The clinical application of touch: decision making from an 'emotion-informed' perspective

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The application of touch in physiotherapy may have therapeutic benefit through several possible mechanisms, but may not always be appropriate. This article will provide a brief introduction to how the presenting emotional state of the patient can influence our decision making with regard to if, when and how touch may be applied within the clinical context, with examples based on real cases.

LEARNING OUTCOMES
TO SUPPORT PHYSIO FIRST QAP

1 Understand how the limbic system and emotional factors may influence the biological, psychological and behavioural aspects of patient presentation
2 Understand how an "emotion-informed" approach influences the decision-making process regarding the role, appropriateness and application of touch in the clinical setting.

Introduction

The word "touch" could generate a lengthy discussion in itself. Our language is rich with references which indicate its significance beyond the physical dimension of applying a hand to receive or transmit information. We describe ourselves as "being touched" when we are emotionally influenced by someone or something. To "stay in touch" is to extend an invitation to remain connected, and "losing your touch" carries fearful implications of diminished relevance or skill. Touch is clearly deeply integrated into our experience of social belonging and communication.

Patients usually have an expectation that physiotherapy will involve some form of physical contact, and it is often a core component of many physiotherapists' treatment approach. The efficacy of manual therapy has been widely debated recently, but the therapeutic benefits of touch may come from factors other than the application of a specific technique and, as such, may be difficult to capture within the constraints of a randomised controlled trial. In some cases, owing to non-structural factors, a physical treatment approach may not be the most appropriate intervention. In others, direct physical contact should initially be avoided. The understanding, perception and management of emotions of both the therapist and the patient are key factors in our clinical judgement in respect to the use of touch. Rather than debating hands-on or hands-off, an informed consideration of this dimension reveals a more nuanced discussion regarding the application of our hands to the patient.

Emotions

The mind and body form a "psycho-biological whole" (Keele *et al* 1983). Our physiological status is monitored by the brain and associated with an emotion. If the physiology changes, so will the emotion. Conversely, if our emotional state (affect) changes, even if artificially induced, there is a corresponding change in our physiology (Wiswede *et al* 2009; Payne *et al* 2015). The biopsychosocial perspective (Engel 1977) is now well established in our professional approach, but although emotions are deeply entwined by the "bio" and "psycho" components, and it could be argued by the "social" component, they are relatively underexplored as a specific consideration in assessment and treatment.

The limbic system is the primary area of the brain concerned with emotional expression and behaviour, and functions as part of our survival mechanism in conjunction with the autonomic nervous system. It allows us to react immediately to a stimulus, before conscious awareness subsequently determines whether modification of our response is necessary (Levine & Kline 2007). This is the classic "is that long black object in the grass a snake or is it a stick?" scenario.

The broad spectrum of proprioceptive and interoceptive information arising continuously from the body is integrated through circuits that feed through the limbic system (van der Kolk 2014). The brain constructs predictions in advance of our actions, pulling from past events to create a context for the interoceptive sensations, and informing the emotion experienced (Seth 2013; Barrett 2017).

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Our emotional response in the present, therefore, may be unconsciously generated by our past experiences, beliefs, and what the situation means to us (Jepma *et al* 2018). For some clients, this response may be triggered by a sensory stimulus such as touch.

Response to threat

The Polyvagal Theory (Porges 2011) proposes that our reaction to threat or any stressful event is communicated through one of three systems, the most familiar of which is the adrenergic sympathetic nervous system, that enacts the fight or flight responses. However, to diffuse less immediate physical threat we have another proactive alternative, which is our social engagement system, mediated via the ventral branch of the parasympathetic vagus nerve (cranial X), and through which we attempt to negotiate with, or seek support from, others. In the event that these two options fail, the situation can become overwhelming and our response may then be mediated by the dorsal branch of the vagus nerve, leading to freeze, dissociation and potential collapse, such as fainting.

