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INTRODUCTION

One of the key factors contributing to a positive or negative experience of massage is the manual pressure (MP) applied by the therapist. A massage with insufficient pressure can be ineffective, whereas a massage with too much pressure can lead to aggravation of pain and sometimes tissue damage (Butler & Moseley, 2017; Diego et al., 2004). Client-therapist communication about MP is influenced by unconscious assumptions, power dynamics, and social conditioning, making effective communication more difficult than it might seem on the surface. The pressure tolerance scale described in this article has been developed within the Otago Polytechnic massage therapy programme to improve the clarity of pressure-related communication. This article describes the scale, its theoretical basis in clinical practice, and how it can be used to improve clinical communication. The authors also present and discuss recommendations based on their experiences using this scale in private practice and in clinical supervision.

WHAT IS THE PROBLEM?

Pain is a private, subjective experience that we are all familiar with, but rarely discuss in any depth with others. We all understand what a chair is because we can see it, but do we really know what someone else means when they say "achy"? Individuals have radically different experiences of pain frequency and intensity. The nervous systems of people who experience chronic pain undergo changes, making the intensity and quality of their pain significantly different to those who only experience pain intermittently (for example, acute pain) (Miglio & Stanier, 2022; Moseley & Butler, 2017). Unconscious assumptions about the experience of the other person can lead to misinterpretation.

During massage therapy practice, it is important to adapt your pressure for each individual client, for different body areas, and for different types of massage stroke. Clients have varying levels of nervous system sensitivity and muscle development. Broader strokes (for instance, palm delivered) are less intense than focussed pressure strokes (for instance, thumb delivered). Regions of increased tissue density are often more sensitive than other areas. Effective massage application relies on good communication about the client's experience of pressure as the therapist moves between healthy and dysfunctional areas of the body and between different styles of massage application.

However, clinical communication about the client's experience of pressure is often ineffective due to power dynamics and social conditioning. In the authors' experience, massage therapists

typically ask their clients, "Is that pressure OK?" This type of question is unlikely to give therapists the information they seek. When supervising massage students' clinical work, the authors noticed that clients almost always reply to this question with "sure" or something similar, even when nonverbal signs (such as flinching or a sharp intake of breath) suggest that the MP is not ideal for that client. The power dynamics implicit in the therapeutic relationship may make it difficult for some clients to let the therapist know they are using more or less MP than the client would like (Boring et al., 2021). It may feel to the client as if they are criticising the therapist's ability to do their job. Some clients have been socialised into thinking that "no pain, no gain" makes sense for massage. These clients will guide the therapist to use more pressure than is ideal, potentially causing tissue bruising or sensitisation.

THE PRESSURE TOLERANCE SCALE

The Pressure Tolerance Scale (PTS) was developed to improve the quality of communication between therapists and clients about pressure and pain. The original scale emerged from a meeting where staff of the Otago Polytechnic massage therapy programme (the authors and Jacky Keen) discussed the problems mentioned in the previous section. At this point in time the authors were not aware of any MP scales which were centred on the client's experience of pain. This scale was tested and further developed through clinical supervision and through the authors' clinical experiences, a process which is aligned with action research methodology (Robson, 2002). The Faces Scale (Kim & Buschmann, 2006) was added to support client understanding, leading to the PTS which is presented in Figure 1.

New clients are introduced to the scale during their initial interview using the image in Figure 1. The numbers on the left represent the client's rating of manual pressure. The client experience column represents what a client feels at these different levels of pressure. The engagement column represents the therapist's normal palpatory experience when working with a client whose nervous system is not sensitised to pain (in other words, neurological wind-up). More specifically, a pressure of 1 represents skin contact. Two to 4 means that the pressure level is increasing but the client is not experiencing an increase in discomfort. At level 5 the client might say "that's the spot." The therapist will often palpate the edge of a region of increased tissue density at this point. If the therapist increases their pressure from 5, the client's experience of pain will normally increase in proportion to the increase in pressure. This increase is generally comfortable for the client until they start to experience an aversive reaction (in other words, "tensing up"). This is defined as an 8 on the pressure scale, which also defines the range of "good pain" to be 5–7. Sensitisation or neurological wind-up may cause the client's experience and the therapist's experience to diverge. If this occurs it is always best for the therapist to use the client's experience of manual pressure as their guide to what is appropriate. Once defined, the PTS is used on an ongoing basis within the massage to clarify the client's experience of pressure and pain.

