


Survey Results



Musculoskeletal Symptoms and Injuries Among Experienced Massage and Bodywork Professionals

By Lauriann Greene and Rick Goggins

Many of us have heard stories of massage and bodywork practitioners who had to leave the profession because they were injured, burned out, or otherwise unable to continue meeting the physical demands of their work. Many of us may also have experienced symptoms such as pain, discomfort, and inflammation that might make us wonder if we, too, might have to consider a change.

Certainly, there is a tendency among healthcare providers to focus on the well-being of the client, sometimes to their own detriment. Other professions that involve direct caregiving, such as nurses and physical therapists, have surveyed their members and found high rates of injury, mostly musculoskeletal in nature. For example, one study found a prevalence of work-related musculoskeletal injury among physical therapists (PTs) and physical therapy assistants (PTAs) of 32 percent and 35 percent respectively. These results led the study authors to assert: "Although PTs and PTAs are recognized to be knowledgeable in prevention and treatment of musculoskeletal injuries, they are susceptible to sustaining occupational musculoskeletal injuries because of performing labor-intensive tasks."¹

Among those labor-intensive tasks cited in the same study are "lifting, bending, twisting, reaching, performing manual therapy, and maintaining awkward positions for a prolonged period of time."² Since many types of massage therapy and bodywork also involve these tasks, it is reasonable to suspect that massage therapists and bodyworkers would also be prone to work-related musculoskeletal injury.

Data suggest that these types of injuries exist in the massage profession. In Washington state, there are about 10,500 active licensed massage practitioners, of which approximately 150, or just over 1 percent, are employed by others and are therefore covered by the workers' compensation system. Out of this group of 150, only about 7 percent file claims for work-related injuries in any given year. Most of the injuries (about 55 percent) experienced

by massage practitioners in the past five years were listed as overexertion from activities such as lifting equipment or clients and giving massages. These injuries occurred mostly in the lower and upper back, as well as to the upper extremities — primarily shoulders, wrists, and fingers. The rest of the injuries reported were incidents such as slips and falls and skin reactions to products such as massage oils and creams. It is difficult to say if workers' compensation data are a good indication of the extent of the problem, however. We do know that work-related injuries tend to be significantly underreported, with workers choosing to treat their injuries through their health insurance or pay out-of-pocket rather than file a claim. Also, since most massage practitioners in the state are self-employed or work as contract employees, they are not covered by workers' compensation and do not show up in these statistics.

The incidence of occupation-related injury among massage therapists and bodyworkers has been reported in a number of books on massage and bodywork, and in the major massage industry magazines, including *Massage & Bodywork* magazine. These publications have provided anecdotal and empirical evidence that occupation-related injuries affect a large number of massage and bodywork practitioners and can even occur during training at a massage school. The injuries most often discussed in these sources have been to the upper extremity. However, no statistical study has been published to date that evaluates the extent to which occupation-related musculoskeletal injury occurs within the massage and bodywork profession, nor suggests what steps should be taken to prevent such injuries from occurring. With so much available evidence suggesting that work-related injury might be an occupational hazard of massage and bodywork, there was clearly a need for a study to be undertaken on this subject.

The purpose of this study was to determine the incidence and prevalence of musculoskeletal occupation-related injury among massage therapists and bodyworkers by examining their self-reported symptoms and causes during the past two years. We also hoped to generate data that would allow us to gain a better understanding of the types of injuries this population encounters and to be able to correlate those injuries to the physical demands of the profession.

Methodology

The survey contained 26 questions divided into sections on background and type of practice (e.g., years of experience, practice setting, primary modality), general health, injury prevention techniques used (exercise, stretching, receiving massage), symptoms of injury and specific injuries, and demographics (gender and age). Drafts of the survey were pilot-tested with active massage practitioners to make sure the questions were clear and easy to answer. Associated Bodywork & Massage Professionals (ABMP) then created a web-based version of the survey and sent an e-mail to 1,000 of its members, selected at random from U.S. members living in all 50 states, inviting them to participate in the survey. Follow-up e-mails were sent to the same group to encourage participation for those who had not yet responded.

