

# Facilitating Case Studies in Massage Therapy Clinical Education

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**The integration of evidence into reflective health care practice has been on the rise in recent years and is a phenomenon that has affected all health care professions, including massage therapy. Clinical case studies are a research design that follows one patient or subject, making the studies ideal for use in clinical practice. They are valuable for communicating information from clinical practice to the broader community. Case studies have face validity that may be more valuable to individual practitioners than homogeneous randomized controlled trials, as the practitioner may recognize a complex patient in the case report. At Humber College, Student Massage Therapists (SMTs) create, conduct, and communicate results of a clinical case study prior to graduation. This article describes the process and experience.**

**KEY WORDS:** case study; massage therapy; clinical education; research capacity

## INTRODUCTION

Clinical case studies, sometimes known as  $n = 1$  designs,<sup>(1)</sup> are a research design that follows one patient or subject—a feature that makes case studies ideal for clinical practice. Despite the inability to generalize the results of a case study to the larger population, they are valuable for communicating information from clinical practice to the broader community, including other health care professionals and researchers. Case studies have face validity that may be more valuable to individual practitioners than homogeneous randomized controlled trials, as the practitioner may recognize a complex patient in the case report.<sup>(2)</sup> On the hierarchy of research, case studies are often found along with qualitative research at the base of the pyramid.<sup>(3)</sup> This illustrates their role as a foundational piece of research. Results from case studies can contribute to the future development of a larger scale study.

Case studies also provide clinicians with a standardized process by which to communicate adverse effects and side effects of, novel approaches to, and both positive and negative unexpected outcomes of,

treatment. This is of particular importance in massage therapy as there is a paucity of evidence for many aspects of practice, including safety, efficacy, effectiveness, and cost-effectiveness. This statement is not to suggest that massage therapy is not a useful or cost-effective treatment, rather than more research needs to be conducted on outstanding topics of inquiry to better describe massage therapy practice in general.

The integration of evidence into reflective health care practice has been on the rise in recent years and is a phenomenon that has affected all health care professions, including massage therapy.<sup>(4-7)</sup> Evidence-informed practice (EIP) is the use of the best available evidence, patient values, and practitioner expertise to inform the clinical decision-making process.<sup>(8)</sup> In order for a practitioner to engage in evidence-informed practice they must have research literacy skills or the ability to find, understand, analyze, and apply evidence to practice.<sup>(9)</sup>

Research in massage therapy continues to grow as attitudes around evidence seem to change. Anecdotal evidence points to a greater demand for research in massage therapy to support or refute current practices and reinforce the safety of the practice. This may be, in part, as the result of changing expectations that massage therapists will have skills in research literacy. In 2005, the regulatory authority for massage therapy in Ontario, Canada included research literacy into the entry-to-practice competencies.<sup>(10)</sup> The 2012 Inter-jurisdictional Competency Document, which will replace the 2005 competency document in Ontario, goes further to require an academic knowledge of evidence-informed practice.<sup>(11)</sup> While it is this author's opinion that evidence-informed practice should be required at least at a simulation level and where possible at a clinical level, this inclusion does demonstrate a change in attitude of the regulators and the profession of massage therapy in Canada.

The faculty in the Massage Therapy Program at Humber College believe the skills of designing, conducting, and communicating the results of a case study are important tools for therapists to have in order to communicate with the larger massage therapy, health care, and research communities. As such, steps were taken to include case study creation and implementation into the curriculum.

## METHODS

At Humber College, Student Massage Therapists (SMTs) create, conduct, and communicate results of a clinical case study prior to graduation. It is anticipated that, through this experience, SMTs develop useful skills in research literacy and research capacity that they can use once they enter practice. The learning outcomes associated with this project include, but are not limited to:

1. Create a research question or problem using a given format.
2. Describe the elements of a single-case ( $n = 1$ ) study design.
3. Explain the ethical considerations for massage therapy researchers according to associated policy statements (NB: At Humber College, this is the Tri-Council Policy Statement: Ethical Conduct of Research Involving Humans<sup>(12)</sup>).
4. Discuss the value of conducting research for the massage therapy profession.
5. Apply knowledge and skills related to the research process to create a clinical research study proposal.
6. Conduct a prospective case study and gather the related data.
7. Synthesize the background information, methods, results, and conclusions of a clinical case study into a case report for publication and presentation (oral and poster).
8. Defend a case report in front of a panel of researchers and massage therapy practitioners.