The level of MP has autonomic effects related to the client's subconscious assessment of danger or safety. These effects are often clinically significant. The perception of danger (in other words, potential tissue damage) causes sympathetic activation and neurological wind-up, whereas the perception of safety has the opposite effect (Butler & Moseley, 2017; Caneiro et al., 2022). If a client tenses up in response to MP this indicates that their subconscious threat detection system is being activated. Effective use of the PTS provides a therapist with the ability to minimise the chance of this and therefore post-treatment sensitisation.

Pressure Tolerance Scale David McQuillan, Ash Rohloff, 2026

Perceived Pressure	Therapist experience (no windup)	Client experience	Faces Scale
1	Contact with the skin/superficial fascia	I can feel you touching me	
2-4	Engaged with sub-cutaneous tissues	I can feel you're engaged with the tissues No discomfort	
5-7	Engaged with the boundary (5) and outer layers of dysfunctional areas	I can feel you're on something Bringing awareness to dysfunction "Good pain" - Tender, but feels good Client can relax	
8-9	Pushing into areas of dysfunction	Invasive Client tenses up in reaction to pain	
10	Pushing into areas of dysfunction	Abusive Far too much pain	

Figure 1. The Pressure Tolerance Scale (Authors, 2026).

Most people receive a massage to relieve stress, tension, and/or pain. This article argues that achievement of these goals relies on applying MP within the range that is appropriate for each individual client. There are surprisingly few articles which attempt to define effective MP for massage therapy. Diego and colleagues (2004) defined light pressure massage as "long light stroking" (sometimes called nerve strokes) and moderate pressure massage as "long, deep pressure stroking and squeezing." In their study, light pressure massage caused stimulation, whereas moderate pressure massage caused relaxation. These terms were used widely in Touch Research Institute research investigating the application of a range of massage styles (Swedish, therapeutic, Chinese massage, and Thai massage) with light pressure and moderate pressure. Although "moderate pressure" massage was not clearly defined, a review of this work found that moderate pressure massage was more effective than light pressure massage for the reduction of pain (Field, 2017). This finding aligns with the argument of this article.

Light pressure massage (1–2) has a stimulating effect (Diego et al., 2004). The client's attention is drawn to nerve strokes and other surface-level stimulation, but there is no sense of danger. Moderate pressure massage (3–5) has a relaxing effect. Massage within the middle of the "good pain" range (6) is neither relaxing nor stimulating. Massage at the upper limit of the "good pain" range (7) is lightly stimulating. At this point the amygdala and the prefrontal cortex are on alert, monitoring the pressure in an attempt to ensure that the therapist will not cause harm to the tissues of our body (Van der Kolk, 2014). Anything above 8 will trigger the client's defences, causing muscular contraction, sympathetic activation and neurological windup (sensitisation). Massaging at this level will still not cause tissue damage (Butler & Moseley, 2017), but much beyond this (9+) will generally lead to bruising. In the opinion of the authors there is no good reason for working at a pressure of 8 or over unless the therapist's intention is to breakdown mature scar tissue.

Hopefully most therapists would prefer not to injure their clients; however, the effects of pressure on neurological wind-up (central sensitisation) are arguably more significant to the client's pain-related outcomes. This is especially true when working with clients with chronic pain.