Healthy autonomic regulation allows us to move between systems and return to a relatively relaxed state after activating our survival strategies. However, under certain stressful situations, one system can become a persistent state,

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influencing multiple aspects of our physiology and presentation (van der Kolk 2014; Payne *et al* 2015).

Recognising emotional indicators

It is important to identify a patient's presenting emotional state and to monitor changes during the treatment session as this will influence subsequent clinical choices. There are some general observational features that can alert the experienced clinician to the effects of emotional or autonomic dysregulation. These are readily recognisable and when seen through this lens they can make a valuable contribution to the assessment.

The subjective assessment may reveal a direct history of trauma, but even "routine" procedures, such as elective surgery or dental work can be traumatic incidents, particularly in children (Levine 1997). Where an individual has issues with sleep, their digestive and immune systems, or memory and fatigue, persistent sympathetic activation and failure to access the parasympathetic regulatory state may be indicated. Many patients will have current and / or previously stressful life histories, often presenting with a combination of symptoms that seem unrelated, and have an absence of identifiable pathology.

Responses from the patient to questioning during examination may be highly animated and overly detailed, or avoidant and dismissive. Patients with an activated social engagement system, for example, can often be very conversational but divergent and unfocused in their answers, and will tend to use more varied vocal intonation and vivid facial expression as they relate their story. In a more sympathetic state, they may carry a high level of tone or tension in their body and appear more vigilant. This may present as intensity or restlessness, or may shift into being more confrontational and even aggressive if they feel insecure in the situation. Other indicators include an elevated

respiratory rate, dilated pupils, and perspiration. Hypersensitivity to sensory stimuli may cause these individuals to remark upon smells, lighting or noises in their environment. When in the state of parasympathetic (dorsal vagal) collapse, signs may include a flexed, defensive posture, low physical tonus and poor communication, avoiding eye contact, appearing passive, or "shutting down" and not being present.

Autonomic dysregulation can also affect the patient's ability to understand and learn. A highly active limbic system can be inhibitory to the prefrontal cortex, which is necessary for a wide range of executive functions (Siddiqui *et al* 2008; van der Kolk 2014). Access to declarative memory and use of language can be impaired, making it difficult for the patient to provide a clear history or offer constructive feedback (Barrett 2011; Fisher 2017). They may then appear distractible, avoidant or "difficult" on questioning. When caught in autonomic dysregulation it may be difficult for the patient to process simple information or make decisions, to reason logically or grasp meaning easily (van der Kolk 2014). They may demonstrate poor focus and struggle to interpret or follow instructions. These patients can seem incapable of making small adaptations to their lifestyle and adhering to treatment guidance, often appearing to ignore advice and quickly forgetting their rehabilitation programme.

When touch is not the answer

The background information that you gather through your observations and impressions is an important resource that can help you to make choices regarding touch, understand how to adapt your approach responsively, and understand a patient's reactions from a different perspective.

CASE STUDY:

A husband and wife presented with minor whiplash-associated symptoms following a rear end collision. Both were similar in presentation, having discomfort around the cervical region with some loss of cervical movement. Manual therapy restored their mobility and reduced their muscular spasm and discomfort within the session. On follow-up, the husband had improved but the wife had returned to pre-treatment status.

Her second treatment was similar to the first, and again, she obtained some benefit in the session. Despite good adherence to her home programme, however, she once again reverted to her pre-treatment state. At this point, other avenues of enquiry needed to be explored.

More detailed questioning identified that her symptoms were worse when travelling in the car. When asked to imagine being in a car, there was a visible bracing of her neck accompanied by a return of her discomfort. This suggested that rather than the physical tissues of the neck being the issue, it was likely that the mechanism behind her continuing symptoms involved the limbic system. She was associating being in the car with threat and the possibility of injury, and her body was responding to this situation by bracing to protect itself from potential harm.

