Client Education: Communicative Interaction between Physiotherapists and Clients with Subacute Low Back Pain in Private Practice

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ABSTRACT

Purpose: To explore, through focus-group interviews, client education provided by physiotherapists in private practice who treat injured workers with subacute low back pain (SA-LBP).

Methods: Six focus-group interviews were held in the fall of 2006 to explore treatment practices of physiotherapists for this population. Each of the 44 physiotherapists who volunteered attended one of six regional sessions.

Results: Three overarching themes emerged: the critical importance of education; education: a multidimensional concept; and the physiotherapist–client relationship. In this study, we found that education provides continuity by tying together the separate tasks occurring during one treatment session. Our participants said that time is of the essence in private practice and described how they provide education seamlessly, making this type of delivery efficient.

Conclusions: Education is a highly valued aspect of practice for physiotherapists. Verbal, tactile, and visual information obtained from the client as assessment and treatment progress is explored, expanded, and contextualized in conversation with the client. In a communicative, interactive process, client fears, other contextual information, and physiotherapist information about procedures and techniques, exercises, and anatomy are collaboratively interrelated.

Key Words: client education, collaboration, physiotherapist–client relationship, physiotherapy, private practice, qualitative, subacute low back pain

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RÉSUMÉ

Objectif : Explorer, dans le cadre d'entrevues réalisées lors de groupes de discussion, la qualité de l'éducation offerte aux clients par les physiothérapeutes en pratique privée qui traitent des patients aux prises avec des lombalgies suraiguës (SA-LBP).

Méthode : Six groupes de discussion ont été mis sur pied et réunis au cours de l'automne 2006 en vue d'étudier les pratiques de traitement des physiothérapeutes pour ce segment de la population. Chacun des 44 physiothérapeutes qui se sont portés volontaires pour cette étude a assisté à une des six séances régionales qui ont été organisées.

Résultats : Trois thèmes connexes ont été abordés avec les clients : l'importance cruciale de l'éducation, l'éducation comme concept multidimensionnel et finalement la relation entre le physiothérapeute et le client. Dans le cadre de cette étude, nous avons constaté que l'éducation assure une forme de continuité en reliant entre elles des tâches distinctes qui se déroulent pendant un traitement. Nos participants ont affirmé que le temps constitue l'essence de la pratique privée et ont décrit comment ils assurent une éducation constante, afin de rendre ce type de prestation encore plus efficace.

Conclusions : L'éducation est un aspect fortement valorisé de la pratique des physiothérapeutes. L'information verbale, tactile et visuelle obtenue par le client au fur et à mesure que progressent l'évaluation et le traitement est explorée, élargie et mise en contexte lors des conversations avec ce client. Dans le cadre d'un processus de communication interactif, les peurs de ce client, les autres renseignements contextuels et l'information du physiothérapeute sur les procédures et techniques, les exercices et l'anatomie, tout cela est interrelié et suppose une forme de collaboration.

Mots clés : collaboration, éducation du client, lombalgie suraiguë, physiothérapie, pratique privée, qualitative, relation client-physiothérapeute

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This project was reviewed by Human Research Ethics Committees at Dalhousie University and the University of British Columbia. Informed consent was obtained from all participants; a statement of confidentiality was signed by the individual who transcribed the audiotapes of the focus groups.

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INTRODUCTION

With the transfer of responsibility for health status from the system to the individual, client education has become increasingly important.¹ Accompanying this shift of emphasis in the physiotherapy treatment of low back pain (LBP) has been the move away from a focus on client compliance with conservative treatment (e.g., bed rest and analgesics) toward an educational approach that embraces an understanding of risk factors for chronic pain and the importance of early, active intervention.

Research studies have indicated that the critical impact of education rests on physiotherapists' ability to effectively help their clients develop skills in self-management.² Clients have ranked physiotherapists' teaching abilities highly.³⁻⁵ Furthermore, the importance of client education is reflected in the increasing number of studies examining this aspect of physiotherapy practice. Education has been defined as "a ubiquitous activity in the practice of ... physical therapists ... [one that includes] information provision, instruction, advice (including informed counseling), and explanation."^{6(p.325)} And while education is considered one of the key roles of physiotherapists,⁷ it is recognized that providing optimal education for clients may be a particular challenge in private practice settings, where there is pressure to provide the best care to a steady flow of clients with a large spectrum of clinical problems within a limited time. Also important to consider is that the subacute phase of healing in low back pain (SA-LBP) has been identified as critical with respect to the risk of developing chronic LBP. Private practitioners thus face the challenge of providing effective education to clients with SA-LBP within a practice environment that may not be ideally suited to education.

An analysis by our team of a 1-year set of discharged charts of injured workers with SA-LBP found that documentation of client education across three time periods was evident in <40% of charts; however, most of those records did not indicate any specific details about the education offered.⁸ When education was documented, the main focus was the client's condition, appropriate activity, and body mechanics; less than 6% of charts indicated that pain education was provided.⁸ Although charting is a core competence for Canadian physiotherapists,⁹ this low prevalence of charting of education may indicate that documentation of education is not highly emphasized. For example, the *Guide to Physical Therapist Practice*^{10(p.698)} includes only one, relatively minor, section indicating the need to document education ("III Documentation of the Continuation of Care. 2.7 Communication/consultation with providers/patient/client/family/significant other"). Poor documentation may also be a result of the demands on the physiotherapist's time in private practice.¹¹ If the charts reviewed accurately reflect practice the education delivered, then there is

cause for concern, because we believe that education is an important part of practice and that when clients experience pain and distress, extra care and attention are required to ensure effective education. In the absence of detailed documentation, it is not known what occurs between the client and the physiotherapist in terms of either the content or the education process. We began this study with the goal of better understanding how, in the context of transfer of responsibility, private-practice physiotherapists communicate key educational messages to SA-LBP clients. We report here the results of a focus-group study with physiotherapists that was aimed at understanding how education is provided to injured workers with SA-LBP in the private practice environment.

It is generally understood that physiotherapists frequently engage in educational interventions with clients. The need for research examining education practices specific to physiotherapy was noted in the early 1990s.¹² Given the role of prevention in physiotherapy practice and education as the primary preventive strategy, knowing and understanding *how* physiotherapists educate clients is essential to improving treatment effectiveness. Both enhancing client compliance with treatment and enhancing behavioural change are seen as primary roles for education,^{4,12,13} and adherence to prescribed treatment increases the likelihood that treatment will be effective.¹⁴ Sluijs,¹² citing Bartlett,¹⁵ defined education as a planned experience aimed at influencing clients' behaviour and knowledge using counselling, teaching, and behaviour-modification methods. In subsequent studies, both Sluijs¹² and Gahimer and Domholdt¹ found that education occurred more frequently at the beginning of treatment rather than being distributed across the entire treatment session. Given the intent to influence behaviour and knowledge, as Bartlett described, the context in which this process occurs and the approach that physiotherapists use in private practice requires further exploration.

