **Number of Interruptions** | | | |
| **Total** | | **Range** | |
| **Sex** | **Female physical therapist** | 205 (73%) | | 21 (1-22) | |
| **Male physical therapist** | 79 (27%) | | 17 (3-20) | |
|  | **Combined** | **Physical therapist** | | **Patient** |
| **Same sex**  (Eg. Male clinician:male patient) | n=215 | n=190 (88%) | | n=25 (12%) |
| **Mixed sex**  (Eg. Male clinician:female patient) | n=108 | n=94 (87%) | | n=14 (13%) |
| **Years of experience: (physical therapist)** | **Grade** | **Mean (years)** | | **Mean number of interruptions (range)** | |
| Staff grade | 0.8 | | 13.1 (3-19) | |
| ‘Experienced or specialist’ | 4.3 | | 11.8 (5-22) | |
| ‘Advanced practitioner’ | 10.25 | | 12.1 (1-22) | |

*Nature*

The interruptions and overlaps made by the patient or clinician were categorised into five main themes:

* Seeking additional information
* Giving additional information
* Clarifying what was said
* Change in topic
* Facilitating conversation

Each theme will now be described using verbatim examples from the corpus of data. Sometimes the interruptions appeared to be cooperative[23] and enhance the interaction, meanwhile at other times, they appeared to have negative consequences. Examples are given following description of the themes.

*Theme 1: Seeking additional information*

Both physiotherapists and patients interrupted each other to build on information received from the previous speaker and this behaviour was more prevalent among clinicians than patients (51% of the interruptions / overlaps vs 30%). Physiotherapists often sought additional information about the patients’ working environment, medication, and location / intensity of pain as denoted by ‘…’ in the interruption below, which is underlined:

Physiotherapist: *Are, are you on any medication?*

Patient: *I am, just for depression. That’s…*

Physiotherapist: *Do you know what it’s called, that one?*

Patient: *It’s um, um Fluoxetine*

(Patient 2: Female patient with 7 weeks’ duration of back pain, female physiotherapist).

Meanwhile, patients sought additional information about their diagnosis as well as aspects of their treatment, such as more specific instructions about their exercise prescription:

Physiotherapist: *See how you go…*

Patient: *A day, or twice a day, or whenever, how I feel?*

Physiotherapist: *Yes. See how you feel. Couple of times a day would be ideal if you can* (Patient 18: Male patient with 1 year duration of back pain, female physiotherapist).

*Theme 2: Giving additional information*

This was the most frequent theme identified for patient interruptions and overlaps (46%), whereas clinicians rarely interrupted to give information (1%). The most frequent cause for patients to interrupt was to give additional information to expand the clinicians’ understanding, especially relating to pain. In this example, the patient escalates his current level of pain:

Patient: *I could hardly get here this afternoon, I limped along all the corridors, it’s so bad.*

Physiotherapist: *Right, so walking’s…*

Patient: *I really am pretty painful at the moment.*

(Patient 1: Male patient with 1 year duration of back pain, female physiotherapist).

*Theme 3: Clarifying what was said*

The second most common function used for interruptions and overlaps by the clinician was to clarify what patients had said (29%), which may have been to facilitate or demonstrate understanding. For example, the quote below shows how the clinician interrupted the patient with another question to ensure they were clear about the type of heat pad being described and show some alignment with the product the patient was referring to:

Patient: *I did try those heat pads that you can put, that you can buy …*

Physiotherapist: *Ah the ones that you can stick on?*

Patient: *Yeah, and they were no good.*

Physiotherapist: *No good. OK.*

(Patient 8: Female patient with 9 years’ duration of back pain, female physiotherapist).

This theme was never identified as a cause for patients interrupting clinicians.

*Theme 4: Change in topic*

This theme was only seen in 6% of the interruptions and overlaps made by clinicians. Here is an example where the patient is expressing some doubt about the merits of gentle exercise for symptom relief and the physiotherapist interjects and changes the topic to focus on heat, for which there is more support:

Physiotherapist: *OK. But you found that, sort of, gentle exercises will help to ease the symptoms if you’re getting them?*

Patient: *Well, yeah, I think it’s a bit experimental at this stage. I think it would have to happen again for me to see …*

Physiotherapist: *Umm. And the heat is obviously quite good*

Patient: *Yeah.*

(Patient 4: Female patient with 6 months’ duration of back pain, female physiotherapist).

The clinician is the main protagonist of the conversation. By comparison, this theme was identified as a cause for patients interrupting clinicians in 7% of the total interruptions and overlaps.

