

somatic research

BY RAVENSARA S. TRAVILLIAN



STRUCTURE OF A RESEARCH ARTICLE

**“If I have seen
further, it is
by standing
on the
shoulders
of giants.”**

Isaac Newton, in a letter to
a colleague in 1676



In the previous column, we looked at the typical structure of a research article, viewed from a high level. Knowing what this skeleton looks like enables us to grasp quickly what the authors of a research study are presenting—even when the topic is unfamiliar. More importantly, this structure ties the authors’ presentation together with the scientific method.

Here, we’ll delve into the details of how this is done, working toward a user-friendly understanding of the statistical basics of research studies. To provide a focus for our discussion, we’ll also touch on some high points in pregnancy massage research.¹

UNDERSTANDING AN INTRODUCTION

Remember from last time that we used the acronym IMRaD (standing for introduction, methods, results, and discussion) to keep track of the sections of a research article. To begin, we'll concentrate on the introduction section, and what massage research information you can get from it.



Let's start by looking at the sample article, below:

Usually, the very first section of the text of a research article is called the abstract, or sometimes summary. You'll notice it's not included in IMRaD. We'll get back to it later, and when we do, it will become clear why we waited. For now, simply note that the introduction will either be the first part of the article, or will immediately follow the abstract if there is one. The introduction may sometimes have a

different name, like background (as it does here) or something similar, but its meaning and purpose remain the same: to introduce the reader to the main issue of the article.

BUILDING ON WHAT'S COME BEFORE

In many ways, science is a social enterprise, and the quote from Newton on page 143 acknowledges the critical importance of such interconnectedness. Despite popular stereotypes of the lone genius laboring in secrecy in a solitary lab until he makes the stunning breakthrough that changes everything we know, the usual reality is far less dramatic. Most scientific research is a careful process of building on what others have done, gradually extending it in the hope of gaining valuable new insights. In this way, Isaac Newton is rightly recognized as the scientist who first described a theory of gravity, but without drawing on the work of his intellectual ancestors he could not have seen as far as he did.

Almost all science—even those rare events that totally overturn previous beliefs—works in a similar fashion. A researcher builds on the work of those who went before and publishes in order to provide a bridge to the next researcher who will carry the work further. One of the purposes of the introduction section is to describe those intellectual and research ties that connect researchers across time, space, language, and culture.

The introduction section describes that web of connections by establishing the context of the study the authors carried out: Who performed this research? In what setting was it performed (a laboratory, hospital, somewhere else)? How have previous researchers approached this question? How does this work build on previous studies? What is new and special about this study?

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Research article

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Development of a taxonomy to describe massage treatments for musculoskeletal pain

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Abstract

Background: One of the challenges in conducting research in the field of massage and bodywork is the lack of consistent terminology for describing the treatments given by massage therapists. The objective of this study was to develop a taxonomy to describe what massage therapists actually do when giving a massage to patients with musculoskeletal pain.

Methods: After conducting a review of the massage treatment literature for musculoskeletal pain, a list of candidate techniques was generated for possible inclusion in the taxonomy. This list was modified after discussions with a senior massage therapist educator and seven experienced massage therapists participating in a study of massage for neck pain.

Results: The taxonomy was conceptualized as a three level classification system, principal goals of treatment, styles, and techniques. Four categories described the principal goal of treatment (i.e., relaxation massage, clinical massage, movement re-education and energy work). Each principal goal of treatment could be met using a number of different styles, with each style consisting of a number of specific techniques. A total of 36 distinct techniques were identified and described, many of which could be included in multiple styles.

Conclusion: A new classification system is presented whereby practitioners using different styles of massage can describe the techniques they employ using consistent terminology. This system could help facilitate standardized reporting of massage interventions.

Background

Massage therapy, the manual manipulation of soft body tissues to enhance health and well-being, is one of the oldest forms of medicine known to mankind and has been practiced worldwide since ancient times [1]. Today, more than 80 different forms of massage have been iden-

tified, many developed in the last 30 years. Although massage is used for a variety of specific reasons (e.g., relaxation, comfort at the end of life, relieving pain, enhancing athletic performance), it is undertaken with the general goal of helping the body achieve or increase health and well-being. Touch given with the intention of

Research is always full of questions, and those above lead to the question most of us care about: why did the researcher think massage could be a useful intervention for the condition being studied? Remember, the first step in the scientific method is to make an observation about the natural world around us; so at some point there was an observation that suggested to the observer that massage might have a useful effect. For example, many women have reported that massaging the perineum while they were pregnant helped them deliver the baby with no tearing, or less tearing than they would have had otherwise. This is the kind of natural observation that suggests a formal study like the one Labrecque et al. published in 1994:

Although the performance of perineal massage by a woman or her partner during the last weeks of pregnancy may help to prevent perineal trauma at delivery, the technique has never been evaluated rigorously. This study examined the feasibility of a [rigorous study of perineal massage], and more specifically assessed the participation rate, the acceptability of the [massage], and whether or not an attending physician could [tell whether or not the patient had received massage].²

In other words, Labrecque’s team started from the observations reported by many women over the years, and turned them into a study that researched several issues: 1) whether it was possible to study perineal massage, 2) how acceptable perineal massage was to the patient (as it is an unusual and potentially painful procedure), and 3) whether perineal massage created structural changes that could be detected by the patient’s physician. The process of turning observations into a formal study results in research questions, or hypotheses.