It is also hoped that the SMTs develop an appreciation for the research process and the usefulness of this type of knowledge.

### Creating a Clinical Case Study

The ability to develop a research study is the first of the competencies related to research capacity. In the Humber program, SMTs create a proposal for a clinical case study in the fourth semester of the six-semester program. They are encouraged to choose a topic in which they are interested. There are some limitations placed upon those topics by the Humber College Research Ethics Board (REB), which does not allow students to conduct research on vulnerable persons. SMTs must take into consideration this limitation set by the REB, along with the notion of feasibility when choosing their topic for study. In other words, topics should involve populations of patients that will likely be able to be accessed in the area around Humber College. Students are required to search for relevant literature to inform themselves as to the research that has already been conducted in their topic areas. With that said, the focus of this proposal is to experience the research process, not necessarily contribute new knowledge.

The case study proposal is broken down into the introduction, methods, ethical considerations, and references. In the introduction, students present the background and context for their clinical case study topic. The research question and hypothesis are also a part of this section. In the methods section, students describe the population, inclusion and exclusion criteria, intervention, data collection, and data analysis. The ethical consideration section includes an information sheet for participants and informed consent form. Students are given REB-approved templates for these sections in which they insert the details of their studies.

Over the semester, students submitted their proposals in stages. After each section submission, students received feedback on their proposals that was incorporated in future submissions. Although this involves a considerable amount of time on the part of the instructor, it is valuable to the progression of the students and their proposals. After receiving feedback on the introduction and methods, the students submitted the whole proposal. Using the feedback with which they are provided, students also get one final resubmission. By the end of this process, most submissions are ready for use in the following semester.

### Conducting a Clinical Case Study

SMTs conduct the clinical case study in their on-campus internship (student massage therapy clinic) in the fifth semester. Using the inclusion/exclusion criteria from the proposals, subjects are recruited for the studies between the terms. Once subjects are identified, they attend the student clinic for their first appointment where the SMTs enroll the subject using the information sheet and consent form. Once subjects are enrolled, each study progresses on its own pre-established schedule. Students have already had to ensure that the study fits the available treatment time in the semester. In other words, the study can be no longer than 12 weeks, including enrolling the patient, due to the length of the semester. For students who were given a subject later in the term, they must apply for an amendment to the length of the study.

During the study, SMTs were supported by their clinical instructors and a research supervisor. For this first attempt, the author was the research supervisor for all 17 projects during the term. This support was intended to help the SMTs collect data according to the schedule. Both data collection and data organization were also supported through learning modules. Learning modules are assignments given within clinical education at Humber College. The modules outline activities related to proscribed learning objectives that must be accomplished.

If a student was not able to find a subject, or if the data were not able to be accurately collected, they were required to complete an alternate project. They could choose between a retrospective case study

created from an existing patient record in the student clinic, or a discussion paper related to one of the difficult aspects of their study. For example, a student used photography to capture posture. Unfortunately, she did not have enough consistency in her approach to complete her case study. For her alternate project, she explored procedures to follow to ensure photographs taken in clinical practice or research would be useful, by looking at the related literature for suggestions.

### Communication of a Clinical Case Study

Once the data were collected and organized, SMTs were required to write up the results for publication and presentation, both poster and oral, in a capstone course in the sixth, and final, semester of their program. The first task was to analyze the data collected (with support by the research supervisor who taught the course). Once the data were analyzed, it became clear which projects could continue and which projects did not have sufficient data. In the cases where a project had insufficient data, the students chose to do a discussion paper on an aspect of their topic.

