

Massage Therapy: Is Its Evidence-Base Getting Stronger

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The aim of this article is to evaluate trends in the development of the evidence-base for the effectiveness of massage therapy. For this purpose, a comparison of two systematic reviews was conducted. The first related to the evidence-base in 2000, the second to 2005. Both employed the same methodology and criteria for evaluation. The results indicate that, in several areas, the evidence has become more solid and, for anxiety and back pain, it has become more positive. For a host of other indications, the evidence seems encouraging, but more studies are required to test the effectiveness of massage therapy as well as its use for specific conditions.

Keywords: massage; systematic reviews; effectiveness

Despite the ancient history of massage therapy (Westhof & Ernst, 1992), the question as to whether it is clinically effective seems to generate different answers when addressed by different systematic reviews. For instance, slow-stroke back massage was deemed “an effective nursing intervention” (Mok & Woo, 2004) or praised for being “non-invasive, inexpensive, comforting, free of side effects and greatly appreciated by recipients” (Cassileth & Vickers, 2004). Others have suggested that massage therapy may contribute to muscle damage (Howatson, Gaze, & van Someren, 2005).

Such discrepancies require a solution. This is unlikely to come from single studies that regularly generate some degree of contradiction. The solution could, however, be facilitated through systematic reviews of the clinical trials that summarize and evaluate the totality of the available clinical evidence of a predefined nature and quality.

In 2001, we published a book (*The Desktop Guide to Complementary and Alternative Medicine*), which contains a series of systematic reviews of the main forms of complementary and alternative medicine (CAM), including massage therapy (Ernst, Pittler, Stevinson, & White, 2001). These were concluded in 2000. In 2005, we finished an updated new edition of our book (Ernst, Pittler, Wider, & Boddy, 2006). This allowed us to compare the evidence base, summarized by using the same methodology, for massage as it existed in 2000 with that of 2005.

The aim of this article is to define how the evidence base for massage therapy has changed over time and to discuss what the emerging trends tell us.

METHODS

Both versions of our *Desktop Guide* are based on systematic reviews employing virtually the same methodology; details are provided in the two volumes (Ernst, Pittler, Stevinson, et al., 2001, Ernst, Pittler, Wider, et al., 2006). Essentially, we carried out electronic searches in Medline, Embase, Amed, and the Cochrane Library for all controlled clinical trials of massage therapy. Trials were considered for those indications that had dedicated chapters in our book. These were indications which are common in primary care, frequently treated with CAM and associated with some evidence from clinical trials. The literature was searched until March 2000 for the first edition and until May 2005 for the second edition.

To evaluate the data, we created a parameter estimating the weight of the evidence. This was a compound variable consisting of the level of evidence (e.g., related to whether there was evidence from uncontrolled trials, randomized controlled trials, or meta-analyses), the volume (i.e., number of trials, total sample size), and the quality of the evidence, usually estimated with the Jadad score (Jadad et al., 1996). The Jadad score quantifies the likelihood of bias inherent in the trials, based on the description of randomization, blinding, and withdrawals. The weight was graded in three categories: low, moderate, and high. In addition, we graded the direction of the evidence in five categories: clearly positive, tentatively positive, uncertain, tentatively negative, and clearly negative.

For the purpose of the present analysis, we compared the weight and direction of the evidence for treating those conditions that were included in our book: AIDS, Alzheimer's disease, anxiety, asthma, back pain, constipation, depression, fibromyalgia, labor, multiple sclerosis, neck pain, premenstrual syndrome, and smoking cessation.

RESULTS

Changes in either the weight or the direction of the evidence were observed in 4 of the 13 included indications for massage therapy.

Weight of the Evidence

Of course, the weight could only grow between 2000 and 2005. Our comparisons show that it increased by at least one category for four conditions: AIDS, anxiety, back pain, and depression (Table 1).

