



# Affective Massage Therapy

In many ways, massage therapy (MT) research is still in its early stages. By the early 1990s, only a handful of researchers had conducted well-designed MT research studies. Some of these went unpublished (for example: Levin SR. Acute effects of massage on the stress response. Master's thesis, University of North Carolina, Greensboro, 1990; Hemenway CB. The effects of massage on pain in labor. Master's thesis, University of Florida, Gainesville, 1993), probably because there were fewer places to publish MT research then, but a few other studies concerned with specific conditions such as low back pain<sup>(1)</sup>, or specific populations such as cancer patients<sup>(2)</sup>, did appear in scientific and professional journals. However, to the best of my knowledge, no one had an ongoing program of MT research during this period.

The situation changed, of course, in 1992, with the founding of the Touch Research Institute (TRI). Tiffany Field and her colleagues established a program of scientific MT research that continues today. As a result, both the quantity and the quality of MT research show an improvement beginning in that year, and by 1998, TRI had conducted enough MT research for Field to publish a narrative review of MT research in the widely-read journal *American Psychologist*<sup>(3)</sup>. That review highlighted TRI's empirical approach to MT research, in which MT was applied to all manner of specific clinical conditions and populations to see what worked. Individual studies examined the effects of MT on infant growth and development, postoperative pain, juvenile rheumatoid arthritis, fibromyalgia, back pain, migraine headache, multiple sclerosis, spinal cord injury, autism, attention-deficit/hyperactivity disorder, posttraumatic stress disorder, eating disorders, chronic fatigue, depression, diabetes, asthma, HIV, and breast cancer. In addition to several condition- and population-specific effects, Field's review asserts the existence of a set of more general MT effects that were consistently observed across the individual studies. These effects were reductions of anxiety, depression, and stress hormones.

From a research standpoint, those general effects are potentially more illuminating than are any condition- or population-specific effects, because their more basic, fundamental nature makes them a useful foundation for theories that attempt to explain *how* a treatment works, as opposed to merely determining *if* it works. Theories rooted in these general effects could both guide and accelerate the research process by suggesting the most fruitful areas and strategies for further research. To better

understand the general effects of MT would be very valuable; therefore, let us examine what is already known about them more carefully.

One MT effect—the stress hormone reduction effect—is contentious. Although this effect is widely reported upon as if it were already a scientific fact, quantitative reviews of MT research fail to support a stress hormone reduction effect in either adult<sup>(4)</sup> or pediatric<sup>(5)</sup> MT recipients. In actuality, the confident but erroneous assertions that such an effect is already well established are likely attributable to an analytical error—an emphasis on within-group analyses even when a study's design demands between-groups analyses—that is frequently committed in MT research<sup>(6)</sup>. More research concerned with MT and stress hormones is definitely needed, but at present, the effect of MT on stress hormones is not a scientific fact on which theories can be built.

However, the other two general effects are well-supported by scientific data and widely agreed-upon by MT researchers. Quantitative research reviews show that a series of MT treatments consistently produces sizable reductions of depression in adult recipients<sup>(4)</sup>. The effects of MT on anxiety are even better understood. Single sessions of MT significantly reduce *state anxiety*, the momentary emotional experiences of apprehension, tension, and worry in both adults<sup>(4)</sup> and in children<sup>(5)</sup>, and multiple sessions of MT, performed over a period of days or weeks, significantly reduce *trait anxiety*, the normally stable individual tendency to experience anxiety states, to an impressive degree in adults<sup>(4)</sup>.

Together, these effects on anxiety and depression are the most well-established effects in the MT research literature. They are especially important for us to understand not only for their own sake, but also because anxiety and depression exacerbate many other specific health problems<sup>(7)</sup>. In other words, it is reasonable to theorize that quite a few specific health benefits associated with MT may actually be “second-order” effects that are a consequence of MT's “first-order” effects on anxiety and depression. For all these reasons, the anxiety- and depression-reducing effects of MT can form the basis of new testable theories that will guide future research and help to determine how, when, and for whom MT works.

Having spent much time thinking about MT's strong and consistent effects on anxiety and depression, I believe that the time is right to name a new subfield for MT research and practice: affective massage

therapy (AMT). Building on what is already known about the effects of MT on anxiety and depression, everything possible should now be done to better understand and to optimize the ways that MT influences affect, the observable components of an individual's feelings, moods and emotions. The recognition of AMT as a distinct subfield leads naturally to a host of basic questions that need to be answered, and to theories that can be tested to ensure that our scientific understanding of MT progresses to the greatest possible degree.

Basic questions pertaining to AMT for which no evidence-based answers yet exist include these:

- *Modalities and Sites:* When an improvement of affect is the desired goal, which MT modalities work best? To which anatomic sites should MT be applied to deliver the greatest affective benefits?
- *Session Length and Sequencing:* How long should a MT session be to most efficiently deliver affective benefits? If treatment will encompass more than a single session, how many sessions are required and how frequently must they be scheduled to optimize affective outcomes?
- *Used Solely or in Combination:* Are the resulting benefits large enough and reliable enough that AMT could be ethically prescribed as the sole form of treatment for some cases of anxiety or depression? How much affective benefit does MT add when it is part of a regimen of treatment and is provided in combination with well-validated treatments such as anxiolytic medications<sup>(8)</sup>, antidepressant medications<sup>(9,10)</sup>, or psychotherapy<sup>(11,12)</sup>?