At the end of several weeks, 601 practitioners had responded to the survey, for a response rate of 60 percent. This response provided a large enough sample to allow us to assume that the results are representative of the overall massage and bodywork practitioner population in the United States, with a few exceptions due to survey limitations, which are discussed below. The raw data were sorted and analyzed using a database program. Incomplete surveys, where respondents had skipped one or more questions, were still included in the overall analysis. Since non-responses made up a very small percentage for all of the questions, it was felt that this would not change the outcome of the analysis.

Demographics

The respondents were 78 percent female, while professional massage organizations, such as ABMP, report female membership in the 80 percent to 84 percent range, so the sample is fairly close to representing the gender ratio in the overall population of practitioners. However, there may have been a bias in the survey responses when it comes to age and years of practice, with older, more experienced practitioners being more likely to fill out the survey. In fact, 98 percent of the respondents have been practicing for more than five years. The average age of survey respondents is 50 years old, while the average age of *Massage & Bodywork* readers is 42 years old. The average age of the workforce for the general population is around 45 years old. It is difficult to say why younger, less-experienced practitioners did not choose to take part in this survey. Perhaps they did not feel the survey was relevant to them, because they are new to the profession.

Major Statistical Findings

From the responses to the survey, we were able to generate several categories of health indicators. These included: reports of general health; symptoms of injury related to work; injury symptoms that lasted more than seven days; seeking treatment for symptoms; being diagnosed with an injury or condition; having to make changes to their practice due to symptoms (e.g., cut back on number of massages given, change techniques, etc.); and, considering leaving the profession due to symptoms or concern about being injured.

We also asked respondents about the eventual outcome of their symptoms, both the level and frequency at which they were now experiencing symptoms, as an indicator of chronic conditions.

We were then able to compare the relative health of groups of respondents based on how they answered other survey questions. We compared, for example, those who said they had received no injury prevention training with those who received training in massage school to see if this training or lack thereof made a difference in report of symptoms, injuries, diagnoses, and outcomes. The following are some of the findings of the survey, including a number of these comparisons.

General health

On the whole, massage therapists and bodyworkers appear to be a healthy group. Among respondents, 89 percent rate their overall health as either “good” or “very good,” 10 percent rate their health as “average,” and only 1 percent rate their health as either “poor” or “very poor.” Only about 8 percent of respondents reported that they smoked, while approximately 23 percent of the general U.S. population are smokers. Not surprisingly, survey respondents who smoke reported many more health problems across all health indicators than nonsmokers. Survey respondents reported diseases that can affect general health (like diabetes or heart disease) at or below the rates at which they occur in the general population.

Health maintenance efforts

What do respondents do regularly to stay healthy and avoid musculoskeletal injury? Stretching, practicing proper body mechanics, and receiving massage were the most common responses (see Table 1, page 50). Almost two-thirds of respondents received massage at least once a month. It is interesting to note that less than half of the respondents incorporate strength-building and aerobic exercise into their health maintenance efforts, although both types of exercise can play a role in preventing musculoskeletal injury.

Injury prevention training

Of the 601 survey respondents, 82 percent indicated they had received some type of work-related injury prevention training (see Table 2, page 50). To look at the effectiveness of currently available forms of injury prevention training,

Which of the following do you do regularly to protect your own health?

Activity	Number of respondents	% of all 601 respondents
Stretching	434	72%
Practice proper body mechanics	425	71%
Receive massage	394	66%
Self-massage	338	56%
Strength building exercise	264	44%
Aerobic exercise	237	39%
Other	194	32%
No answer	1	0.2%

Table 1. Self-care activities

respondents who reported receiving this training in massage school were compared to those who reported having received no training at all. While both groups reported their overall health to be about the same, and both had about the same percentage reporting symptoms, the group that had no prevention training was more likely to have symptoms that lasted more than seven days and was more likely to have considered leaving the profession. Both groups were equivalent in the percentage that sought treatment for symptoms and received an injury diagnosis. However, respondents who had received injury prevention training were more likely to have a good outcome of their condition, with 72 percent reporting their symptoms completely resolved, or low level and infrequent, compared to 65 percent for the group that did not receive training.

To get an idea of what the injury prevention training might have covered, we compared the two groups on the types of activities they regularly practiced to prevent injury. The two groups were fairly equal in their use of stretching, strength training, aerobic exercise, self-massage, and receiving massage. However, a much larger percentage (74 percent) of the training group reported practicing proper body mechanics than the no training group (48 percent). Also, a smaller percentage of the training group reported leaving less than 15 minutes between massages and doing more than 30 hours per week of hands-on massage. It may be that, during their injury prevention training in massage school, this group learned the importance of using good body mechanics, taking breaks, and not overloading themselves by working too many hours.