Direction of Evidence

For two conditions, anxiety and back pain, the direction of evidence changed in a "positive" sense, that is, indicating that new data suggested effectiveness of massage therapy for the conditions in question. In one case, the evidence had altered in the opposite sense: AIDS palliation (Table 1).

DISCUSSION

These comparisons suggest that, within the observation period (2000–2005), the evidence-base of massage therapy has changed considerably. In our update (Ernst, Pittler, Wider, et al., 2006), we list numerous situations where the evidence for CAM has, during the preceding 5 years, become more solid. Massage therapy does feature prominently in that list. The present analysis shows that several new clinical trials have been conducted in this period. Considering

TABLE 1. Summary of Clinical Evidence for Massage Therapy

Condition	Weight of Evidence		Direction of evidence	
	2000	2005	2000	2005
AIDS/HIV infection palliation	O	OO	↑	↗
Alzheimer's disease	O	O	↗	↗
Anxiety	O	OOO	↗	↑
Asthma	O	O	↗	↗
Back pain	O	OO	⇒	↗
Constipation	OO	OO	↗	↗
Depression	O	OO	↑	↑
Fibromyalgia	O	O	↑	↑
Labor (pain)	No entry	OO	No entry	↑
Multiple sclerosis	O	O	↗	↗
Neck pain	No entry	OO	No entry	⇒
Premenstrual syndrome	O	O	↗	↗
Smoking cessation	No entry	O	No entry	↑

Note. OOO = high weight of evidence; OO = moderate weight of evidence; O = low weight of evidence; ↑ = clearly positive evidence; ↗ = tentatively positive evidence; ⇒ = uncertain evidence; ↘ = tentatively negative evidence; ↓ = clearly negative evidence.

the financial and other difficulties in conducting trials of massage therapy, this seems a notable achievement. The data suggest that at least one indication, namely, anxiety, can be considered as proven (Table 1).

Our analysis might inform the future research agenda of massage therapy. For instance, several indications were identified for which the direction of evidence is “positive” (e.g., depression) but the weight of the evidence is not maximal. This seems to suggest that these are areas where future research might be particularly fruitful.

Our comparison also suggests that the application of evidence-based medicine (EBM) to massage therapy is both possible and constructive. It has repeatedly been argued that EBM is not applicable to areas of “alternative medicine” (Barry, 2006). Our analysis seems to contradict this view. It is conceivable that EBM will eventually generate a list of indications for which massage is demonstrably effective. As science is not a good tool for proving a negative, EBM will not easily yield a list of indications for which massage is definitively ineffective. It will, however, be possible to provide indications for which effectiveness is less likely. In turn, this knowledge could be applied in clinical practice and for educational purposes (Marcus, 2001).

Several limitations of our comparison should be mentioned. Even though our approach in producing the two editions of our *Desktop Guide* (Ernst, Pittler, Stevinson, et al., 2001, Ernst, Pittler, Wider, et al., 2006) was systematic, we cannot entirely exclude a degree of bias in evaluating the published trial data. As the emphasis of this article is on comparing changes over time, one would hope that such bias is minimized: We used the same approach for both editions. Moreover, there was an internal and an external review process, which should have minimized bias. Other potential drawbacks are the facts that we only included a limited number of indications (i.e., those conditions for which there was most CAM evidence) and only evaluated the data from controlled clinical trials. Thus our comparisons fail to encompass all conditions for which massage therapy has been tested and clinical evidence may be available. Finally, our searches ended in June 2005. Since then, new studies have become available. For instance, a recent trial reported that massage therapy is, contrary

to what our evidence suggests, a promising treatment for neck pain (Sherman, Cherkin, Hawkes, Miglioretti, & Deyo, 2006) and AIDS palliation (Boylan, 2006).

In conclusion, our comparison of the current and past evidence suggests that the research activity relating to controlled clinical trials of massage therapy has been considerable. The trial evidence supports the effectiveness of massage for a range of conditions.

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