Psychosocial Influences

The practice of screening for psychosocial risk factors in health care settings has gained support in recent years. The psychosocial or "yellow flags"¹⁶ approach considers clients' ratings on these factors to be strongly associated with their function and their risk of developing chronic pain.¹⁶⁻²² The factors that physiotherapists are primarily focusing on are clients' emotions, attitudes, and beliefs about their back-pain disability.^{16,19,23,24} However, when physiotherapists lack an understanding of the importance of emotions in recovery and rehabilitation, they find encountering clients' emotions challenging.^{12,13,25,26} They do not feel adequately prepared for the task and have requested more training,¹ especially in encounters with clients who display passive,

dependent, angry, aggressive, and/or “know-it-all” behaviours or who have unrealistic expectations of the physiotherapist or of treatment outcomes.²⁷ The strong emotion of fear is central to the fear-avoidance model of pain, in which fear drives the avoidance of movement.²⁸ Waddell concluded that “fear of pain and what we do about pain may be more disabling than pain itself.”^{29(p.164)} By addressing fear and avoidance through education, we can effectively change beliefs and attitudes.^{21,30–32} Clients who expect to have future back pain, perceive severe consequences, and/or believe that they cannot control the problem are more likely to have poor clinical outcomes than those with more positive beliefs.³³ Education about fear-avoidance reduces the “threat” associated with the pain experience.^{34,35}

To deliver this type of education, however, physiotherapists may need to change their own attitudes. The potential impact of a physiotherapist’s attitude and language on clients may be underestimated. The psychological dynamic of fear acquisition is important to consider here: fear is learned quickly, in a social context, through observation of others, and its extinction is slow and resistant.^{36,37} Given the power of the therapeutic relationship, it may not be a surprise to learn that physiotherapists’ attitudes, as reflected in their use of fear-evoking language such as “ruptured disc” or “degenerative change,”³³ have been demonstrated to influence the persistence of pain complaints^{38,39} and pain-related fear in their clients.^{40–42} An educational approach that emphasizes activation and an understanding that the sensations a client is experiencing are explainable (e.g., the book *Explain Pain*⁴³) can best be implemented when the physiotherapist is current with pain science and aware of his or her own attitudes and beliefs about pain. Education for the prevention of chronicity includes considering important psychosocial factors, being current with pain science, and considering the power of the therapeutic relationship.

Physiotherapist–Client Collaboration

The physiotherapist–client relationship is complex,⁴⁴ has an important influence on therapeutic outcomes, and is valued by clients and physiotherapists alike.⁴⁵ An interpersonal relationship with a client, including a systematic approach to care, an open communicative manner, and genuine concern for the client’s perceptions and demands, is considered both necessary to client satisfaction and compliance and important to the task of education.^{3,12} While some physiotherapists believe that compliance is increased by an authoritarian, instrumental communication style dominated by the delivery of scientific facts about pain,⁴ the literature suggests that a relational physiotherapist–client interaction is essential if genuine client cooperation is to be established.^{27,46,47}

This relationship is built on multi-sensory communication. A collaborative approach using affective behav-

iours such as touch, eye contact, smiling, and nodding has been shown to be particularly effective.^{48,49} Touch can positively influence physiotherapists’ interaction with clients.⁵⁰ Physiotherapists use touch for a combination of purposes, depending on their clinical experience and the client’s needs.⁵¹ In a detailed observation of clients with LBP during their first physiotherapy session (which was found to be dominated by education), touch was reported to be the predominant type of nonverbal communication.⁴⁹ In addition, eye contact between individuals provides direct nonverbal communication. And even without eye contact, physiotherapists rely on facial expressions and body language (e.g., pain behaviours^{52,53}) to understand and convey information when interacting with clients.⁵⁴

Successful physiotherapist–client communication is client centred and incorporates active listening.^{2,3} Clients respond positively to being at the centre of the relationship; they place a high value on being listened to.^{4,55} Led by cues provided by the client, active listening reaches for more than information; the client’s psychological and social well-being are also explored and acknowledged.⁵⁶ Active listening exemplifies collaborative communication.^{2,57}

Physiotherapists use all their senses to gather and impart information about a client’s condition.^{47,58} Through both verbal and nonverbal communication, the physiotherapist–client relationship is co-constructed: both clients and physiotherapists form multiple repertoires with each other. As previously discussed, clients’ psychosocial states can be barriers to their recovery, and physiotherapists’ attitudes and beliefs may influence clients’ pain complaints. Through collaborative verbal, tactile, and visual communication, clients participate in physiotherapist-initiated interactions in multiple ways, allowing the physiotherapist to make decisions on their behalf or fully cooperating and sharing decision making.⁵⁹

Client education is an essential component of successful rehabilitation and is the result of a complex interpersonal interaction. Education for clients with SA-LBP is often delivered in the busy environment of a private practice, which has not yet been explored. In this paper we present the results of a study of the practice of physiotherapists who treat injured workers with SA-LBP in private-practice clinics. In focus groups, we asked participants to speak to the value of client education, how it is delivered, and how it might be improved. In the data analysis, we discovered a complex, dynamic physiotherapist–client process of which educational content is but a small part.

METHODS

The study described here was a collaborative project between WorkSafeNB and the School of Physiotherapy at Dalhousie University in Halifax, Nova Scotia. Following ethics reviews by the authors’ institutions and an

audit of 1 year of documentation (the methods of which are reported elsewhere⁸), six focus-group interviews were held in the fall of 2006 to explore physiotherapists' treatment practices. Focus-group interviews are moderated discussions directed toward obtaining perspectives on a specific topic.⁶⁰ Unlike individual interviews, focus-group interviews provide a setting in which participant interaction elicits observations and insights⁶¹ that can be verified immediately through inbuilt checks and balances, such as dialogue and the probing of participants' responses.⁶² Notices about the 2-hour focus-group interviews were sent to private clinics that treat primarily clients with musculoskeletal complaints, with and without insurance coverage, inviting interested physiotherapists to a discussion of their treatment practices and to a presentation on current evidence for physiotherapy intervention for LBP. Each physiotherapist who volunteered attended one of six regional sessions.