CHRONIC PAIN, PAIN ANXIETY, AND SAFETY LEARNING

When massaging clients with chronic pain, pain anxiety is often triggered and frequently affects the outcomes of treatment. Pain anxiety is "a cognitive and behavioural response to an evaluation that the body is in danger and needs protecting" (Caneiro et al., 2022, p. 2). The transition from acute to chronic pain involves the sensitisation of pain pathways (neurological windup). Those living with chronic pain often experience pain flares that are unpleasant, uncontrollable, and unpredictable (Caneiro et al., 2022). These flares can significantly impact one's ability to engage socially and complete activities of daily living. Fear of this experience, in other words pain anxiety, typically causes distress and leads to pain avoidance behaviours, sympathetic activation, and further sensitisation (Belda et al., 2015; Rogers & Farris, 2022). There is a growing understanding that interventions providing experiences of safety to people with sensitised nervous systems are one of the most effective ways to overcome chronic pain (Butler & Moseley, 2017; Caneiro et al., 2022).

Much of the remainder of this article describes guidelines and interpretations based on the authors' personal use of, and their observation of students using, the PTS in clinical practice. These guidelines and interpretations are also based on the theory discussed in this article.

During a massage, if perceived MP regularly reaches 8 or higher on the PTS, most clients will probably start to experience pain anxiety and some degree of neurological windup. Even when the pressure level is around 7 (and within the "good pain" range), a certain level of pain anxiety will likely develop, especially if the pressure sometimes drifts into an 8. This is because when the therapist is working at a pressure level of 7, clients are aware that they are close to the edge of their window of pressure tolerance and will to some degree be on the alert. For clients with high levels of pain anxiety, a pressure of 7 may be enough to cause sensitisation. Pressure-related sensitisation can be identified when the client reports that their PTS rating is increasing even though the therapist's pressure to an area is not. Guidelines for dealing with pressure-related sensitisation using the PTS are described in the following section.

The sensitisation picture is complicated by other ways that massage affects pain. Manual pressure overrides pain signals immediately, closing the "pain gate" or interface between the peripheral and central nervous system (Melzack & Wall, 1965). Gate effects interfere with pain signals while pressure is applied. Painful massage, especially trigger point treatment, should in theory bring about the release of endorphins causing short-term pain relief (Felicione et al., 2024; Hseih et al., 2012). Because of these short-term effects, a client with central sensitisation (for instance, fibromyalgia) may initially feel good after a high intensity massage, only to experience a debilitating flare-up once these effects wear off. Such anecdotes are common in the fibromyalgia and chronic pain community and are discussed in online fora (InternationalAsk97, 2022); however, this issue does not appear to have been identified or discussed in the literature to date. In the authors' experience someone who has had a post-massage flare is unlikely to re-engage with massage therapy. In summary, MP which exceeds the client's pressure tolerance is likely to cause sensitisation. It is important that therapists stay within the range which feels safe to the client (in other words, the range of "good pain").

USING THE PRESSURE TOLERANCE SCALE – GUIDELINES AND CHALLENGES

In the authors' experience, the PTS improves the chance of positive massage outcomes while minimising the chance of poor outcomes. Effective use of the scale is however more complex than simply describing the PTS then using it. From one appointment to the next, clients will often forget what the numbers represent, and even within one session their understanding can shift. It's important for therapists to re-establish the PTS as a common language during every appointment, and to monitor on an ongoing basis whether the client's responses match your expectations. For example, if the client is holding their breath (a common sign that your pressure is 8 or more on the scale) and describing your pressure as a 6, that could be a sign that you and the client are working with different scales (see Tables 1 and 2).

When first introducing the scale the most important point to clarify is where the client starts tensing up in response to pain (defined as 8). This is where their protective response activates and in the authors' experience almost everyone can relate to this level of pain. It is helpful to explain to the client that pressure at this level triggers their body's protective response and that we want to avoid this as it drives sensitisation. Table 1 lists the most common non-verbal signs which indicate you may be working at a pressure of 8 or higher.

