touchpoints

Vol. 15 No.4 Fall 2008

Massage Therapy Research

Therapy and research procedures

Treatment and research procedures need to be carefully considered and designed prior to the beginning of the study. Researchers write the background and the methods of their study in advance of their research so that the institution's review board can review any concerns they may have about protecting the rights of human subjects.

One of the most important aspects of the research procedure is that the participants and the observers not know the hypotheses of the study and the participant's group assignment. The participants and observers could be biased by the purpose of the study and the participant's group assignment. Including several observers in the study can also help prevent biasing the study, although the training of several observers and then the practice sessions to achieve interobserver reliability are costly.

For the massage studies with children, we teach the parents to be the therapists. The massage becomes part of the bedtime ritual that helps not only the children but the parents as well. We have documented that the therapist benefits from providing the massage in the same way that the recipient benefits. Massage therapy by parents, of course, is a very cost-effective procedure and one that not only helps the child's clinical condition but also helps make the parent feel empowered as part of the treatment process and helps the parent's and child's relationship.

Touchpoint photo by Tiffany Field

Selection of Collaborators

If you are a massage therapist wanting to conduct research, finding research collaborators is necessary. Usually research collaborators can be found at universities or hospitals. The research protocol needs to be approved by an Institutional Review Board in a research institution. Medical collaborators are important for identifying the critical clinical measures ("gold standards") for the condition being studied. They can also refer patients for participation in research and can administer the clinical measures. Finally, they are helpful on publications and grant proposals because they add

credibility for reviewers of publications and grants. Scientist collaborators are also helpful. For example, neuroscientists can conduct assays of biochemical measures or interpret physiological data, e.g. EEG. Statisticians and Ph.D. researchers can assist with designing the methods and conducting the statistical analyses for the project. If the collaborating researcher is not a Ph.D. trained researcher, the team will need at least a statistician collaborator. Massage therapist collaborators are, of course, needed (particularly if the researcher is not a massage therapist), for the design of the massage therapy procedure to be used and to help identify measures that can directly assess the effects of that massage therapy procedure. Volunteer massage therapists are critical for the actual therapy or for demonstration of the therapy if the parents or significant others are going to be the therapists.

In the next section, specific research protocols are reviewed as examples. These include research on prenatal and postnatal growth and development, attention deficit disorder, psychiatric conditions and addictions, pain syndromes, autoimmune conditions including asthma, dermatitis and diabetes, and immune conditions including HIV and breast cancer.

Research Protocols for specific conditions

Growth and Development Studies

Pregnancy Massage. Prematurity is a costly problem that would best be prevented. Stress and depression may contribute to prematurity. In some studies, for example, the cortisol levels (representative of stress) of the pregnant woman at 28 weeks gestation predicted premature delivery with a reliability of .98. The prematurely born babies had significantly higher cortisol levels than those who were not born prematurely. In another study conducted by our group, the mothers' prenatal catecholamines (norepinephrine) and stress hormones (cortisol) during the last trimester of gestation were later mimicked by their newborns. This finding concurs with data showing that at least 40% of the mothers' cortisol crossed the placenta. Another study from our lab suggests that fetuses of depressed versus non-depressed mothers were also more active from the fifth to the seventh gestational month. These data highlight the importance of interventions during pregnancy that can reduce stress and depression. In a recent study we provided pregnancy massage twice a week over the last trimester of pregnancy. Perinatal complications were reduced, the most important one being reduced prematurity. In a more recent study we explored the effects of pregnancy massage specifically on depressed mothers. The massage not only reduced depression and anxiety but also the neurotransmitters and hormones associated with depression and anxiety (norepinephrine and cortisol). Serotonin, the antidepressant neurotransmitter, was also increased. Again, reduced prematurity was the most important effect.

Labor Massage. To continue the stress reduction in pregnancy we taught significant others to perform labor massage. In that study we were able to reduce labor pain by having the significant other give the massage for the first fifteen minutes of every hour of labor. The massage led to shorter labors, less need for labor medication, shorter hospitalization and less postpartum depression.

Preterm Growth and Development. Approximately 10% of infants in the U.S. are born prematurely at less than 37 weeks gestation. Those infants are hospitalized in neonatal intensive care units for sometimes 2-5 months, experiencing stresses of the

nursery including loud sounds and bright lights. When the newborn is no longer considered medically unstable, the primary agenda for the infant is to gain enough weight to be discharged. This is the time that we have introduced preemie massage. The massage protocol includes three 15-minute massages a day for a ten-day period which led to a 47% greater weight gain. In our most recent study we were able to establish the same weight gain over a five-day period. Thus, we are now using the more cost-effective five-day treatment period. We are also trying to teach the parents to continue the massage following discharge.

Touchpoint photo by Tiffany Field

We later added growth hormone (IGF1) and oxytocin to our set of measures. These variables are considered important for growth and have been shown to increase with additional stimulation in rats, for example. We added these variables in order to explore the underlying mechanism for the massage therapy/weight gain relationship. In an earlier study we speculated that the underlying mechanism for the weight gain in the preterm babies was that following massage their vagal activity (activity of the tenth cranial nerve, the vagus) was increased and thereby more food absorption hormones were being released for more efficient food absorption, that being the function of the vegetative branch of the vagus nerve. Vagal activity was measured from heart rate recordings and was shown to increase, and insulin (a food absorption hormone) in plasma samples increased. This may turn out to be one of the underlying mechanisms, along with several others including the fact that gastric motility (which is also stimulated by the vegetative branch of the vagus) may also increase. Increased gastric motility could also contribute to more efficient food absorption.

The additional measures of IGF1 and oxytocin may further inform us as to underlying mechanisms. If underlying mechanisms are known, medical professionals are more likely to adopt massage therapy as a routine treatment on neonatal intensive care units. Functional MRI (magnetic resonance imaging) methods are being used by some researchers to show that there is significant brain development that accompanies the massage therapy, most particularly the development of the hippocampus (the brain region that involves memory functions). In the rat, which often serves as a model for human growth and brain development, increased dendritic arborization (branching) occurs in the hippocampal region following moderate pressure rubbing. In this study, the experimenter used a paintbrush to simulate the mother's moderate pressure tongue licking. The tongue licking pressure lowered the levels of cortisol which is noted to kill brain cells. Brain cells were saved, and as adults, the rats performed their mazes as well as they had in their youth.

To be continued.

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The Touch Research Institutes are offering 2-day research training workshops ($600) the third Monday and Tuesday of every month. The orientation to research techniques includes interviewing, observational methods, physiological and biochemical measures. 12 Florida and National CEUs are offered for these workshops. The workshops are apprentice-like with hands-on experience in the research clinics and include: basic research techniques, current massage and research protocols used at the TRI and methods for reviewing and critiquing literature in the field.

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University of Miami School of Medicine
P.O. Box 016820 Miami, FL 33101

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Touch Research Institutes
Department of Pediatrics (D-820)
University of Miami School of Medicine
P.O. Box 016820
Miami, FL 33101

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