Informed consent was provided by participants at the beginning of the interview. The focus groups were facilitated by one of three investigators (KH, AF, AH). The results of the chart audit (reported elsewhere⁸) were presented for validation, discussed by participants, and probed further by the facilitator. The focus-group process provided rich data on physiotherapists' practices in private clinics treating mainly SA-LBP. The interviews were audiotaped, transcribed, and imported into the qualitative software ATLAS/ti version 5.2.0 (ATLAS.ti Scientific Software Development GmbH, Cleverbridge AG, Cologne, Germany) for analysis. Themes that described, organized, and interpreted participants' responses were identified by examining their words and phrases. A label or description for the pattern of words and phrases was applied, and the patterns were clustered, compared, and sorted until sufficiently distinct and comprehensive themes were generated.^{63,64} This paper reports the results of discussions about client education. Participants were asked whether the charting of education represented what is done in their practice; what the purpose of education is; what participants considered as the content of education; and what form of delivery they preferred. One researcher (RB) inductively coded the interview transcripts. Emerging themes were discussed in frequent team meetings, with a recursive cycle between team discussion and coding, comparing, and clustering of data into distinct themes.⁶⁵ Three comprehensive themes emerged: the critical importance of education; education: a multidimensional concept; and understanding the physiotherapist–client relationship. Findings related to delivery of education are also discussed below.

RESULTS

Each of the 44 physiotherapists (36 female, 8 male) with a mean of 17.5 years' experience (range: 0.5–38

years) who volunteered for the study was assigned to one of six focus groups. Interviews were conducted over a 1-month period in geographically dispersed areas in the region.

This section begins with general comments about our findings, followed by more detailed descriptions of specific themes that were identified. Although the charting of education was limited, participants were clear about its importance. Education is *highly valued*; participants repeatedly said that education is the most important thing a physiotherapist can give to clients. Furthermore, it was clear that education is ongoing throughout a client's visits for treatment and is not limited to one point in the treatment process that might be identified as "the education component." As one participant said, "You are always talking with the client"; her use of the word "talking," in this instance, referred to education.

I would say either I am educating them on their problem or why they are having the symptoms that they are, what we need to do, what our course of treatment is going to be and why we are in this specific exercise. So it is constant. (Focus Group 5)

We found that education is much more than content; it is a process that extends the length of each visit and has specific purposes. Participants described education as the tool by which empathic, supportive, and trusting client relationships are developed—a relationship that is important to the seamless conceptual, visual, tactile, and tacit practice that is physiotherapy. These concepts were discussed, compared, and sorted, and the following distinct themes emerged.

The Critical Importance of Education

Participants spoke of education as a highly valued component of physiotherapy practice for SA-LBP, and most considered it their main and most productive intervention:

I feel like this is the crux of what I do, [and] the rest is like the icing on the cake. (Focus Group 1)

Yet this high valuation of education sat ambivalently alongside its devaluation by both professionals themselves and the public. Focus-group participants described their clients' expectations of receiving "hands-on" interventions, considering the time and money expended. For these participants, touch was expected; mere "talk" was not:

The value of education is not given ... out in the field. In fact, a client, if they come in and you just give them education, that wouldn't be enough to pay money for. (Focus Group 2)

Participants acknowledged their own part in undervaluing education. Despite the view that it is "the most

important thing” a client can be given, some physiotherapists found the undervaluing of education difficult to avoid in their own thinking, as one participant described:

I did my initial assessment and I spent [the client's entire] time with education. And at the end of it, I felt like I did the person a disservice because they paid x number of dollars and I didn't lay a hand on them. I felt like I owed them something even though I just spent my time educating them. (Focus Group 2)

The undervaluing of education may stem, in part, from the taken-for-granted, tacit nature of education: it is a routine process that occurs simultaneously with other assessment and treatment processes. Education is more than the mere delivery of content.

Education: A Multidimensional Concept

Participants described education as “an assumption, part of what we do,” and as an “inbred and natural thing” (Focus Group 1) for physiotherapists. Education is generally understood as the imparting or teaching of specific content; in physiotherapy, however, it is a much wider concept that also includes seeking information from clients about their understanding of their injury and pain, providing information to clients, and building upon their current understanding. Education in physiotherapy is an interactive physiotherapist–client process that incorporates both explicit (e.g., content) and implicit (often through touch and observation) aspects.

Content

It is not that content is ignored. During their first visit, clients are informed about pain and its effects, for example, in relation to their specific injury:

I do a fair bit of explaining about the concept of pain, too, because, you know, people seem to identify if things are still injured or whatever. (Focus Group 1)

In addition to explaining pain, participants said, they teach about body mechanics, posture, and ergonomics.

Coaching/Mentoring

Training, advising, and supporting the client are key components of education:

I would be thinking about trying to really get the injured worker to buy into the philosophy of “we've got to get you moving.” And you know, the more right things, the more proper things that they can do really set the stage for good healing because we are in that 4 to 6 week stage. So it would be a lot of mentoring or coaching the patient to “come along, this is what we need to do,” and try to get them on board with that coming out of that acute phase into that more active phase. (Focus Group 5)

Participants said their objective in coaching is to change clients' ways of doing things:

Most of the time with people with LBP it's because of something they did or what they were doing or how they were doing something. So to be able to tell them to do it differently so they don't go back and do the same thing again. (Focus Group 1)

Implicit/Tacit Knowledge

Participants noted that in addition to drawing on explicit information received from clients, they understand their clients by other means. As a relationship with a client is developed, physiotherapists know implicitly what the client needs to be able to benefit from and comply with education:

You learn to “feel” people. You learn to know how they will actually take the information you give them. (Focus Group 2)

The client's body language provides implicit cues to physiotherapists, especially about how the client has incorporated previous education interventions. Physiotherapists then shape this information into the best delivery for the client.

An Interactive Process

Education occurs during physiotherapist–client interactions involving both explicit and implicit cues, through talk-in-context, while the physiotherapist simultaneously provides and gathers information. As one participant remarked,

Nobody takes account that that [education] is what we are doing when we are listening and talking to clients. (Focus Group 2)

Participants said they ask about their clients' work habits and what they do during a day's work, and that they reassure clients “that they are not going to fall apart,” “that they will get better,” and “that this isn't disabling”:

[If] there is a language barrier, or a psychosocial barrier, that is when you learn those things, isn't it? You learn it when you are talking to them and you are listening to them. And then you find out, ah, okay, they have a misperception of your role, or their body, or what pain is telling them. That is when it comes up. (Focus Group 2)

This interactive process that we call “education” simultaneously develops and maintains the trust and rapport that is the physiotherapist–client relationship.

Understanding the Physiotherapist–Client Relationship

Focus-group participants pointed out that being aware of the interpersonal dynamic within which education takes place is essential. Importantly, education was the principal mechanism identified by physiotherapists for developing a trusting relationship with clients:

I think the education part of it helps you to establish rapport. (Focus Group 1)

In order to do so, and to educate the client effectively, physiotherapists must use active, focused listening, while also noting implicit body-language cues from touch and observation.

