HOW DO WHAT WE

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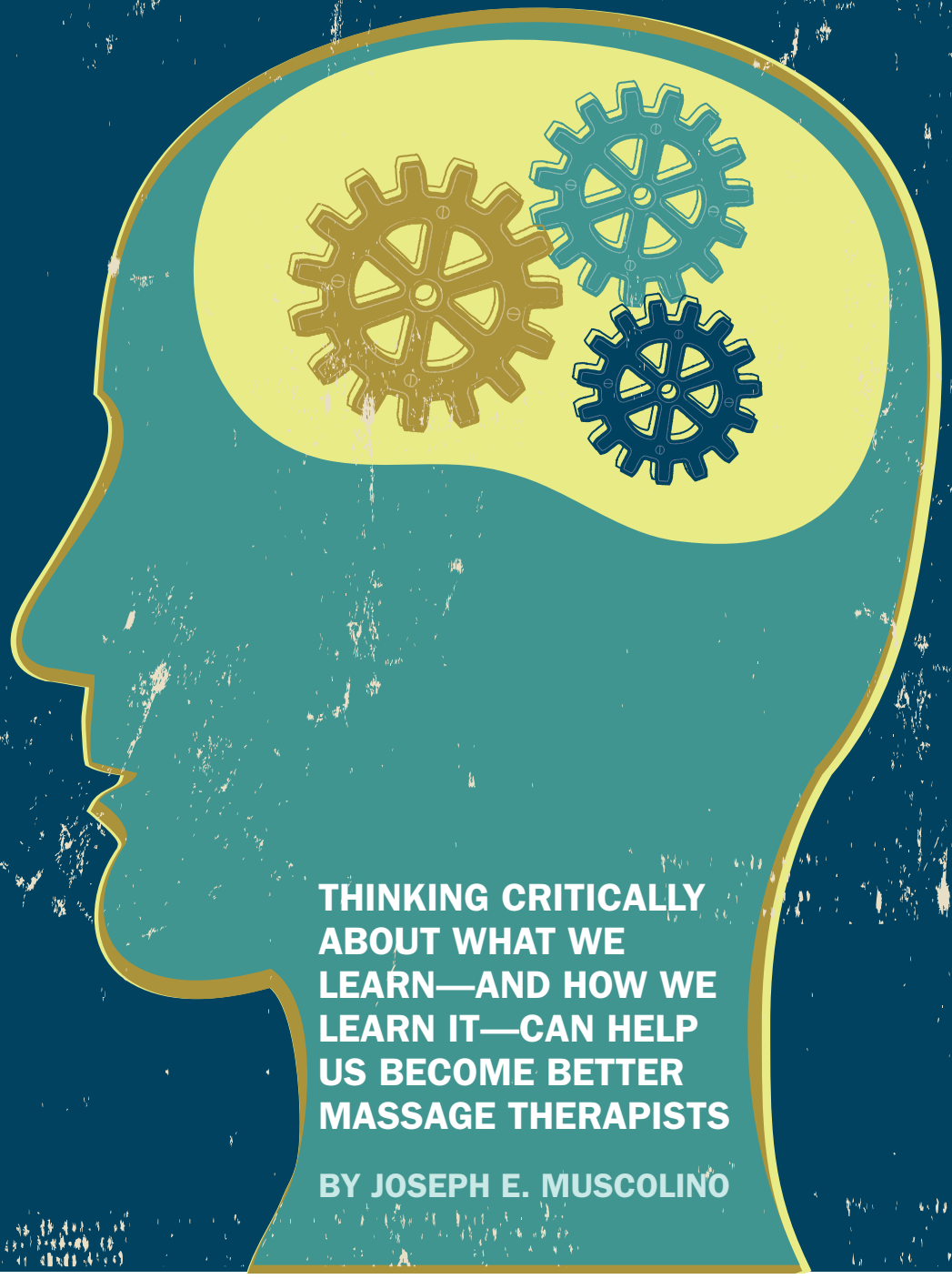

THINKING CRITICALLY ABOUT WHAT WE LEARN—AND HOW WE LEARN IT—CAN HELP US BECOME BETTER MASSAGE THERAPISTS

BY JOSEPH E. MUSCOLINO

HOW DO WE KNOW **WHAT WE KNOW?**

This question may seem strange. After all, most of us are probably more concerned with the knowledge that we acquire rather than how it's acquired. But, examining this question isn't just an exercise in abstraction; it can improve our client practice skills by helping us choose what techniques we want to learn.

Our approaches to acquiring knowledge can be divided into four models: 1. knowledge imparted by an authority, 2. gleaning knowledge from research, 3. testing the new knowledge in our practice, and 4. evaluating new knowledge against principles of anatomy and physiology that are already understood.