*Theme 5: Facilitation conversation*

This was not a common cause of interruption in either group, occurring 5% and 7% in clinicians and patients’ interruptions respectively. In the example below, the patient had earlier expressed concern about the health of her son who had a long-term condition, which the physiotherapist referred to, when interrupting the patient who was talking about coping strategies for her back pain:

Patient: *I suppose I’ve learned to listen to what’s going on to my back, and just to stop and just have time where I sit down and relax, rather than just keep going with your…*

Physiotherapist: *OK. Um, is your son feeling better now?*

(Patient 4: Female patient with 6 months’ duration of back pain, female physiotherapist).

*Consequence*

Within the corpus of data, there were examples when the interruption or overlap appeared to enhance the communication. For example in this dialogue, the patient escalates the physiotherapist’s comment with good humour:

Physiotherapist: *I mean, I think you’ve got very much the right idea, to try and get it moving, trying to stretch it, absolutely with going walking, you were saying*

Patient: *Yeah.*

Physiotherapist: *It feels quite good at the time to, to get it moving. It’s a bit achy afterwards, but um …* [Patient interrupts]

Patient: *It’s not good when you’re starting it!* [Both laugh].

(Patient 13: Female patient with 7 weeks’ duration of back pain, female physiotherapist).

Conversely, there were examples where the interruption or overlap appeared to have negative consequences, such as in this dialogue, where the physiotherapist and patient appear to be having two parallel conversations: They both interrupt each other and speak, rather than listen:

Physiotherapist: *Rather than trying to squeeze it in when I say to, and then you can’t do it, so you just don’t bother, and …* [Patient interrupts]

Patient: *I wasn’t sure if you wanted me to do it twice a day….* [Clinician interrupts]

Physiotherapist: … *then nothing happens.*

Patient: *… or just do once a day*

(Patient 7: Female patient with 1 year duration of back pain, female physiotherapist).

**Discussion**

Observational studies in clinical practice, measuring actual behaviour in real-life situations, are widely regarded as the gold standard.[37] The purpose of this analysis was to measure the prevalence and nature of verbal interruptions during initial consultations between musculoskeletal physiotherapists and patients presenting with low back pain. The interactions were observed and audio-recorded, rather than video-recorded to minimise the reduction in empathic behaviour and non-clinical communication seen in a previous cohort of patients with low back pain.[38]

In this data set of 25 initial consultations, clinicians and patients shared the 15,489 turns equally, and the six stages described of opening, problem presentation, information gathering, diagnosis, treatment and closing,[12-14] were evident. Clinicians were 7 times more likely to interrupt than patients, however overlaps were 1.5 times more prevalent among patients compared to clinicians. The main functions for interruptions by clinicians and patients were to ‘seek’ or ‘give’ additional information respectively.

McAllister et al. highlighted the importance of the clinical consultation as a conversation, paced and directed by both participants.[5] Sacks et al. maintain that people take turns to talk by following a set of conventional rules that assign speaker time and direction, and any deviation could indicate a person’s attempt to display power, status or influence.[6] Interruptions may not simply be a reflection of status or dominance however, they may reflect a speaker’s enthusiasm, interest or spontaneity.[22] Furthermore, it is important they are not interpreted as signs of power, control or dominance, rather they are indicative of interpersonal relationships, such as neutrality, power or rapport,[39] which is particularly pertinent to healthcare where power differentials prevail. This was seen in the current study, both in theme 3, and when the patient interjects with humour in the penultimate quote. Practical guides to clinical communication skills concur with Sacks’ model and the two most important skills have been identified as: the ability to allow the patient to speak without interruption; and the ability to truly hear what the patient is trying to say.[40]

Looking globally at the consultations, clinicians were 7 times more likely to interrupt patients, whereas overlaps, or errors projecting when a turn ends, were 1.5 times more prevalent among the patient group. Interruptions are more assertive behaviours than overlaps and it is likely that these findings are indicative of the power differential that exists between clinicians and patients during healthcare encounters.

Canter uses Lukes’ model to analyse power in healthcare interactions, where first dimensional power (in which A forces B to do something) may occur in emergencies, in certain circumstances involving patients with acute psychiatric states or when patients are extremely distressed or anxious and do not want to debate choices.[41] Second dimensional power is where A controls the agenda in an interaction with B, and third dimensional power is when A controls the world as B sees it. Examples of second dimensional power are abundant in clinical consultations, for example when clinicians deliberately steer the conversation away from or towards certain topics, or when treatment options may be presented to favour a particular outcome.[41] In this study, there was evidence of both clinicians and patients deliberately steering the conversation towards certain topics (seen in the quotes) and it is interesting that clinicians most commonly used interruptions to do this, whereas patients used overlaps, which are not functionally interruptive, and can be interpreted as signals of interest or enthusiasm.[22] The most common function used by clinicians to interrupt or overlap was to seek additional information and such behaviours need to be exercised with care as they could either be perceived positively by patients (indicating active listening and engagement by the clinician who wants to know more, thereby reinforcing what the patient is saying is of interest and / or relevance), or negatively, when the patient perceives that the clinician is dominating the direction of the conversation, or that their previous content was inadequate in some aspect. This may result in the patient not feeling listened to or not expressing their full concerns.[15, 16, 22] Meanwhile, the most prevalent function for patients to overlap and interrupt was to give additional information, especially in their quest to help the clinician understand aspects of their pain, such as the quote in theme 2, where the patient escalates his pain dialogue.