Active Listening

Replacing an attitude of “I am the teacher and you listen to me” with an active listening approach of “I am going to listen to you, repeat it back, and really try to hear what you are thinking/feeling” is critical to a successful learning outcome. Being aware of (i.e., feeling) one’s own emotions when confronted by a client’s emotions and simultaneously listening and reflecting on both without taking a paternalistic or authoritative approach is crucial to a collaborative and trusting physiotherapist–client relationship, as one participant describes:

One lady was overwhelming me emotionally. She was overwhelmed emotionally. So I listened more and I got to the crux of the problem. If she had not expressed herself emotionally, I probably would have done my physiotherapy directive thing, and she wouldn’t have gotten it. So we need to be better listeners and we need to be taught to be better listeners. And to take that and not feel like we are imposing on somebody’s privacy by saying, “Are you afraid?” (Focus Group 2)

In the passage quoted above, the physiotherapist expresses her readiness to engage her client’s emotions; she describes feeling uncomfortable, but notes the importance of listening and of not viewing emotions as the private sphere of clients. She also notes engagement with her own emotions in the phrase “one lady was overwhelming me emotionally.” An authoritative stance by the physiotherapist can distance her from the client; active listening cannot occur, and the resulting lack of rapport and interaction can keep clients’ emotions in abeyance. The same participant later described the psychosocial state as an obstacle to her previous interactions with clients—an obstacle that she recognizes must be confronted by physiotherapists:

That was a question I wouldn’t have asked 6 years ago, “Are you afraid of this pain?” I wouldn’t have gone into that barrier because that is psychological. (Focus Group 2)

Restoring a client’s confidence is a hoped-for outcome of education, important to the development of rapport. The word “reassurance” resounded among the focus-group participants in relation to education; time and again they said that education includes supporting and reassuring clients about how they are feeling:

At that very first interview we are listening and talking. We are already educating them. We are talking to them, we are reassuring them that what they are feeling is normal. (Focus Group 2)

Body-Language Cues

Clients’ experiences are not expressed only through talk but also involve body-language cues that are both discussed and observed by the client and physiotherapist and that form the basis of the physiotherapist–client relationship:

And not just absolutely verbal but our rapport with our patients, watching their body language. (Focus Group 3)

Rapport between physiotherapist and client is reflected in the client’s body as well as in what the client says. In physiotherapy, however, not only *visual* observation but *touch* provides cues that encourage rapport and can direct the client’s learning as well as the physiotherapist’s understanding of the client. Our focus-group participants frequently talked of “hands-on, the physical touching” (Focus Group 5), as reassuring to the client, although they also acknowledged that some people don’t like to be touched. Tactile communication is one of the implicit communication cues used by physiotherapists. Clients’ body language incorporates implicit social and cultural signs about their learning needs, allowing physiotherapists to attend explicitly to content and/or to coaching or mentoring, matching them to the often implicitly understood learning style of the client:

I can tell by their body language. I might discuss something with you, and say it or do it and use certain analogies that would be appropriate to you. If there was a person who was different, or had a different background than me, then I can change. [I] say the same thing but change it to their understanding; use analogies that they would understand. (Focus Group 5)

However, knowing what type of information a person can understand is not sufficient for effective rehabilitation. Establishing rapport and connection in the physiotherapist–client relationship remains important (perhaps most important), as does taking the time to get to that understanding. As one participant said,

It is fascinating to discover what is going to help that person figure it out. I mean, that can take a lot of time in itself, to get that connection. And sometimes that can be a half-hour session just getting them to get it. (Focus Group 2)

One participant acknowledged the physiotherapist’s responsibility to “understand their [client’s] situation, understand what they are going through and know where to go with it” (Focus Group 4). The combination of rapport, time, and active listening in the physiotherapist–client interaction are aptly portrayed in the following passage, in which a participant reflects on her role in understanding the client and uses “we” to indicate the co-construction of meaning:

I just had somebody recently that came in and she ... she thought that the degenerative disk disease happened at the moment of the injury. She just had this whole idea that it all collapsed right then and there. And it was such a revelation to her that this is an ongoing process. I mean, it was just like the weight of the world came off [her]. And she went out happy and feeling much, much better. I got ... somehow or other, we got to the point; I got to the understanding of what her problem was. And her problem was that she thought she was collapsing. And that is a huge interpersonal interaction that happened in that moment. (Focus Group 2)

The physiotherapist's comprehension of this significant interactional moment involved understanding the tacit visual (and perhaps tactile) cues from her client and combining this information with her own conceptual understanding, derived from listening to and talking with the client. In the above case, a collaboration between physiotherapist and client occurred, in which explicit talk between them and implicit body cues from the client ("the body's capacity to inform"^{66(p.27)}) were used by the physiotherapist to educate the client. The participant understood the collaborative, intuitive, and tacit nature of the process, as indicated by her comment "somehow or other, we got to the point." The success of this interaction was in the participant's understanding of the client through tacit visual and verbal processes:

And a lot of times, you see that look on their face, "Oh, thank God," or, "Okay. Oh, yeah, I get that," and you feel like ... you walk away and you feel like they finally get it. (Focus Group 2)

Delivery of Education: Use of Multiple Senses and Methods

Cognizant of the need for an interactive and trusting environment, focus-group participants described the complexities involved in delivering education. Physiotherapists said that with time and experience, and by using all their senses, they know implicitly what a specific client needs to be able to benefit from and comply with education:

You know, [there are] people that learn this way and [others] that learn another way. And then sometimes you have a feeling when they come in, and you know if you explain it to them that way, they will understand, and when they leave the clinic, they will do whatever you tell them to do. So I guess [you learn this] with time and experience. (Focus Group 2)

Participants said that a non-threatening space in which rapport and understanding can develop allows education to be delivered with a more effective outcome. Humour was a specific communication tool used by one physiotherapist to both lighten and strengthen the delivery:

I use humour with my education. If you don't have the patient interactive and having a good time ... because everything doesn't have to be clinical. You can get more across and they can take more home if they enjoy the conversation and it's interactive, rather than, "Here's the form." (Focus Group 3)

An individualized approach focused on clients' specific circumstances is favoured by participants and is provided more often than a standardized education approach. Clients have the opportunity to ask questions of the physiotherapist working with them:

The patients really appreciate that one-on-one time, to talk to you and have you answer their questions. (Focus Group 1)

In addition, the physiotherapist can measure the effects of education through observation and in general conversation within an individualized, interactive physiotherapist-client relationship:

In casual conversation later, you find out how they have been doing and what they are doing differently maybe. And while you are doing an ultrasound or something, you talk about how they are dealing with their pain these days. Just casual conversation. (Focus Group 1)