Signs that the pressure is too high on the Pressure Tolerance Scale
Intake of breath / Holding breath
Increase in muscle tension
Client flinches away from you
Client describes massage as intense but says they can handle it

Table 1. Have you triggered their protective response?

The second most important element to establish is the range of "good pain." The start of the good pain range is experienced when the therapist contacts the outer edge of the client's painful region (5). The client may say "that's the spot." Their pain may be slightly increased, but the level of engagement feels good to them. The therapist can increase MP to some degree from this point safely (5–7). The "good pain" range is the sweet spot of therapeutic massage: relaxing, enjoyable, and therapeutic. Working in this range feels safe and is therefore desensitising (Butler & Moseley, 2017). The therapist has left the "good pain" range when the client starts tensing up (8). Establishing clarity around the range of "good pain" is straightforward with some people, and more difficult with others. For some, "pain" is only really painful if they're tensing up. "Good pain" doesn't make sense to this type of client. They may still be able to identify when you are just contacting the surface of the area where their pain is located (5), although they may not consider this "pain."

A massage therapist should aim to keep their pressure within the 3–6 range.
Pressures of 4–6 are more suitable for therapeutic massage.
Pressures of 3–5 are more suitable for relaxation massage.

Table 2. General guidelines.

When pressure-related sensitisation (as described in the previous section) happens, the therapist must reduce their MP dramatically and apply soothing methods with MP around 3 to 5 on the scale or whatever feels "safe" to the client. Once safety has been reestablished the client's pressure tolerance should increase. This can be identified by a reduction in their rating of pressure.

At this point, the therapist can increase the pressure again, although this must happen carefully and gradually. Soothing the nervous system must take priority over other therapeutic aims. In situations where the client's pain anxiety is very high, any pressure in and around the area may be triggering for them. In this case, changing to a different area of the body for a period of time may be appropriate.

The pressure scale is particularly useful when treating trigger points. Trigger point treatment within the range of good pain should, based on the ideas presented in this article, be more successful than attempting treatment with a pressure of 8 or more. This is supported by the authors' experiences of private clinical and clinical supervision. Communication with the pressure scale also aids the identification of pressure-related sensitisation which appears to occur more commonly with trigger point treatment.

The authors hope that others find the use of the PTS as beneficial as we have. We look forward to communicating with other massage educators about their experiences of using the scale and research which investigates some of the theoretical assumptions we have made here based on our clinical experiences.

Limitations and further research

The model and its assertions have been clinically verified but have not yet been assessed through a more formal research process. From the authors' clinical experience, it seems that the use of this model reduces post-treatment aggravation of pain, and that PTS guided treatment is more effective when working with sensitisation. However, these hypotheses are yet to be tested by randomised controlled trials.

CONCLUSION

The PTS presented here is a model which has the potential to dramatically improve clinical communication about pain. The scale facilitates specific individualised client-centred communication about the client's experience of pressure and pain. If a massage therapist's pressure can be maintained within the range that feels safe to the client's nervous system, the treatment will be more effective in unwinding sensitisation and reducing pain. If the therapist fails to communicate about this effectively, they risk causing more harm than good.

This scale and the ideas expressed in this paper are important for adapting massage in general, but are particularly useful when working with clients presenting with chronic pain. Far too many clients with sensitised nervous systems have negative experiences with massage therapists. As health providers we should always try "to help, or at least do no harm" (Hippocrates as cited by Askitopoulou, 2024).

David McQuillan has worked as a massage therapy lecturer in the tertiary sector since 2006. He has been researching the application of mindfulness and lifestyle approaches for pain management since 2019. The methodology presented in this article emerged from supervision of students' clinical experiences.

Ash Rohloff is the head of programmes for massage therapy at Otago Polytechnic, and has been working there since 2007. His expertise centres on the use of massage therapy and movement for rehabilitation and pain management.

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