Theories of AMT to be tested include these:

- *Parallels with Psychotherapy:* Psychotherapy and MT exhibit many structural similarities. For example, both are predicated on private interpersonal contact between a therapist and patient; both commonly use a “50-minute” hour or similar construct as a standard session length; and both use similar scheduling patterns for multiple sessions when progress resulting from treatment is expected to unfold over time. Further, the effects of MT on anxiety and depression, when quantified, are similar in magnitude to the effects observed in hundreds of psychotherapy studies<sup>(4)</sup>. These similarities raise the possibility that an understanding of AMT could be advanced by research designs and foci that are informed by psychotherapy research.
- *Parallels with Primate Social Grooming:* Many animal species, especially the primates with whom humans share the closest evolutionary history, groom each other. These behaviors play an important role in maintaining the health of individual animals and in establishing and maintaining the social bonds between them. In addition, social grooming is both driven by, and has effects on, the activities of the animals' nervous and endocrine systems<sup>(13)</sup>.

Research into AMT could potentially profit from a careful examination of the substantial scientific literature on animal grooming.

- *Inflammation and Depression:* Recent research has uncovered a link between inflammatory processes and depression<sup>(14,15)</sup>. Might MT reduce depression in part by first reducing inflammation?
- *Endocrine System Changes:* As previously noted, the best currently available evidence indicates that the effect of MT on stress hormones is weak. This finding is surprising, given the strong effects of MT on anxiety and depression, because those conditions are known to be linked with changes in endocrine system activity<sup>(16)</sup>. Why has a strong MT effect on stress hormones not been uncovered? One possibility is that there is a strong stress hormone effect that can result from MT, but that the effect occurs only under certain conditions that have not yet been delineated in the research. If this is the case, such an effect could be “washed out” when average effects are calculated across subjects within a specific study, or across studies in research reviews. Another possibility that must be considered is that any endocrine changes that result from MT are not themselves the cause of reductions of anxiety and depression, but merely an imperfect indicator that such reductions have occurred by another mechanism. If this is the case, it would explain why MT effects on anxiety and depression are consistently larger than MT effects on stress hormones.
- *“Mind-Follows-Body” Emotion Models:* How do people know their own emotional state? This question is as old as the field of psychology, and it has generated much more discussion and controversy than can be summarized here. Nevertheless, there is much agreement that how a person feels, emotionally, is at least partly a function of that person's bodily state. For example, it is known that people can induce emotional states, and change the autonomic activity of their bodies, simply by making the facial expressions that correspond to particular emotions<sup>(17–19)</sup>. Perhaps MT makes people less anxious or depressed primarily by manipulating the skeletal muscles and other tissues into patterns incompatible with negative affect states.
- *Social–Cognitive Emotion Models:* Although emotional states are known to be a function of bodily states, it is also known that this linkage is not the whole story; the exact same bodily state may be interpreted by the mind in different ways depending on a person's perception of the external world, especially when the external world includes other people. In a classic experiment, Schachter and Singer<sup>(20)</sup> arranged for three groups of people to receive identical injections of epinephrine, a stimulating hormone that produces physiologic arousal. Individuals in one group were informed that the injection would simply produce bodily sensations consistent with arousal. When asked about their emotions under the influence of the stimulating

hormone, these individuals did not report an emotional experience, presumably because they had a compelling non-emotional explanation for their physiologically aroused state. The other subjects were not provided with an explanation of the bodily sensations that they would experience. Instead, these individuals were placed in the presence of another person who was already displaying an emotion. When that other person was displaying happiness, subjects interpreted their own epinephrine-induced arousal as happiness. When that other person was displaying anger, subjects interpreted their epinephrine-induced arousal as anger. These results, and others like them, show that a person's emotional state is not determined solely by looking inward. Humans also look outward, to the social environment, to interpret the meaning of internal sensations<sup>(21)</sup>.

The ramifications for AMT should be obvious. Undoubtedly, MT temporarily changes the recipient's bodily state, but how the recipient interprets that change must depend on their attitudes, expectations, and knowledge of MT, and on their perception of the affective state and presentation of the therapist.

- *Experience Effects:* When my colleague Shay Beider and I reviewed pediatric MT research<sup>(5)</sup>, we made an interesting discovery concerning the effect of the treatment on state anxiety. When a series of MT sessions was administered, the first session in the series provided significant reductions in anxiety, but the last session in the same series provided reductions that were almost twice as large. This pattern was consistent across every study we were able to examine, which strongly suggests that experience with MT is an important predictor of its success, at least where anxiety is concerned. To put it another way, it is possible that the greatest benefits come about only when a person has learned how to receive MT.

I hope that some of you find the idea of AMT as inspiring and as interesting as I do, and I look forward to future IJTMB articles that address some of the questions and theories that I have suggested here, as well as others that I have undoubtedly overlooked.

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*The author declares that there are no competing interests.*

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