AUTHORITY MODEL

The authority model involves knowledge being imparted by an individual who we respect and place in a position of authority. This model is probably the most common approach to learning, and begins in school, where as *empty vessels*, we sit and try to absorb as much of the knowledge of our teachers as possible. You might also know this method of learning as *sage on the stage,* because the teacher is the sage standing on the stage in front of us. Sage on the stage, or perhaps *sage on the page,* can also describe textbook authors.

The authority model of learning usually continues after graduation. As practicing therapists, we subscribe to magazines devoted to our field and read articles by more sages. And we further our knowledge base by attending continuing education workshops where continuing education instructors are sages who present their techniques for us to learn.

The authority model depends on the idea that wisdom is passed from mentor to pupil, and we are enriched. However, there is a three-fold danger to this model. First, this model assumes that each authority is truly a knowledgeable and wise expert, and this isn't always the case. As brilliant as some sages might be, there might be aspects of their knowledge base that are lacking. Or, the perspective they present might not fully encompass the entirety of the knowledge area being taught. They might even hold some beliefs that simply aren't true. But how are we to know? How do we choose which pieces of information are pearls of wisdom that we should hold onto and use with our clients, and which pieces would best be discarded?

This dilemma lies at the heart of the second problem, which is that the authority model often discourages independent and creative thought. Instead of critically thinking through the information given to us, the authority model often presents cookbook recipes that are to be followed. We trust the information because we believe in the infallibility of the authority—especially in the world of continuing education, where charismatic instructors might not explain the anatomic and physiologic basis for their technique protocols and only offer their successful case studies as validity of their technique. A good maxim might be: *Beware of case studies*. Anyone who has been in practice for a few years can cherry pick out a handful of *miracle* case study success stories from all the clients they have seen.

And the third problem is likely the most vexing of all. What do we do when two (or more) authorities we trust disagree with each other? And looking at the world of continuing education, it does seem that many authorities are convinced of the superiority of his/her own technique over the techniques of others. Who do we choose to trust more when this occurs?

RESEARCH MODEL

The second approach to learning is to look to research for our answers. Research is based on the scientific method, which relies on a very simple and logical concept: if something works, results should be reproducible. The research model seems to solve the problems with the authority model. For example, if an authority states that a certain treatment technique helps low back

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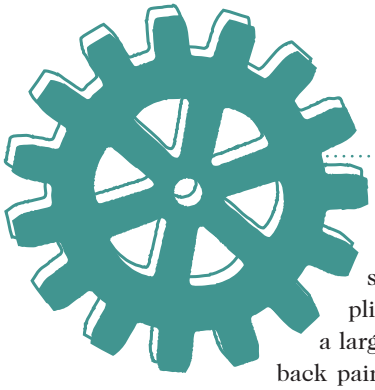

pain, and they back this up by describing two or three case studies, scientific research applies their treatment technique to a large group of people who have low back pain to see if their treatment is as effective as they state.

The results for this *treatment group* are compared to a large *control group* that did not receive the treatment (usually the control group receives what is called a *placebo* or *sham* treatment that is known/considered to be ineffective). A comparison is then made to see if the clients in the treatment group fared better than those in the control group. If they did, then the proposed treatment is effective and valid. Alternatively, the proposed treatment could be compared to another treatment that is recognized and accepted to see which one is more effective.

Certainly, trusting research is a lot safer than blindly trusting an authority. The very essence of research is to put the ideas of authorities to the test. But relying too much on research also has its dangers. The efficacy of a research study depends on it being designed and carried out correctly, which is not always the case. Research study design can be complicated, and errors are sometimes made. Further, incorrect interpretations and conclusions of the research data can occur.

STUDY POPULATION. First of all, an effective research study involves working with a large number of people (the number of people in a study is referred to as "n"). Whereas a single case study (*n of 1*) or a few case studies (an *n of 2 or 3*) might make the proposed treatment technique seem effective, these results might not be reflective of the entire client population.

If *n* is large enough, we can better trust that the technique is representative of the entire client population that we might treat, and therefore will work for us with our clients. For a research study to be effective, tens, if not hundreds or thousands, of people need to be involved. This can be expensive, and these types of large studies are not always available.

INCLUSION AND EXCLUSION FACTORS. Next, we have to make sure that the inclusion and exclusion factors are carefully chosen. As these names imply, inclusion factors are those factors/parameters that we want included in the study; exclusion factors are those that we want excluded.