Both clients' opportunity to ask questions and physiotherapists' ability to measure the effects of their education were considered major advantages of an individualized approach by the focus-group participants. Further, the individualized approach was considered necessary because in SA-LBP there is a high degree of variability of injury, injury response, and work-related issues:

There are some general guidelines with regards [to] low back pain we can provide clients but we have to individualize them to their workplace and their environment. Some of the body-mechanics education we need to be discussing with them may not be applicable to certain types of jobs they have. Some body mechanics do not apply to some jobs because of the situation. It's just basically working with them, trying to compromise—compromise for that particular individual. (Focus Group 5)

Clients are given an indication of "here's what you need to do" and, especially, "that they need to be active." As one participant pointed out, individualized education supports self-management skill development:

I tell them, as much as you want me to make you better, you are going to make yourself better. I am just here to guide you and do [whatever is necessary] to help you. (Focus Group 4)

Physiotherapists from clinics where standardized education is provided also saw benefits from this approach. Information is more consistent, clients hear questions and responses to concerns that they may not

yet have thought of themselves, and, these participants believed, clients may feel more comfortable asking questions in a group setting:

We have four structured sessions that our clients go to ... It helps them to understand the tissue healing. Somehow it makes sense that they understand that [their back] might still be sore after so many months because the tissue is still active. I find it helps them to have a better understanding of the time frame. And they probably get more information than on a one-to-one basis and everybody gets the same information. (Focus Group 4)

Overall among our participants, however, there was concern that clients will not read material provided in a standardized educational package, may not ask questions, or may already have a high level of information from exploring their complaint on the Internet, so that whatever is provided will not advance their understanding. Notably absent from the discussion was any reference to written or audio-visual materials provided to clients to reinforce the pain education provided.

DISCUSSION

This study has demonstrated that our findings on the charting of education did not reflect actual practice. We have presented here an exploration of the complex physiotherapist–client relationship in the context of injured workers with SA-LBP. In contrast to Sluijs¹² and Gahimer and Domholt's¹ findings that education is delivered mostly at the beginning of treatment, the private-practice physiotherapists in this study described providing client education in a continuous manner across all treatments. Participants described their approach as encompassing elements of other definitions, including a planned experience of counselling, information provision, instruction, advice, behaviour modification, and explanation.^{6,13,15} However, for our participants, education is much more than that. Most importantly, they described a context of verbal, tactile, and visual communication in which a collaborative relationship is established and a learning environment shaped and adapted for each client to maximize the effectiveness of education.

Our findings contribute to a growing interest in this dynamic and provide new insight into the complexity of physiotherapist–client interactions that is not currently captured in traditional charting. Part of this interaction involves clinical reasoning. In describing different approaches, Edwards has referred to *hypothetico-deductive reasoning*, which uses an instrumental learning and action strategy involving explicit reasoning, structured thinking, and the rational selection and evaluation of treatment techniques.^{6,46} A second approach is *narrative reasoning*, which uses a communicative learning and action strategy in which the context is considered with the purpose of understanding the client's meaning and perspective.⁶⁷ In

our study, we learned how participants apply these two reasoning skills collaboratively to determine what next to do with the client. We propose that this dual approach makes education most effective in addressing the needs of the client when physiotherapists use a combination of approaches that bring together education content (pain physiology, self-management, and exercise); a trusting relationship; and verbal, visual, and tactile communication. In addition, our participants indicated the importance of tacit knowledge in this process. Time spent on skilled interventions (e.g., manual therapy) is in competition with education as a separate intervention. As physiotherapists become more skilled and certain actions become tacit, there is more opportunity for coincident education to occur—consistent with Jensen's analysis of the “expert” practitioner.⁶⁸ This approach maximizes the therapeutic effect of education in the private practice environment, where there is limited time for each client.

Previous studies have suggested that some physiotherapists find it difficult when clients display emotions. The participants in this study had the same experience. One participant said she felt overwhelmed, then realized that by listening carefully to the client, and not to her own fears about being confronted by the client's emotions, she was better able to engage with the client and develop a good rapport. The client's expression of fear led the physiotherapist to reflect on her own attitudes about fear and pain, which suggests the importance of skill development for physiotherapists in relation to their own and their clients' emotions. The choice of words and the method of speaking and listening to a client are critical, because both eliciting and alleviating fear are socially driven processes.^{36,37} Physiotherapists need to be able to simultaneously pay attention to these emotions and intentionally address them. While a number of studies have shown that client or physiotherapist attitudes are important,^{38,69} we found that the attitudes of both client and physiotherapist, together in the therapeutic interaction, matter when dealing with clients' fears and anxieties. These empathic responses by participants extend beyond the verbal; their use of touch and vision also contributes to physiotherapist–client communication.

Touch as a form of communication, combined with language, can convey complex or multiple meanings.⁷⁰ The role of touch in a therapeutic relationship is multifaceted, and physiotherapists occupy a privileged social position that permits physical contact with their clients. In fact, as the participants in this study indicated, clients expect to be touched. Touch dominates nonverbal communication in physiotherapy,⁴⁹ and different types of touch are used for a combination of purposes.⁵¹ Participants described using tactile information to extend their understanding of their clients' conditions as well as to provide reassurance (“caring touch”⁵¹). In addition, touch can elicit emotional reactions⁷¹ and lead to other

important connections with a client. Through touch, physiotherapists can pick up different messages. As Thornquist wrote, “the body ‘tells.’”^{72(p.143)} And as Finch observed, “when we’re working with people’s bodies, they not only bring to you the obvious condition that they’re aware of, like a headache or back problems, but they also bring a lot of unconscious feeling.”^{73(p.70)} While words can be carefully selected by a client to present a specific reality, the body may tell another story, a narrative that exposes the client’s need for additional education.

In addition to touch, physiotherapists use visual cues to communicate. Eye gaze or observation is second only to touch in nonverbal communication between physiotherapists and clients.⁴⁹ As others have reported, our participants noted that physiotherapists observe body language, identifying muscle tension and facial expressions that indicate emotion and pain.⁷⁴ This type of observation is extended to “embodied consent,” whereby physiotherapists use the client’s responsiveness to an intervention to be assured of ongoing consent for a treatment.⁷⁵ These nonverbal forms of communication occur in both directions—physiotherapists touch and observe their clients, gathering information and also contributing to the clients’ understanding of their condition and their progress—and complement conversation in the physiotherapist–client relationship.