To see if practicing proper body mechanics makes a difference in injury prevention, we compared those who reported regularly practicing good mechanics with those who did not (see Table 3, above right). It would appear that

Table 2. Injury prevention training

Injury Prevention Training	Number of respondents	Symptoms	Symptoms >7 days	Sought treatment	Diagnosed condition	Considered leaving profession
In Massage School	224	178 (79%)	37 (17%)	107 (48%)	91 (41%)	35 (16%)
No Training	105	82 (78%)	29 (28%)	53 (50%)	42 (40%)	23 (22%)

any advantage gained from body mechanics is slight at best. While those who practiced good mechanics reported a lower percentage of symptoms, as well as a lower percentage of symptoms that lasted more than seven days, they were just as likely to have sought treatment from a medical professional. The two groups were also very close in terms of percentage that had made changes to their practice or considered leaving the profession due to symptoms or injury. While good body mechanics is an important part of staying healthy as a bodyworker, by itself it may not be enough to prevent injury.

Modality practiced

Survey responses seem to indicate that the primary modality practiced makes a difference in symptoms, injuries, and outcomes (see Table 4, page 51). We have

Practices proper body mechanics	Number of respondents	Symptoms > 7 days	Sought treatment	Diagnosed	Changed practice	Considered leaving
Yes	424	324 (76%)	80 (19%)	171 (40%)	179 (42%)	71 (17%)
No	176	146 (83%)	42 (24%)	84 (48%)	72 (41%)	34 (19%)

Indicates practicing proper mechanics

Table 3. Proper body mechanics

combined respondents' reports of the type of massage they most commonly practice into categories, with modalities such as deep tissue, clinical, and pressure point work combined into a "heavy pressure" group, and modalities such as reiki, movement therapy, and craniosacral combined into a "light pressure" group. Those who primarily practiced relaxation massage were kept as a separate group for comparison purposes.

Practitioners of all modalities had a fairly high prevalence of symptoms, although there were some differences between modalities in terms of having longer durations of symptoms and seeking treatment

Modality	Number of respondents	Symptoms	Symptoms > 7 days	Sought treatment	Diagnosed condition	Changed practice	Considered leaving
Relaxation	157	122 (78%)	22 (14%)	74 (47%)	61 (39%)	68 (43%)	57 (36%)
Heavy pressure	312	253 (81%)	82 (26%)	174 (56%)	138 (44%)	133 (43%)	58 (19%)
Light pressure	36	20 (56%)	4 (11%)	6 (17%)	5 (14%)	12 (33%)	1 (3%)

Table 4. Impact of primary modality

for symptoms. Practitioners in the “heavy pressure” group were more likely than practitioners in the other two categories to have symptoms that lasted more than seven days, more likely to seek treatment, and more likely to have been diagnosed with an injury when compared to practitioners who primarily offer relaxation massage. However, the “heavy pressure” practitioners were less likely to have considered leaving the massage profession. “Light pressure” practitioners, when compared with relaxation practitioners, were less likely to have symptoms, medical treatment, diagnosed injuries, or to have considered leaving the profession.

It’s interesting to note that the “heavy pressure” practitioners were less likely to consider leaving the profession due to their symptoms or concerns about injury than relaxation practitioners, even though they seem to have more serious symptoms and diagnosed injuries.

Hours of massage work

A variable of particular interest is the number of massage hours worked and its relation to symptoms and injuries (see Table 5, page 52). In many jobs involving repetitive motions and awkward postures, such as intensive computer work or electronics assembly, there is often a dose-response effect based on hours worked. As the number of hours per week of computer or assembly work increases, so does the percentage of workers who experience musculoskeletal symptoms and injuries.

Using the data from this survey we are unable to make a direct comparison between the number of hours worked and reports of symptoms and injuries, because we only asked about hours worked now, not during the period in which symptoms or injuries occurred (we could have asked for hours worked during that period, but we may not have gotten reliable answers if it was as much as two years ago). However, we did ask if symptomatic respondents changed the number of massages they give in response to their symptoms. So, if we look at only those respondents who did not report changing their hours, and assume that, on average, the hours they



worked have remained fairly stable over the past two years, then we can compare symptoms and injuries across groups based on the hours they report.

