

# Side Effects of Massage Therapy: a Pilot Study

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## INTRODUCTION

Massage therapy is a very popular form of treatment with reported relaxation and pain reduction benefits. However, in a recent article, several case reports identified serious side effects from massage. These negative side effects are considered rare and are frequently due to 'exotic' types of massage or massage delivered by laymen<sup>1</sup>. The purpose of this pilot study is to determine the incidence of negative side effects as well as the incidence of unexpected positive side effects due to massage care.

## METHODS

A convenience sample of consecutive new and returning adult massage therapy clients were asked if they were willing to participate in this study. If interested, subjects signed an IRB-approved consent form, provided a telephone number, and indicated the best time for contact. Subjects underwent regular massage care with interns in a U.S. massage therapy teaching clinic. After the massage care, the intern completed a form indicating the reason for care and the type of care provided. Two days after the massage, a research assistant contacted the client to administer a telephone screen inquiring about demographics and presence, timing, and severity of negative and positive side effects after the massage session.

Questions used for screening were developed by previously published studies on side effects of chiropractic care<sup>2-7</sup>, and were internally assessed for face and content validity. Subjects were asked if they experienced any additional discomfort or unpleasant reactions after the massage therapy. If the subject responded affirmatively, s/he was queried as to what type of discomfort was experienced, the level of discomfort on a scale of 0 (no discomfort) to 10 (unbearable discomfort), how soon after the treatment the discomfort started, how long it lasted, and how much the discomfort affected normal daily activities at home and/or at work. Each subject was then asked "Have you experienced any positive changes that do not seem to have anything to do with the reason you came to our clinic? For example, did you have any positive changes with your hearing, sight, ability to smell, breathing, circulation, digestion, urination, sexual function, menstruation, skin, or other?" If the subject responded affirmatively, s/he was queried as to what type of benefit was experienced, the level of benefit on a scale of 0 (no benefit) to 10 (extreme benefit), how soon after treatment the benefit started, and how long it lasted.

Data were analyzed using descriptive statistics only.

## RESULTS

One hundred and forty-two consecutive clients at a massage therapy teaching clinic were approached to participate and 42 declined due to lack of interest or time. No data were collected on the non-participants therefore we were not able to determine any potential selection bias. Of the 100 subjects who agreed to participate in this telephone survey, nine were subsequently unavailable. Of the remaining 91 subjects, the average age was 46 years old (range 19-77) and the majority of subjects were female (71.4%), Caucasian (90.1%), and married (50.5%), as described in Table 1. Most were returning clients (71.4%) and described their reason for seeking massage as relaxation (52.8%), overall muscle tension or joint pain (28.6%), back pain (24.2%) and/or neck and shoulder pain (19.8%), as described in Table 2.

**Table 1: Baseline characteristics of massage clients at a teaching clinic (n=91)**

Characteristic	n (%)
Gender	
Male	26 (28.6%)
Female	65 (71.47%)
Race	
Caucasian	82 (90.1%)
Hispanic	3 (3.3%)
African American	3 (3.3%)
Asian	2 (2.2%)
Other	1 (1.1%)
Marital status	
Married	46 (50.5%)
Divorced	13 (14.3%)
Widowed	4 (4.4%)
Never married	28 (30.8%)

**Table 2: Clinical characteristics of massage clients at a teaching clinic (n=91)**

Characteristic	n (%)
New client	26 (28.6%)
Returning client	65 (71.4%)
Primary complaint(s)*	
Relaxation/stress reduction	48 (52.8%)
Back	22 (24.2%)
Neck and/or shoulders	18 (19.8%)
Extremity	21 (23.1%)
Muscle tension/pain	26 (28.6%)
Headache	2 (2.2%)

\*Some clients had more than one primary complaint

The majority of subjects in this sample received Swedish massage (98.9%) with various other types of massage occasionally included such as deep tissue (14.3%) and trigger point therapy (12.1%), as described in Table 3. The areas of treatment primarily included the back (100%), neck (93.4%), lower extremity (86.8%), and upper extremity (85.7%), as described in Table 4. No questions were asked regarding improvement in primary complaint or client satisfaction.

**Table 3: Types of treatment(s) received by massage clients at a teaching clinic (n=91)\***

Treatment	n (%)
Swedish massage	90 (98.9%)
Deep tissue massage	13 (14.3%)
Trigger point therapy	11 (12.1%)
Other	7 (7.7%)

\*Some clients received more than one form of massage

**Table 4: Areas of treatment(s) received by massage clients at a teaching clinic (n=91)\***

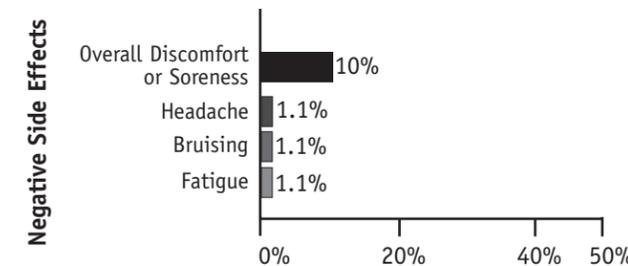
Treatment area	n (%)
Back	91 (100%)
Neck	85 (93.4%)
Lower extremity	79 (86.8%)
Upper extremity	78 (85.7%)
Head/face	52 (57.1%)

\*Some clients received massage in more than one area

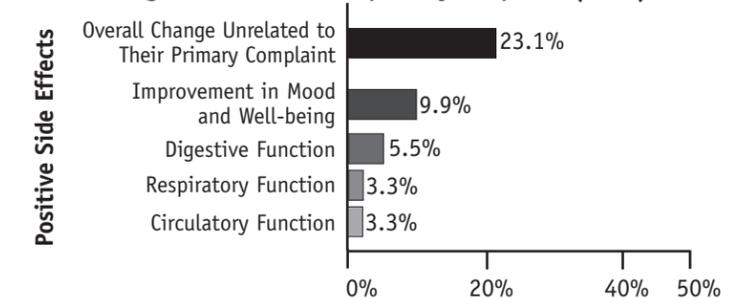
Of the 91 subjects surveyed, 9 (10%) stated that they experienced one or more additional discomforts or unpleasant reactions to the massage. The most common complaint was increased discomfort or soreness (10%) starting <12 hours after the massage and lasting 24 hours or less. Other infrequent complaints were tiredness or fatigue (1.1%), headache (1.1%), and bruising (1.1%), as described in Figure 1. No major side effects occurred during this study.

In terms of unexpected positive side effects, 21 (23.1%) of the 91 subjects experienced one or more positive changes unrelated to their primary complaint. The most common positive side effects were non-musculoskeletal including improvement in mood and emotional well-being (9.9%), digestive function (5.5%), respiration (3.3%), and circulation (3.3%), as described in Figure 2. Most positive benefits lasted >48 hours.

**Figure 1: Negative side effects of massage care (n=91)**



**Figure 2: Positive non-musculoskeletal side effects of massage care unrelated to primary complaint (n=91)**



## CONCLUSIONS

This pilot study is the first to define the incidence of side effects due to massage therapy treatment. Overall, 10% of the massage clients experienced some minor discomfort after the massage session; however 23% experienced unexpected, non-musculoskeletal positive side effects. These data are important for proper informed consent procedures and to determine the risk-benefit analysis of massage care. Larger studies are needed to verify these data and to assess effects of different massage types and durations.

## FUNDING

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