Education, as described by our participants, is the example *par excellence* of the role of tacit knowledge in physiotherapy practice. *Tacit knowledge* is the taken-for-granted and/or routinized processes, rules, and procedures essential to effective job performance. Studies have shown that tacit knowledge enables workers to be more time and effort efficient than they would be using general algorithms learned in school.⁷⁶ Multiple complex tasks can be tacitly integrated and performed swiftly without the worker’s having to stop and think about them.⁷⁷ Tacit knowledge involves the ability to integrate the elements of a task and to pay attention only to the focal element (e.g., the structure one is palpating) while keeping other elements out of mind (e.g., body position or inquiring about exercises).^{77,78} This skill is learned through specific experiences to which a person attends and that become tacit over time.⁷⁹

We propose that education in private practice is tacitly performed among concurrent multiple tasks (e.g., explaining an exercise), thus allowing attention to be paid to the treatment (e.g., ultrasound, manual therapy), the focal point. The physiotherapist must gather and process client information from many sources—verbal, tactile, and visual—to be able to determine the appropriate information that the client needs and will be able to use effectively. These processes are occurring at a subconscious level while the physiotherapist is attentively delivering a treatment. One challenge of managing practice based partially on tacit knowledge is incorporating

new knowledge and skills.⁸⁰ To make any change requires a return of attention to a task that has become routine; this takes effort, and will likely result in short-term inefficiency. Consequently, knowledge translation faces considerable resistance because of the constant time pressure in private practice.⁷⁵ In this study, we found that education provides continuity by tying together separate tasks that occur during one treatment session. If education is a separate task, the routine of the seamless therapeutic session may be altered or lengthened, and time may become more of an issue. In addition, much of the currently useful tactile and visual client information, gathered as assessment and/or treatment takes place, that allows the physiotherapist to adjust content or emphasis may be lost.

The tacit nature of education delivery may explain our participants’ preference for one-on-one education where the therapeutic relationship is established. This is in keeping with the client-centred concept that “the foundation of care given by practitioners is the relationship between the practitioner and the patient, a relationship vitally important to both.”^{45(p.212)} One-on-one education sessions are core to physiotherapy, and our participants have outlined their value: building rapport, engaging emotionally with the client, individualizing the delivery and content—these are consistent with the recommendation that management of LBP should not be recipe driven.⁸¹

LIMITATIONS

This study included physiotherapists as participants from across one Canadian province in 2006. Although every attempt was made to hear from all the participants, other perspectives might have been gathered through individual interviews. Observation of physiotherapists in practice might also have enhanced our understanding. The experiences that participants related were specific to their practice, which involved managing SA-LBP in injured workers in a private-practice setting. SA-LBP is treated in many other environments, and by practitioners with different backgrounds or approaches; the findings from this study may not reflect practice in other environments.

CONCLUSION

In private practice, education is a multidimensional concept; physiotherapists provide education to their clients using one-on-one time and the physical and visual contact opportunities afforded them. Notwithstanding the limited charted information that stimulated this study, we found that there is a continual exchange of verbal, tactile, and visual information, often while the physiotherapist is providing another intervention (e.g., delivering ultrasound), and this has been considered

an example of physiotherapists performing at an expert level.^{2,68}

Education is a highly valued aspect of practice for physiotherapists. Built from the knowledge obtained from touch, observation, and measurement and information related to their condition provided by clients in conversation, education is a bridge between the injured client and the physiotherapist. Information obtained from the client's body as assessment and treatment progress is explored, expanded, and contextualized in conversation with the client. Continuity rather than separation exists between "saying" and "doing." In a communicative interactive process, client fears, other contextual information, and physiotherapist information about procedures and techniques, exercises, and anatomy are collaboratively interrelated.^{6,47} The integration of information occurs tacitly and blends with the delivery of a treatment. Inclusion of best practices in daily work, such as new content or more effective approaches, requires the physiotherapist to attend to these tacit processes, adjust them, and integrate the renewed approach back into the seamless care that has previously been mastered.

KEY MESSAGES

What Is Already Known on This Topic

Physiotherapists are aware that educating their clients is very important and are aware of the importance of attending to the psychological and emotional impacts of fear of pain on movement in their clients. There is also a growing understanding of the importance of prevention during the subacute phase of healing in clients with low back pain (LBP).

What This Study Adds

This study examines the complex therapeutic relationship that is established between physiotherapists and injured worker clients with subacute LBP in private practice. The paper presents findings that make clear that educational content is but a small part of the education process, which involves building relationships in which exploration of emotions and psychological response to pain occur, conveying traditional as well as current content, and explaining pain science. To be successful in this role, physiotherapists build on their tacit knowledge and their understanding of the individual needs of their clients.

REFERENCES

- Gahimer J, Domholdt E. Amount of patient education in physical therapy practice and perceived effects. *Phys Ther.* 1996;76:1089–96.
- Jensen G, Gwyer J, Shepard K, Hack L. Expert practice in physical therapy. *Phys Ther.* 2000;80:28–43.
- Chase I, Elkins J, Readinger J, Shepard K. Perceptions of physical therapists toward patient education. *Phys Ther.* 1993;73:787–96. doi:10.1016/B978-141600214-7.50016-1
- Trede F. Physiotherapists' approaches to low back pain education. *Physiotherapy.* 2000;86:427–33. doi:10.1016/S0031-9406(05)60832-2
- Grannis C. The ideal physiotherapist as perceived by the elderly patient. *Phys Ther.* 1981;61:479–86.
- Edwards I, Jones M, Carr J, Braunack-Mayer A, Jensen G. Clinical reasoning strategies in physical therapy. *Phys Ther.* 2004;84:312–30.
- American Physical Therapy Association. Guidelines: physical therapy claims review (G08-03-03-07). Alexandria (VA): The Association; 2007.
- Harman K, Fenety A, Hoens A, Crouse J, Padfield B. Physiotherapy and low back pain in the injured worker: an examination of current practice during the subacute phase of healing. *Physiother Can.* 2009;61:88–106. doi:10.3138/physio.61.2.88
- Accreditation Council for Canadian Physiotherapy Academic Programs, Canadian Alliance of Physiotherapy Regulators, Canadian Physiotherapy Association, Canadian Universities Physical Therapy Academic Council. Essential competency profile for physiotherapists in Canada. Toronto; 2009.
- American Physical Therapy Association. Guide to physical therapist practice. *Phys Ther.* 2001;81(1):9–744.
- Harman K, Bassett R, Fenety A, Hoens A. "I think it, but don't often write it": the barriers to charting in private practice. *Physiother Can.* 2009;61:252–8. doi:10.3138/physio.61.4.252
- Sluijs E. A checklist to assess patient education in physical therapy practice: development and reliability. *Phys Ther.* 1991;71:561–9.
- Kerssens J, Sluijs E, Verhaak P, Knibbe H. Educating patient educators: enhancing instructional effectiveness in physical therapy for low back pain patients. *Patient Educ Couns.* 1999;37:165–76. doi:10.1016/S0738-3991(99)00003-8
- Kolt G, McEvoy J. Adherence to rehabilitation in patients with low back pain. *Manual Ther.* 2003;8:110–6. doi:10.1016/S1356-689X(02)00156-X
- Bartlett E. At last, a definition [editorial]. *Patient Educ Couns.* 1985;7:323–4. doi:10.1016/0738-3991(85)90041-2
- Ashton J, Butler M, Bridge M, Griffiths R, Hawtin J, Kendall N, et al., editors. New Zealand acute low back pain guide; incorporating the guide to assessing psychosocial yellow flags in acute low back pain. 2nd ed. Wellington (New Zealand): Accident Compensation Corporation, New Zealand Guidelines Group; 2004.
- Bränström H, Fahlström M. Kinesiophobia in patients with chronic musculoskeletal pain: differences between men and women. *J Rehabil Med.* 2008;40:375–80. doi:10.2340/16501977-0186
- George S, Fritz J, Childs J. Investigation of elevated fear-avoidance beliefs for patients with low back pain: a secondary analysis involving patients enrolled in physical therapy clinical trials. *J Orthop Sport Phys Ther.* 2008;38:50–8. doi:10.2519/jospt.2008.2647
- Linton S, Halldén K. Can we screen for problematic back pain? a screening questionnaire for predicting outcome in acute and sub-acute back pain. *Clin J Pain.* 1998;14:209–15.
- Linton S. Description of a program for cognitive behavioural therapy for spinal pain. In: Linton S. Understanding pain for better clinical practice: a psychological perspective. Edinburgh: Elsevier; 2005. p. 741–9.
- Moseley G. Evidence for a direct relationship between cognitive and physical change during an education intervention in people with chronic low back pain. *Eur J Pain.* 2004;8:39–45. doi:10.1016/S1090-3801(03)00063-6
- Vlaeyen J. Fear in musculoskeletal pain. In: Dostrovsky JO, Carr D, Koltzenburg M, editors. Progress in pain research and management. Seattle: IASP Press; 2003. p. 631–50.
- Fritz J, George S. The use of a classification approach to identify subgroups of patients with acute low back pain. *Spine.* 2000;25:106–14.
- Watson P, Kendall N. Assessing psychosocial yellow flags. In: Gifford