Comparing the different ranges of hours worked, we found no clear dose-response effect. In fact, a number of the health indicators improved for respondents who reported giving more than 40 hours of massage per week when compared with those who worked between 21 to 30 hours per week. This does not necessarily mean that doing that much massage work makes you healthy; it may instead be that these respondents are able to do that much massage work because they are, in fact, in better health than the average person.

When looking into the effect of time left between massages, the same issues arise as when we looked at hours of massage per week. It is not possible to say for certain how much time respondents were leaving between massages at the time their symptoms

Injury Prevention Training	Practices proper body mechanics	Leaves < 15 mins. between massages	Does more than 30 hrs. of massage per wk.
In Massage School	165 (74%)	48 (21%)	10 (5%)
No Training	50 (48%)	29 (28%)	14 (13%)

Hours of hands-on massage per week	Number of respondents	Symptoms	Symptoms > 7 days	Sought treatment	Diagnosed condition	Changed practice	Considered leaving
1 to 10	148	99 (67%)	19 (13%)	44 (30%)	34 (23%)	35 (24%)	11 (7%)
11 to 20	178	137 (77%)	32 (18%)	83 (47%)	62 (35%)	58 (33%)	28 (16%)
21 to 30	104	78 (75%)	18 (17%)	56 (54%)	48 (46%)	38 (37%)	7 (7%)
31 to 40	31	21 (68%)	7 (23%)	17 (55%)	14 (45%)	9 (29%)	4 (13%)
40+	14	10 (71%)	2 (14%)	6 (43%)	4 (29%)	5 (36%)	2 (14%)

Table 5. Hours of massage practiced

occurred, although only three respondents specifically mentioned leaving more time between massages as a change to their practice in response to symptoms or injury (see Table 6, below). A comparison of the health indicators does not reveal any noticeable differences between the groups, except for those who leave 45 minutes or more between massages. In that group, a smaller percentage of respondents report having symptoms lasting more than seven days, seeking treatment, or being diagnosed with an injury.

Work-related symptoms and injuries

It would appear that the majority of massage therapists and bodyworkers experience some type of musculoskeletal

percent). Many respondents reported pain or discomfort in more than one part of the body in the past two years.

Most of the 465 respondents who reported symptoms said they lasted seven days or less (69 percent); however, 8 percent of respondents had chronic conditions with symptoms lasting more than six months. Among this symptomatic group of 465 respondents, 298 respondents (64 percent) sought medical treatment for their symptoms, with many respondents going to more than one type of health-care provider. Not surprisingly, the type of medical practitioner therapists visited most often was another massage therapist (80 percent of those seeking treatment), followed by chiropractors (69 percent), and acupuncturists (30 percent). A preference for non-allopathic healthcare providers

Time between massages	Number of respondents	Symptoms	Symptoms >7 days	Sought treatment	Diagnosed condition	Changed practice	Considered leaving
<15 mins.	145	115 (79%)	33 (23%)	78 (54%)	58 (40%)	67 (46%)	25 (17%)
15-30 mins	283	224 (79%)	57 (20%)	150 (53%)	125 (44%)	122 (43%)	36 (13%)
30-45 mins	86	66 (77%)	19 (22%)	47 (55%)	38 (44%)	36 (42%)	9 (10%)
45+ mins	73	52 (71%)	12 (16%)	22 (30%)	20 (27%)	32 (44%)	12 (16%)

Table 6. Time between massages

symptoms related to the work they do, with 65 percent reporting pain during or following massage work within the past two years. Adding in other symptoms, such as discomfort, soreness, numbness, and tingling, brings the overall percentage of practitioners reporting some type of musculoskeletal symptoms up to 77 percent, or 465 out of the 601 respondents. The most common locations for symptoms of pain were thumbs (30 percent of respondents), wrists (27 percent), shoulders (26 percent), and low back (25 percent). The most common location for symptoms of discomfort, soreness, etc., was the low back (25 percent), followed by the shoulders (24 percent), thumbs (23 percent), neck (21 percent), and hands (21

is further demonstrated by the fact that only 19 percent of this group sought treatment from a physician and just 14 percent visited a physical therapist.