This type of reaction may occur for two possible reasons: the "suit of armour strategy" (Elphinston 2019) can be a physical protection response to this sense of threat, or alternatively, the sensation of muscular tension can dampen the intensity of the emotions themselves (Reich 1979; van der Kolk 2014). The experience of the accident had registered in this patient's nervous system as emotional trauma and was ongoing, whereas for her husband, once tissue healing had occurred, the event was over.

Manual treatment was not helpful for this patient and her poor response to it indicated a need for more targeted investigation. This led to a recognition and understanding by both the patient and the practitioner of the trigger for her symptoms. With this information, the treatment was changed to strategies for self-regulation and a manageable plan of graded exposure to driving. It should be noted that, although not necessary for this patient, referral to an appropriate mental health professional may be the most appropriate course of action in similar cases where such measures have been ineffective.

Key learning point: in this situation, two people were in the same accident, sustaining similar injuries, yet their response and treatment requirements were entirely different. For one, the experience of manual therapy was supportive for recovery, but for the other the issue was not "in the tissues". An awareness of the emotional system provided additional insight for understanding this patient's poor response to treatment and indicated a different clinical direction.

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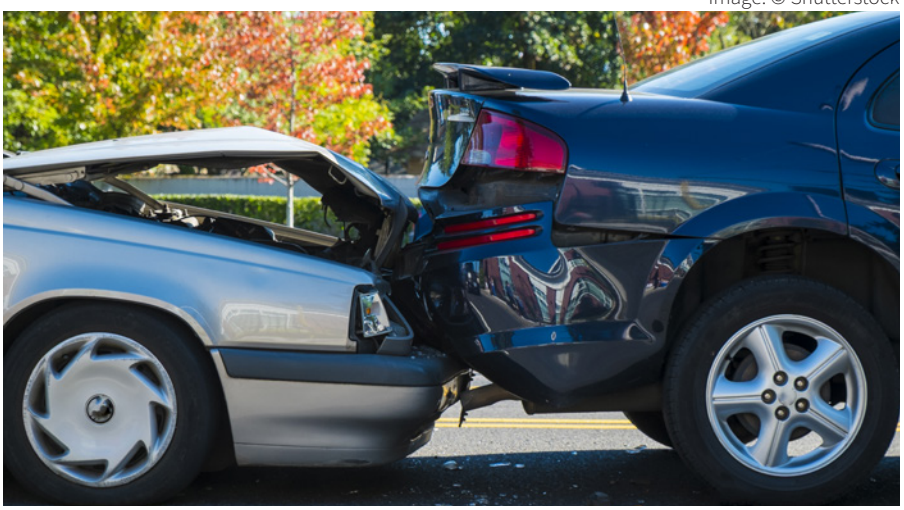

Touch for support and awareness

In some cases, we may decide to use touch for reasons other than the application of a specific technique. For example, touch is the most natural way for us to calm distress and is of vital importance for attachment, growth and development in babies (Fisher 2017; Crucianelli *et al* 2019; Narvaez *et al* 2019; Simpson *et al* 2019). For the physiotherapist, it can be a way to enhance our therapeutic alliance, influence behaviour and compliance (Gallace & Spence 2010), potentially modify sensitisation states (Casals-Gutiérrez & Abbey 2020) and enhance the patient's capacity for pain management (Kerr *et al* 2019).

Sometimes a patient needs to learn how to feel their body before they can understand the sensations arising from their own movement. In clients with trauma, post-traumatic stress disorder (PTSD), anxiety, depression and other health problems, the parts of the brain which process sensation may not function normally (Bluhm *et al* 2009; Avery *et al* 2014; Payne *et al* 2015; Paulus *et al* 2018). Although the information is available, they cannot accurately interpret the signals (Krautwurst *et al* 2014) and can lose their sense of body ownership and agency (Rabellino *et al* 2018). These brain areas are also hijacked in chronic pain states and, over time, begin to degrade (Doidge 2011). Changing the sensory experience associated with a movement lights up the nervous system and helps to facilitate change (Elphinston 2019). Even self-touch can encourage a sense of safe body ownership (Hara *et al* 2015), helping the patient to reconnect to their body, understand where they are in space and establish a new sensory relationship that is not based on pain.