A hypothesis describes things and the relationships among those things. Here, a thing can be something like massage or effleurage or pain or nausea, and so forth. A relationship is some kind of action or effect, such as increases, decreases, relieves, and so forth. So a hypothesis about massage in pregnancy might look like any of the following statements:

Thing 1 relationship Thing 2

Massage increases relaxation

Massage decreases pain

Effleurage decreases anxiety

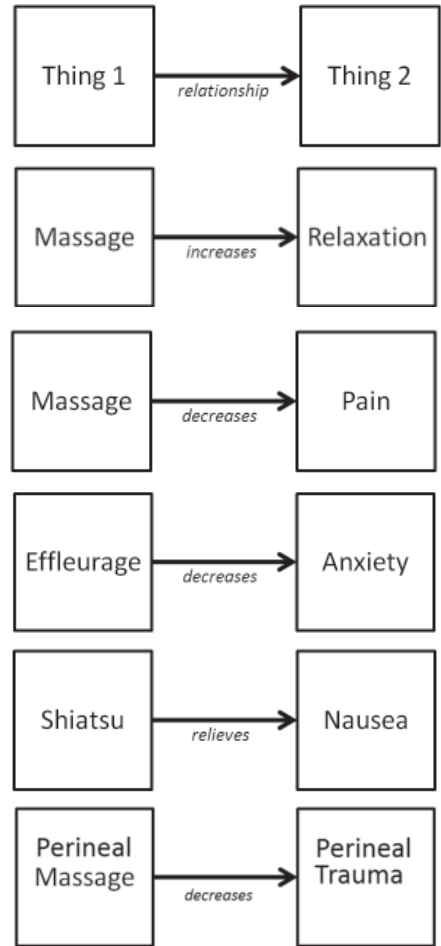
Shiatsu relieves nausea

Perineal massage decreases perineal trauma

We can also represent those statements in a mind-mapping style of drawing, to make the hypothesis clearer at a glance (see images to right).

So that’s another function of the introduction section—to present the hypotheses studied in this research. Sometimes the authors will explicitly state the hypotheses. In other articles, the authors will use more indirect language, and you’ll have to do some of the work of figuring it out. Mind-mapping techniques like drawing boxes for things and arrows for relationships can help you visualize the “skeleton” inside the text of the article.

Once you have the hypothesis, you can see whether it is well formed or not. There are many components to a well-formed hypothesis, but the most important one for our purposes is: can it be tested? In other words, is it possible to know whether the hypothesis is wrong? This is a very complex issue with many nuances, and one of the main ways that we can resolve it is through the concept of statistical significance.





THINKING STATISTICALLY: SIGNIFICANCE, PART I

While there are many highly theoretical issues associated with the concept of significance, here we're only going to go into them as deeply as necessary to understand the essentials of reading the research literature. In the next column, we'll begin digging into the nitty-gritty of how we can decide whether the results of a study are statistically significant or not. For now, however, the take-home points about statistical significance are:

- Statistical significance is one way, among others, to make sure that what we're seeing is a real and actual effect, as opposed to something that just happened by chance. It's not the same as in conversational speech when we say something is significant—here, significant means the probability is very low that the treatment made no actual difference to the patient.
- There is no bright and shining line from statistically significant to useful for your clients—the concept of clinical significance builds on statistical significance, but goes beyond it. If you read a study, you still have to decide what the results—whether they are statistically significant or not—mean for you in practice. It's a hard problem we'll return to in different ways over the next few columns, but while statistical significance of a study can inform your process, it's neither obvious nor automatic what it means for your practice.
- While statistical significance is not a perfect indicator of what a study means, it is nevertheless a very popular and widely-used measure. Once you understand what it is and how to use it, you'll gain access to a large body of literature and to a way of

communicating with other research-literate members of scientific and health-care teams. It will also give you a tool for communicating about research results to your patients.


In the next column we'll discuss what statistical significance can and cannot do, and how—with just a bit of (very simple!) math—we can use it to understand research results for our practices.

RESEARCH OVERVIEW

The experience of pregnancy is as diverse as can be—every pregnant woman is different and experiences her pregnancy in different ways. A normal pregnancy is certainly neither an illness nor a disease, but the changes in a woman's body can still cause symptoms such as discomfort or pain, nausea, anxiety, and more. In high-risk pregnancies, such symptoms may be intensified—either for physical reasons (such as carrying multiples), or emotional ones (such as concerns about the uncertainties of bringing babies to term and delivering successfully).

Massage is a technique that has been traditionally used for centuries to help pregnant and laboring women with the normal changes and discomforts of pregnancy. Research has borne out the usefulness of massage techniques for pregnant women and has indicated some safety issues and precautions to be taken as well. Because the scope of this research is larger than I can characterize here, I've made a bibliography available online at www.messageandbodywork.com. But that bibliography hardly addresses every question, so now I have questions for you: what information do we still need about massage and pregnancy, and what do we want to do with it? The answers to those questions will eventually inform a research agenda around pregnancy and massage, and I'd like to see us begin that dialogue.

Among us, we have a great deal of experience to share, and case studies are one way of gathering and sharing the information we have about pregnancy massage with each other—we are each other's shoulders to stand on in this case. What clients, signs and symptoms, treatments, and outcomes have you seen in your practice that other therapists, clients, and the profession would benefit from hearing about? We can start to have that discussion at www.messageandbodywork.com. **m&b**

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NOTES

1. *The topic, perineal massage, that this article discusses is a method practiced on an expectant mother by herself or by her partner. Please note this is not to be confused with prenatal, pregnancy massage, or any other modality practiced by a licensed massage therapist.*
2. Labrecque, M., S. Marcoux, J.J. Pinault, C. Laroche, and S. Martin. 1994. *Prevention of perineal trauma by perineal massage during pregnancy: a pilot study.* *Birth* 21, no. 1:20–5.