Of the 298 who sought treatment, 247 (83 percent of those seeking treatment, 41 percent of all survey respondents) reported a diagnosis by a practitioner whose scope of practice includes diagnosis (i.e., chiropractor, physician, naturopath). A number of respondents who reported visiting only other massage therapists also reported diagnoses, and these were excluded from the analysis. A total of 129 respondents reported two diagnosed conditions in the past two years; an additional 35 reported three or more diagnosed conditions.

Overuse syndrome was the most common diagnosis, followed by tendinitis/tenosynovitis and low-back strain (see Table 7, below). The parts of the body most often associated with these injuries were the shoulders, thumbs, low back, neck, and wrists in that order. When looking at the locations of musculoskeletal disorders among the general working population, the most common parts of the body injured are low back, wrists, and shoulders. This difference would seem to indicate that there are unique exposures to work-related risk factors for injury inherent in massage work, and that specific training, work practices, and equipment may be required to help prevent injury.

Diagnosis	Number of respondents	% of 247 diagnosed	% of all 601 respondents
Overuse syndrome	60	24%	10%
Tendinitis/tenosynovitis	52	21%	9%
Low-Back Strain	46	19%	8%
Neck/upper back strain	45	18%	8%
Sciatica	23	9%	4%
Carpal Tunnel Syndrome	22	9%	4%
Rotator cuff tear/tendinitis	11	5%	2%
Thoracic Outlet Syndrome	9	4%	2%
Epicondylitis	7	3%	1%
Bursitis — shoulder	6	3%	1%
Other	33	13%	6%

Table 7. Reported diagnoses



Activities that caused or aggravated symptoms or injuries

Most respondents identified applying pressure, giving massage, and standing for long periods of time as the primary contributors to their injury (see Table 8, below). A significant portion (21 percent) said that non-work-related activities were at least partially responsible for their symptoms.

Which of the following activities, if any, do you believe contributed to your injury?

Contributing activity	Number of respondents	% of 465 with symptoms
Applying pressure	218	47%
Giving massage	176	38%
Standing for long periods of time	96	21%
Other non-work related	96	21%
Positioning or holding client's limbs or head	88	19%
A particular massage technique	65	14%
Working at the computer	58	13%
Lifting or carrying portable massage table or other gear	50	11%
Other work related	32	7%
Sitting for long periods of time	10	2%

Table 8. Perceived contributing factors

Applying pressure was again mentioned the most often as an activity that aggravated symptoms, with standing for long periods and giving massage switching order in the next two positions (see Table 9, below). Lifting or carrying massage tables or other equipment was more likely to have aggravated existing symptoms than to have caused them in the first place. This is especially true of those who reported symptoms in the low back, which can make lifting difficult.

Do any of the following activities in your practice make your symptoms worse?

Aggravating activity	Number of respondents	% of 465 with symptoms
Applying pressure	153	33%
Standing for long periods of time	90	19%
Giving massage	84	18%
Positioning or holding client's limbs or head	69	15%
Lifting or carrying portable massage table or other gear	62	13%
A particular massage technique	59	13%
Working at the computer	53	11%
Other	40	9%
Sitting for long periods of time	25	5%

Table 9. Perceived aggravating factors

Effects from prior accidents

Out of the 601 respondents, 282 or 47 percent reported having had a major accident or injury to the upper or lower extremities, back, or neck (see Table 10, below). The most common body part injured in an accident was the neck, with 25 percent of all respondents reporting that location. The next most common injury locations were the low back (17 percent) and the shoulders (15 percent). Out of the 282 who reported a prior accident, only 53 reported no symptoms related to massage work, leaving 229 respondents (38 percent of all respondents) whose symptoms during massage work may have been in part due to an earlier accident or injury. The most common causes of injuries were automobile accidents, household accidents (e.g., falling from a ladder), and sports injuries. It may be that these prior injuries, if not fully healed, would have made this group more susceptible to work-related musculoskeletal symptoms. This increased susceptibility can be seen when comparing the percentage of those who reported both a prior injury and work-related symptoms (81 percent) with those who reported no prior injury but had work-related symptoms (74 percent).