Once the project type was confirmed (case study or discussion paper), students wrote papers for publication. They used the author guidelines from the *International Journal of Therapeutic Massage and Bodywork*<sup>(13)</sup> to organize and format their papers. Examples of previously published case studies were given to inform and inspire the students. Students had the opportunity to submit their publications twice, once to receive feedback and a second final submission.

Using their papers as a base, students then created posters for the Student Massage Therapy Research Night. Students could use a PowerPoint poster template or a software called PosterGenius<sup>(14)</sup> to create the posters. The size of the poster was 3' by 2'. A draft of the poster presentations was submitted for feedback and revision prior to the Research Night. Students hosted the Research Night in March 2012 and presented the completed posters. Family, friends, faculty, and Humber administration were invited to attend. After opening remarks from the President and Dean of Research, attendees were invited to view the posters and ask students questions about their projects. The evening concluded with closing remarks from two student representatives.

The final assignment for the course was a 15-minute oral presentation to a panel of experts. The panel consisted of the research supervisor, a massage therapy researcher, and a registered massage therapist. Following the presentation, five minutes were allotted for questions.

## RESULTS & DISCUSSION

In all, 17 projects were completed. Of the 17, 11 were clinical case studies and six were discussion

papers. The clinical case studies spanned the populations of patients with scars (2), and one project each for multiple sclerosis, low back pain during pregnancy, muscle cramps, cerebral palsy, fibromyalgia, narcolepsy, delayed onset muscle soreness, sciatic nerve pain, and well-being. The discussion papers tackled issues such as the usefulness of proper clinical documentation of treatments, and reviews of the literature for massage therapy in the management of delayed onset muscle soreness, body image, HIV/AIDS, and well-being in a postmastectomy patient. The sixth paper dealt with the proper use of photography as a way of recording outcomes in clinical practice or research.

### Student Perspective

In their speeches at the end of the Student Massage Therapy Research Night, the student representatives mentioned some of the challenges and rewards of being engaged in a research project. The challenges included performing an accurate and extensive literature search with a limited amount of time and ability to analyze the research articles, incomplete data collection due to patient absenteeism or practitioner forgetfulness, and nervousness about presenting results to experts. However, the students also reported that they felt more confident and knowledgeable in their massage therapy practice. They felt better equipped to incorporate research studies into practice in order to communicate better with patients and provide a more effective treatment. Most of all, they felt a sense of pride in their accomplishments.

### Recommended Changes

As a result of this experience, there are some recommendations for instructors, students or clinicians who wish to try this model in their own clinics. First, someone must take the time between semesters to review and revise the information sheets and consent forms. The students are provided with considerable feedback and sometimes the changes are not made throughout their documents. In order to fulfill the REB requirements, the materials need to be reviewed. Second, where possible, multiple research supervisors should be used. There is a considerable amount of time that is spent with the students to answer questions and determine whether the study is progressing as it should. Finally, while the discussion papers were good, another alternate assignment closer in similarity to the case study should be considered. In the next year of this project, students without a case study will create a critically appraised topic (CAT)—a tool that helps health practitioners learn about current research that is relevant to practice.<sup>(15)</sup> This evidence can then be applied to clinical decision-making.

## Future Studies

Future studies should evaluate whether or not the opportunity to design and carry out a study changes attitudes toward research literacy and capacity. It would also be interesting to investigate whether research knowledge increases as a result of the process. Similarly, research studies should explore whether students and graduates develop an appreciation for research by conducting their own study. A final area of investigation would be the question of confidence: Do students have more confidence in their clinical practice or professional role following this project?

## CONCLUSION

Creating, conducting, and communicating clinical case studies in the massage therapy program at Humber College has been challenging but rewarding. The process is complex and requires time and effort. Although there is much research to be done on the educational value of this experience, student reports indicate that this process improves confidence in their clinical and research abilities. Future studies are needed that investigate the impact of conducting clinical case studies on student and graduate attitudes and abilities.

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## CONFLICT OF INTEREST NOTIFICATION

The author declares there are no conflicts of interest.

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