Early on in consultations, when patients are outlining their problem presentation, studies have shown that 25-76% of patients are interrupted by physicians before they finish, thus reducing their mean talking time to only 12-23 seconds.[19-21] To our knowledge, there has been no data specifically measuring this phenomenon in physiotherapy interactions. In the current study, 40% of patients were interrupted by the clinician during their initial problem presentation and their mean talking time was 23.8 seconds, irrespective of being interrupted, which is comparable to the previous literature and well short of Langewitz et al.’s 92 seconds[18]. It is recognised that physiotherapists have longer appointments than doctors, but even despite this, their duration of problem presentation and prevalence of interruptions were comparable.

Further analysis of data showed increased frequency of interruptions made by female physiotherapists compared to males. Previous literature on this topic has been contradictory, however there is now growing recognition that communication style is more important than sex in determining patients’ responses.[42] This notion has been considered further within medicine where although there may be some evidence that male and female clinicians (doctors) have different communication styles, it is possible these differences arise through the expectations and stereotypes of patients and clinicians[42] and further work on this complex area is warranted.

Additionally, work is needed with observational studies to explore the perceived and actual impact of interruptions upon clinicians and patients and whether / how broader aspects of communication influence the outcome of back pain episodes and patient experience. Using methodologies such as conversation analysis could greatly advance future understanding of such phenomena. Considering communication skills more broadly and their impact on outcome could have a bearing on service design and delivery, for example the need for some follow-up appointments and hence, there may be cost implications that are relevant to patients, clinicians, service commissioners and funders.

*Limitations*

Although this study has shown the potential to capture the prevalence and nature of interruptions during clinical encounters, it was not designed to determine their impact on health status or outcome. It is worth noting that in studies with this design, there is likely to be some selection bias because participating physiotherapists were self-selected and likely to be more interested in communication. To mitigate for this, all physiotherapists who fulfilled the inclusion criteria in the department were invited to participate and 14 out of the 15 eligible clinicians agreed, 9 of whom successfully recruited patients.

It is possible that the presence of the senior author and an audio-recorder in the consultation may have influenced communication and behaviours, most likely of the clinicians. Attempts were made to minimise intrusiveness by sitting out of the direct field of vision of all participants, and discreetly placing the small audio-recorder so as not to be directly in front of either participant. The generalisability of the findings was limited to a single hospital in England and to first consultations only. Furthermore, whilst it is recognised that the United Kingdom approach to back pain is considered more conservative than US practice patterns,[43] it is likely the presenting symptoms and levels of distress in patients presenting in both countries will be comparable and so these findings are relevant beyond the UK.

*Clinical implications*

To the best of our knowledge, this is the first time the prevalence and nature of overlaps and interruptions have been reported in patients presenting with low back pain. This work has highlighted the complexity of evaluating the impact of communication during clinical encounters. Clinicians need to ensure that the pendulum of current clinical practice does not swing towards pathoanatomy and physiology, biomechanics and technological advances at the expense of treating the patient as a person and providing truly patient-centred care. Therefore, clinicians at the forefront of practice, whatever their profession, need to invest time evaluating and developing their own communication skills (for example by audio-recording consultations or engaging in peer observation, with patients’ consent) to optimise non-specific treatment effects and ultimately enhance patients’ experience and outcomes.

**Conclusion**

Interruptions do not necessarily result in rapport disruption as shown by examples in this paper however they do have the potential to be obstructive. Therefore, it is paramount that clinicians are aware of their behaviour, in particular the times when they overlap and interrupt patients, and any interactional consequences.

In this study of 25 initial back pain consultations, with 15,489 turns, patients were interrupted (by the physiotherapists) while answering the key clinical question in 40% of cases. Overall in the interaction, clinicians were 7 times more likely to interrupt (i.e. start speaking before the speaker’s turn is complete) than patients, however patients were 1.5 times more likely than clinicians to display overlaps (i.e. errors projecting when a turn ends).

Enhancing knowledge about communication skills and how best to apply them remains a priority for all clinicians in order to maximise patient experience, listen to patients and deliver truly patient-centred, quality healthcare.

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