Putting a hand on a patient does not constitute meaningful touch. Clarity of intention for the tactile inputs is necessary for positive and effective communication. As physiotherapists, our own emotional state should be well regulated to avoid inadvertent emotional transference to the patient, and congruent with our facial expressions to prevent misinterpretation (Hertenstein *et al* 2006; Gallace & Spence 2010; Ravaja *et al* 2017; Kirsch *et al* 2018). Numerous touch factors such as contact surface area, pressure, depth and grading, speed and rhythm can all be adjusted to clearly communicate our intention, and can be instantly modified according to the responses of the patient.

When touch provokes the emotions

Emotional coupling can occur not just to an external object or situation, but internally to a body region or specific part that has been injured. Emotions may be connected to the area through visual observation of it, kinaesthetic feedback (movement or task specific) or sensory perception, such as touch. These inherent emotions can lie dormant for a long time (Heller & LaPierre 2012; van der Kolk 2014) and they can resurface when the patient is reconnected to the area through well-meaning therapeutic touch. The results can range from minor

CASE STUDY:

A former rugby player had been injured out of the sport many years previously with an ACL rupture. He had completed his rehab and was regularly lifting large weights in the gym, but it was noticeable that there was still some avoidance of his injured leg. He needed to improve his weight acceptance on this side and re-establish a better movement pattern.

A seated lateral lunge on an exercise ball was chosen as a starting point, as the reduced load and limited range of motion constituted minimal structural threat and should have been sufficiently easy for him to perform successfully. However, as he moved forward over the foot, his body tipped back away from the knee and he started to sweat. Fear appeared on his face, his communication shut down and he changed emotionally from relaxed to angry. Touch can let people know where they are in space and that they are safe (van der Kolk 2014). This patient was informed that the rate, range and rhythm of the movement would be carefully controlled by the therapist's hand. Through this he could be encouraged forward onto the leg while receiving clear, unambiguous feedback. The hand was there to offer a brake if necessary, and define the end point of the movement.

To convey security for this purpose, the contact needed to be consistent in pressure to communicate that the movement boundary was well defined, and applied over a broad surface area, in this case, with a widespread hand. This calmed the patient as he was not solely responsible for the outcome of the movement, he had more sensory awareness, and the range of motion was clear and controlled. Applying supportive touch to this patient's knee enhanced his sensory awareness, helping his brain to more easily process where his leg was and the parameters of its motion.

The exercise progressively improved in a relaxed, emotional state over a number of repetitions which allowed a new motor pattern to emerge that he could take away and repeat on his own with confidence. Although this patient was physically capable of performing this simple task, touch was applied in this case to address the underlying emotional element which had unexpectedly appeared.

Key learning point: this patient was unaware of the emotional association he had maintained from the past with regard to his injured leg, but his response shed light on why his rehabilitation had been less effective than expected. This avoidant strategy can be associated with sensory dissociation, which can inhibit proprioceptive feedback, create insecurity around new movement experiences and prevent motor learning. Appropriate touch was the first step in addressing these issues.

emotional upset to full emotional crisis and trauma recall, where the patient's brain may take them back to the past event and relive it in the present.

If, for example, the patient believes they were responsible for an accident, or survived an event when others didn't, their recall of the event may be coupled with guilt and possibly shame. For assault victims, the coupled emotions may include fear, panic, anger or rage. Feelings of helplessness and vulnerability may also become coupled to the anatomy. This is common around the pelvic area for patients with a history of abuse and rape, or even following childbirth and "routine" surgical procedures. Consequentially, the injured area can be psychologically disconnected and removed from the patient's sensory awareness (dissociated) as an emotional protective strategy (Howell 2005; Seligman & Kirmayer 2008). Dissociation is particularly common in children, often being their only strategy as they are usually unable to fight or flee (Levine & Kline 2007; Heller & LaPierre 2012). It is exceptionally important to be mindful of how we interact with such patients when a trauma history is confirmed or could be suspected. Touch may unintentionally create a connection to an area which is loaded with emotional content.