Prior Accident or Injury	Number of Respondents	Symptoms during or just after massage work
Yes	282	229 (81%)
No	302	223 (74%)

Table 10. Prior injuries or accidents

However, when looking more closely at the prior injury group, only 65 of them (11 percent of all respondents) listed non-work related injuries or activities as one of the causes of their symptoms during massage work, and only 21 (4 percent) listed non-work related injuries or activities as the only cause of their symptoms. Even though their prior injuries may have made them more likely to have work-related symptoms, the majority of respondents in this group attribute their symptoms to the demands of massage work.

Changes to practice

When asked if their pain or symptoms had ever caused them to make changes to their practice, 260 responded “yes” (56 percent of those with symptoms, 43 percent of all survey respondents) (see Table 11, above right). Of this group, the most common change reported was to alter massage techniques. Almost half of this group reported doing fewer massages in response to their symptoms, and 21 percent actually stopped doing massage for a period of time. Of those who reported making other changes, common responses included changing body mechanics, increasing self-care, leaving more time between massages, no longer using a certain body part (e.g., thumbs, elbows) to apply pressure,

changing the height of the table, or sitting more often during the massage. It is difficult to say which, if any, of these changes were effective in preventing further symptoms, since most of the respondents reported more than one type of change.

Surprisingly, 41 percent of those with symptoms chose not to change the way they practice massage in response to those symptoms, even though the majority of them believed it was massage-related activities (applying pressure, positioning a client) that caused or aggravated their symptoms.

Have you ever had pain or other symptoms that changed the way you practice massage work for any length of time?

Changed practice?	Number of respondents	% of 465 with symptoms	% of all 601 respondents
No	192	41%	32%
Yes	260	56%	43%
No answer	13	3%	2%

If yes, which of the following did you change?

Changes made	Number of respondents	% of 260 who made changes	% of all 601 respondents
Change massage techniques	181	70%	30%
Do fewer massages	116	45%	19%
Stop for a period of time	55	21%	9%
Change careers	6	2%	1%
Other	54	21%	9%

Table 11. Impact on practice

Injury and symptom outcomes

Most symptomatic respondents had good outcomes for their symptoms, with 11 percent reporting their symptoms to be completely resolved and 58 percent still having infrequent symptoms at a low level (see Table 12, page 56). However, 21 percent reported low level, but frequent symptoms; 3 percent are still experiencing high level, but infrequent symptoms; and an unfortunate 4 percent reported symptoms that are both high level and frequent. Among those who reported initial symptoms, almost 9 out of every 10 have some type of on-going symptoms. In other words, among all survey respondents, about two-thirds of practitioners are experiencing recurring symptoms.

Frequency of symptoms appears to be more important than level of symptoms among the 105 respondents (23 percent of symptomatic and 18 percent of all survey respondents) who considered leaving the massage profession due to symptoms or fear of an injury. Half of those who reported their symptoms to be occurring frequently at a high level had considered giving up massage work as a result. Those who reported that their symptoms had completely resolved were least likely to consider leaving the profession. →

Symptoms outcome	Number of respondents	Considered leaving the profession
High level, frequent	18	9 (50%)
Low level, frequent	99	40 (40%)
High level, infrequent	13	2 (15%)
Low level, infrequent	271	49 (18%)
Completely resolved	52	4 (8%)

Table 12. Symptoms outcome

Perspective on the Results

There appears to be a lack of coherence in the way massage and bodywork practitioners think about the physical demands of this type of work in relation to their health. Most therapists described their overall health as “good” or “very good,” yet three-quarters of them report having experienced some level of musculoskeletal symptoms in the past two years. Around 80 percent of symptomatic respondents attribute their symptoms entirely to massage work-related activities, yet 41 percent of these respondents chose not to change the way they practice massage as a result.

Half of all respondents reported seeking treatment for their symptoms, and four out of 10 were diagnosed with a specific condition. Almost 90 percent of those who reported symptoms are still experiencing them to some degree, although for most, their symptoms seem to be at a level that allows them to continue in the profession. Still, almost one out of every five practitioners has considered giving up the profession due to symptoms or injuries.

These symptoms and injuries can have an economic impact on practitioners as well. Almost one out of five respondents reported having to reduce the number of massages they did in response to symptoms or injury. One out of every 10 respondents reported stopping completely for a

A complete copy of this article including an additional appendix and charts is available at www.massageandbodywork.com.

period to recover. Only 1 percent of respondents reported changing careers as a result of their symptoms, but there may be many others who have also changed careers and, as a result, not maintained their ABMP membership and therefore did not have access to the survey.