- LS, editor. Biopsychosocial assessment and management: relationships and pain. Falmouth (UK): CNS Press; 2000. p. 111–30.
25. Gard G, Gyllensten A, Salford E, Ekdahl C. Physical therapists' emotional expressions in interviews about factors important for interaction with patients. *Physiotherapy*. 2009;86:229–40. doi:10.1016/S0031-9406(05)60908-X
26. Gard G. Are emotions important for good interaction in treatment situations? *Physiother Theory Pract*. 2004;20:107–19. doi:10.1080/09593980490452995
27. Potter M, Gordon S, Hamer P. The difficult patient in private practice physiotherapy: a qualitative study. *Aust J Physiother*. 2003;49:53–61.
28. Lethem J, Slade PD, Troup JD, Bentley G. Outline of a fear-avoidance model of exaggerated pain perception. *Behav Res Ther*. 1983;21:401–8. doi:10.1016/0005-7967(83)90009-8
29. Waddell G, Newton M, Henderson I, Somerville D, Main CJ. A Fear-Avoidance Beliefs Questionnaire (FABQ) and the role of fear-avoidance beliefs in chronic low back pain and disability. *Pain*. 1993;52:157–68. doi:10.1016/0304-3959(93)90127-B
30. Moseley G, Nicholas M, Hodges P. A randomized controlled trial of intensive neurophysiology education in chronic low back pain. *Clin J Pain*. 2004;20:324–30. doi:10.1097/00002508-200409000-00007
31. Burton AK, Waddell G, Tillotson KM, Summerton N. Information and advice to patients with back pain can have a positive effect: a randomized controlled trial of a novel educational booklet in primary care. *Spine*. 1999;24:2484–91.
32. Jimmy G, Martin B. Implementation and effectiveness of a primary care based physical activity counselling scheme. *Patient Educ Couns*. 2004;56:323–31. doi:10.1016/j.pec.2004.03.006
33. Foster N, Bishop A, Thomas E, Main C, Horne R. Illness perceptions of low back pain patients in primary care: what are they, do they change and are they associated with outcome? *Pain*. 2008;136:177–87. doi:10.1016/j.pain.2007.12.007
34. Shacklock M. *Clinical neurodynamics: a new system of musculoskeletal treatment*. Edinburgh: Elsevier; 2005.
35. Moseley G. Joining forces—combining cognition-targeted motor control training with group or individual pain physiology education: a successful treatment for chronic low back pain. *J Manual Manip Ther*. 2003;11(2):88–94. doi:10.1179/106698103790826383
36. Boston A, Sharpe L. The role of threat-expectancy in acute pain: effects on attentional bias, coping strategy effectiveness and response to pain. *Pain*. 2005;119:168–75. doi:10.1016/j.pain.2005.09.032
37. Vlaeyen J, Linton S. Are we “fear-avoidant”? *Pain*. 2006;124:240–1. doi:10.1016/j.pain.2006.06.031
38. Houben R, Gijzen A, Peterson J, de Jong P, Vlaeyen J. Do health care providers' attitudes towards back pain predict their treatment recommendations? differential predictive validity of implicit and explicit attitude measures. *Pain*. 2005;114:491–8. doi:10.1016/j.pain.2005.01.017
39. Daykin A, Richardson B. Physiotherapists' pain beliefs and their influence on the management of patients with chronic low back pain. *Spine*. 2004;29:783–95. doi:10.1097/01.BRS.0000115135.19082.97
40. Ostelo R, Vlaeyen J. Attitudes and beliefs of health care providers: extending the fear-avoidance model [editorial]. *Pain*. 2008;135:3–4. doi:10.1016/j.pain.2007.12.003
41. Gebhart GF, Hammond D, Jensen T, editors. *Perspectives on management of back pain in primary care*. Seattle: IASP Press; 1994.
42. Rainville J, Bagnall D, Phalen L. Health care providers' attitudes and beliefs about functional impairments and chronic back pain. *Clin J Pain*. 1995;11:287–95.
43. Butler DS, Moseley G. *Explain pain*. Adelaide (Australia): NOIgroup Publications; 2003.
44. Klaber Moffett JA, Richardson P. The influence of the physiotherapist-patient relationship on pain and disability. *Physiother Theory Pract*. 1997;13:89–96. doi:10.3109/09593989709036451
45. Payton O, Nelson C, St Clair Hobbs M. Physical therapy patients' perceptions of their relationships with health care professionals. *Physiother Theory Pract*. 1998;14:211–21. doi:10.3109/09593989809057167
46. Edwards I, Jones M, Hillier S. The interpretation of experience and its relationship to body movement: a clinical reasoning perspective. *Manual Ther*. 2006;11:2–10. doi:10.1016/j.math.2005.10.002
47. Thornquist E. Face-to-face and hands-on: assumptions and assessments in the physiotherapy clinic. *Med Anthropol*. 2006;25:65–97. doi:10.1080/01459740500514489
48. May S. Patients' attitudes and beliefs about back pain and its management after physiotherapy for low back pain. *Physiother Res Int*. 2007;12(3):126–35. doi:10.1002/pri.367
49. Roberts L, Bucksey S. Communicating with patients: what happens in practice? *Phys Ther*. 2007;87:586–94. doi:10.2522/ptj.20060077
50. Gyllensten A, Gard G, Salford E, Ekdahl C. Interaction between patient and physiotherapist: a qualitative study reflecting the physiotherapist's perspective. *Physiother Res Int*. 1999;4:89–109. doi:10.1002/pri.156
51. Roger J, Darfour D, Dham A, Hickman O, Shaubach L, Shepard K. Physiotherapists' use of touch in inpatient settings. *Physiother Res Int*. 2002;7(3):170–86. doi:10.1002/pri.253
52. Fordyce WE. Pain viewed as a learned behaviour. *Adv Neurol*. 1974;4:15–22.
53. Moores LL, Watson PJ. The development of a measurement tool for the assessment of pain behaviour in real time. *Physiotherapy*. 2004;90:12–8.
54. Purlito R, Haddad A. Respectful communication in an information age. In: Purlito R, Haddad A, editors. *Health professional and patient interaction*. Philadelphia: W.B. Saunders; 2002. p. 157–84.
55. Slade S, Molloy E, Keating J. “Listen to me, tell me”: a qualitative study of partnership in care for people with non-specific chronic low back pain. *Clin Rehabil*. 2009;23:270–80. doi:10.1177/0269215508100468
56. Fassaert T, van Dulmen S, Schellevis F, Bensing J. Active listening in medication consultations: development of the Active Listening Observation Scale (ALOS-global). *Patient Educ Couns*. 2007;68:258–64. doi:10.1016/j.pec.2007.06.011
57. Holstein J, Gubrium J. Active interviewing. In: Gubrium J, Holstein J, editors. *Postmodern interviewing*. Thousand Oaks (CA): Sage; 2003. p. 67–80.
58. Rose M. “Our hands will know”: the development of tactile diagnostic skill—teaching, learning, and situated cognition in a physical therapy program. *Anthropol Educ Quart*. 1999;30(2):133–60. doi:10.1525/aeq.1999.30.2.133
59. Laitinen-Väänänen S, Talvitie U, Luukka M. Construction of the client in physiotherapy student's practical learning sessions: a discourse analytic study. *Learn Health Soc Care*. 2008;7:2–11. doi:10.1111/j.1473-6861.2008.00172.x
60. Barlow D. Interviews. In: Mills A, Durepos G, Wiebe E, editors. *Encyclopedia of case study research*. Thousand Oaks (CA): Sage; 2010. p. 495–9.
61. Ulin P, Robinson E, Tolley E. *Qualitative methods in public health: a field guide for applied research*. San Francisco: Jossey-Bass; 2005.
62. Grbich C. *Qualitative research in health: an introduction*. Thousand Oaks (CA): Sage; 1999.
63. Boyatzis R. *Transforming qualitative information: thematic analysis and code development*. Thousand Oaks (CA): Sage; 1998.
64. Luborsky M. The identification and analysis of theme and patterns. In: Gubrium J, Sankar A, editors. *Qualitative methods in aging research*. Thousand Oaks (CA): Sage; 1994. p. 189–210.
65. Bassett R. Iterative. In: Mills A, Durepos G, Wiebe E, editors. *Encyclopedia of case study research*. Thousand Oaks (CA): Sage; 2010. p. 503–5.
66. Maitland GD. *Vertebral manipulation*. 5th ed. Oxford: Butterworth-Heinemann; 1997.
67. Mattingly C. The narrative nature of clinical reasoning. *Am J Occup Ther*. 1991;45:998–1005.