This does not mean that we cannot work with patients with a trauma history or an emotionally labile presentation. It is possible to successfully treat the physical effects of past trauma without having to expose the trauma memory. Our role is to treat the physical symptoms not the trauma, and practising in an "emotionally informed" manner can help to navigate these situations.

Approaches to treatment in such cases should include:

- consideration of potential trauma indicators in the patient's history, and observation of their responses to questioning
- checking that the patient really understands and accepts the proposed treatment plan when obtaining informed consent

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- consideration of technique or position choices and whether they can be adapted for a less potentially provocative position, e.g. for the hip patient who is displaying signs of emotional dysregulation, choose a less vulnerable and exposed position than a Thomas test, or to mobilise the soft tissues under the scapula, select side lying with the arm in neutral rather than prone with the hand behind the back. In the case of a child, lying in supine or prone can represent a position of vulnerability, so alternative treatment positions are advisable.

When viewed from an emotion-informed perspective, it can be surprising to realise that some routine techniques and positions may constitute a challenging experience for the patient.

Pay close attention to any emotional signs, for example a change in the patient's breathing pattern or expressions of discomfort, particularly if they do not correlate with the type of touch being applied. Therapists should be especially vigilant to the patient suddenly appearing to withdraw or shut down, should note any change in body tension or facial expression, and be prepared to pause treatment, question and check-in with the patient and, if necessary, change the plan for the session.

In the event that the patient's emotions start to take hold, there are some simple measures that can be implemented to manage the immediate situation:

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- Invite the patient sit up or stand and gently move if they need to.
- Orientate the patient to their present time and environment, for example by asking them to identify features in the room, feel the texture of their clothing, or how the floor feels under their feet.
- Talk the patient through some gentle breathing control exercises, particularly extending the exhalation, to help settle the emotions.

These techniques restore a sense of the present for the patient and reassures them that they are in a safe environment.

The likelihood of an adverse emotional reaction is extremely low and greatly reduced with careful attention to the patient's emotions from the outset. However, if touch has triggered a reaction, adjustments to your treatment approach can accommodate this. If the emotional component of the patient's presentation is deemed significant and might be obstructive to the physiotherapy treatment being delivered, they may need additional help from a suitably qualified professional to supplement the treatment plan. In such cases it is particularly important to reassure the patient that they are not being abandoned, but rather the aim is to ensure a comprehensive treatment approach.

Summary

Touch is more than just physical: it gives us an emotional interface with the patient and can help us to address a patient's emotional state, associations and response to the treatment process.

In some cases, touch may not be appropriate at that moment, or is not the best technique to manage an emotionally driven problem. When it is used, the physiotherapist has a responsibility to be self-aware about how they are using touch; their purpose and motivations, how they apply it, the quality of delivery, and to monitor how it is being received by the patient.

If we are to offer a truly holistic service to our patients, their emotional state and our own must be acknowledged and

weighed in any clinically reasoned treatment approach. An understanding of emotional involvement and presentation, together with the application of "emotion-informed" touch can enhance our patient experience and our potential for therapeutic effectiveness.

About the author

Kent Fyrth is a private practitioner and lecturer based in Cardiff, specialising in trauma and its somatic presentations. He is a physiotherapist, JEMS® tutor and was the first UK-based physiotherapist to qualify as a Somatic Experiencing® Practitioner. In addition to the JEMS® movement approach, his background has encompassed a variety of manual therapies, chronic pain management and trauma techniques, and he lectures on the recognition and practical management of emotional factors in musculoskeletal presentations.

For further information, please see **www.jemsmovement.com.**

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