Continuing with our example, if the study is evaluating the effectiveness of the proposed treatment on clients with low back pain, do we include all people with low back pain, or do we pick and choose those we want to be a part of the study? For example, we might want to include all people with muscle spasms, strains and sprains, but exclude all people with herniated discs or severe degenerative joint disease.

The idea of inclusion and exclusion factors becomes more complicated when we start to consider all the other parameters that might affect the study. Are people included who also exercise, meditate or engage in some other activity that might affect the study? The very essence of a research study is that we try to study just one parameter—the proposed treatment.

But so many factors affect health that it's virtually impossible to achieve this goal. Therefore, we try our best to identify all of these factors and then make sure they are equally represented in both the treatment and control groups. If this is achieved, then we assume that any difference between the two groups is due to the proposed treatment technique. However, accounting for all of these factors and then distributing them evenly is not always successfully achieved.

ISOLATION VERSUS WHOLISTIC APPROACH. In fact, this points to the larger conceptual difficulty of research. A research study, by design, is meant to evaluate the effectiveness of just one parameter. In other words, to be valid, a research study must isolate this one parameter and then decide if it is effective in improving one's health.

However, the concept of *wholistic* health involves the realization that no one parameter works in a vacuum. Good health is often attained only when a number of treatments are administered in conjunction with each other. For example, the best treatment for a client with low back pain might be to use massage, heat and stretch-

AMTA RESOURCE

AMTA believes strongly in the value of scientific research, and increasing member awareness of and access to research is part of the association's strategic plan: "AMTA members are aware of the importance of scientific research to the massage therapy industry." For the latest in research, see the Research section on AMTA's website at amtamassage.org.

ing together, not to mention advising the client about postures, stress and diet—among other things. A multifaceted treatment approach such as this is inherently difficult to evaluate with scientific research models.

TREATMENT ADMINISTRATION: VALIDITY AND BIAS. Another consideration is whether the treatment was administered correctly. This may seem to be a given, but is not always the case. It's not uncommon for treatment to be administered by people who are not experts in that technique. This is especially true with touch/massage research, where the people administering the care are often nurses or family members.

A valid question is: If the treatment was not administered by experts, can we trust the results? Ironically, if experts are used to administer the treatment, because of their interest in seeing their technique succeed, bias may creep in. To prevent bias, it's important that the therapists are not the same people who chart the progress of the participants in the study. In this way, the people who chart the progress are *blinded* in their knowledge of who is in each group.

CLIENT BIAS AND HANDS-ON PLACEBO TREATMENT. In fact, even the participants may want to improve so much that they bias the study. This is why it is important to design the study to include a sham placebo treatment so that the participants don't know whether they are in the treatment group, or the control group that received the placebo. In other words, they are also *blinded*.

This brings up a problem that is particularly challenging when conducting research in the world of manual therapy: Creating a valid hands-on placebo treatment for the control group is difficult. In the world of prescription drug research, both groups receive the same little white pill so they cannot know if they're getting the drug or a placebo. But in the world of massage and other manual therapies, clients know whether hands-on massage is being given to them. Therefore, an *ineffective* placebo hands-on treatment must be devised. But this is extremely difficult. After all, doesn't all touch involve some therapeutic healing?

NOT ALL RESEARCH IS IN. Our last challenge when relying on the research model for what we know is that there aren't research studies available to prove or disprove the value of every treatment technique—likely because valid research is expensive and takes time.

However, we cannot always wait for all the studies to be conclusively done because our clients need treatment now. In the meantime, it's important to remember that the absence of research does not prove that a technique is not valid. The fact that no proof exists that treatment X works *doesn't* mean there is proof that treatment X doesn't work. To make a comparison, gravity still existed the day before the apple fell on Newton's head, we simply did not yet have a scientific formula to explain it. In the absence of definitive proof, we need to be open-minded.

TESTING NEW KNOWLEDGE MODEL

In the face of not blindly trusting an authority, and also not having conclusive valid research upon which to rely, we can always try testing the knowledge/technique in our own practice. For example, on Monday morning, we can practice on our clients whatever we learned in a continuing education workshop over the weekend. However, this can also be problematic for many reasons.

In effect, we would be conducting our own limited research study, and we might not be designing and executing it very well. We might not yet be proficient with the treatment technique to implement it correctly, for example, or we might not have enough clients to determine if it is effective. Additionally, if we are administering other techniques at the same time, how do we know which one was responsible for a client's improvement, if any?

Beyond these concerns, there are literally tens if not hundreds of techniques being marketed to manual and movement therapists. Do we need to test them all? And if we did try out a technique for a reasonable period of time, and it did not prove to be effective, didn't we just waste our client's time and money? Our clients didn't sign up to be part of a research study—they came for effective treatment and we have a responsibility to ad-