68. Jensen G, Shepard K, Hack L. The novice versus the experienced clinician: insights into the work of the physical therapist. *Phys Ther.* 1990;70:314–23.
69. Jette D, Bacon K, Batty C, Carlson M, Ferland A, Hemingway R, et al. Evidence-based practice: beliefs, attitudes, knowledge and behaviours of physical therapists. *Phys Ther.* 2003;83:786–805.
70. Dobson S, Upadhyaya S, Conyers I, Raghavan R. Touch in the care of people with profound and complex need: a review of the literature. *J Learn Disabil.* 2002;6:351–62. doi:10.1177/146900470200600402
71. Ekerholt K, Bergland A. Massage as interaction and a source of information. *Adv Physiother.* 2006;8:137–44. doi:10.1080/14038190600836809
72. Thornquist E. Diagnostics in physiotherapy—processes, patterns and perspectives, part I. *Adv Physiother.* 2001;3:140–50. doi:10.1080/140381901317173687
73. Jones R. Touch for homeless clients: San Francisco's Care Through Touch Institute. *Massage and Bodywork.* 2008 Sep–Oct;71–9.
74. Hadjistavropoulos T, Craig KD, Fuchs-Lacelle. Social influences and the communication of pain. In: Hadjistavropoulos T, Craig KD, editors. *Pain: psychological perspective.* Mahwah (NJ): Lawrence Erlbaum; 2004. p. 87–112.
75. Fenety A, Bassett R, Harman K, Hoens A. Informed consent practices of physiotherapists in the treatment of low back pain. *Manual Ther.* 2009;14:654–60. doi:10.1016/j.math.2009.02.007
76. Colonia-Willner R. Investing in practical intelligence: aging and cognitive efficiency among executives. *Int J Behav Dev.* 1999;23:591–614. doi:10.1080/016502599383711
77. Waterson R. Enduring landscape, changing habitus: the Sa'dan Toraja of Sulawesi, Indonesia. In: Hillier J, Rooksby E, editors. *Habitus: a sense of place.* Aldershot (UK): Ashgate; 2005. p. 334–55.
78. Giddens A. *Modernity and self-identity: self and society in the late modern age.* Cambridge: Polity Press; 1991.
79. D'Eridita M, Barreto C. How does tacit knowledge proliferate? an episode-based perspective. *Organ Stud.* 2006;27:1821–41. doi:10.1177/0170840606067666
80. Iles R, Davison M. Evidence based practice: a survey of physiotherapists' current practice. *Physiother Res Int.* 2006;11(2):93–103. doi:10.1002/pri.328
81. Green S, Piehl J. Clinical practice guidelines: a guide to better practice, not a recipe for uniformity. *Aust J Physiother.* 2003;49:3–4.