It would appear from the survey responses that massage school is the most effective environment for injury prevention education. While some education is better than none, the large number of practitioners who are still experiencing symptoms and injuries even after receiving training seems to indicate that the training is inadequate.

Limitations of the Survey

This was a cross-sectional survey; that is, it looked at only a short period of time across the study population, rather than tracking their activities and well-being over a long period of time. Therefore, it is not possible to draw definitive conclusions about cause and effect, since we do not know if one event preceded another. For example, we are unable to reliably compare the number of hours worked with symptoms and injuries, because we asked only about hours worked now, not during the period in which symptoms or injuries occurred. We could have asked for hours worked during that period, but we may not have received reliable answers if it was as much as two years ago. For similar reasons, it is difficult to draw conclusions about the effect of the length of time left between massages.

There are also several potential biases in the data. All surveys like this one depend on self-reporting of activities, health conditions, and symptoms, all of which can be a source of biased responses. For example, a number of respondents reported a diagnosed condition, but did not report seeing a healthcare practitioner whose scope of practice includes diagnosis and, therefore, could not be counted in the results for this parameter. Another limitation worth noting is that the survey respondents were both a little older and had a longer tenure in the profession than average. For this reason, it is not possible to draw conclusions about less-experienced practitioners due to the lack of response from that group.

There is an additional bias that could mean the survey results understate the extent of the problem. Practitioners who are no longer active in the profession are probably less likely to still be members of ABMP, and were less likely to have taken this survey. Therefore, we may be seeing a “survivor effect” among those who responded to this survey. In other words, the respondents have found ways to continue working in the profession, despite the fact that the majority of them are experiencing some level of musculoskeletal symptoms due to work. If the level and frequency of symptoms that practitioners experience is one of the reasons they decide to leave the profession, then the problem may be even more widespread than this survey indicates, since those suffering the worst symptoms may have already left the profession. The anecdotal and empirical evidence cited at the beginning of this article would tend to support this assertion.

There were several other questions we were unable to answer due to limitations in the survey design and in the types of responses we received. We were unable to assess how early in a massage career symptoms and injuries might occur, since fewer than 2 percent of respondents had worked in the field for less than five years. We were also unable to compare self-employed practitioners with those who work for someone else to see if having more control over working conditions provides an advantage, since almost all respondents (98 percent) reported that at least part of their practice was self-employed. →

Recommendations for individuals based on these survey results

- Be informed about injury prevention and ergonomics. The survey also confirms the importance of going beyond the study of proper body mechanics to be fully armed with the information needed to prevent injury. An understanding of injury physiology, specific injuries, treatment options, and work situations to avoid are among the other equally important pieces of information to acquire.
- Learn more about ergonomics and how it applies to massage work. Ergonomics goes beyond body mechanics to look at issues such as scheduling of clients, selecting proper equipment, and setting up the work area in order to improve posture and optimize the physical demands of the work. For example, a massage table that is too wide will result in bending and reaching when working from the side of the table, but a narrow table with removable side arms will allow the practitioner to get in closer and stand more upright. If you use a computer in your practice or in a second job, you can find out more about office ergonomics from these websites: www.osha.gov/SLTC/etools/computerworkstations and www.lni.wa.gov/IPUB/417-133-000.pdf.
- Applying heavy pressure can cause injury. If you experience symptoms when applying heavy pressure, experiment with using different techniques, different body parts (knuckles, elbows), tools for applying pressure, or the use of other modalities that use less pressure. If you have more than one client who requires deep work, avoid scheduling them on the same day.
- Get medical treatment early when symptoms develop. Treatment for a musculoskeletal disorder is often more effective if it's started early on during the onset of symptoms.
- Use continuing education opportunities to learn modalities such as lymphatic massage, craniosacral, and Trager, which place less of a physical demand on the practitioner. This survey suggests these modalities are less likely to result in injuries.
- Leave plenty of time between massages and use that time for rest, stretching, and preparation for your next client. Although the survey did not show a clear correlation between time left between massage and injury, taking sufficient rest time between periods of physical exertion is known to be beneficial in preventing work-related musculoskeletal injuries.
- Know your limits. Avoid scheduling too many massages in a day or in a week.
- Limit your nonwork activities that are hand intensive or otherwise physically demanding, in order to give yourself adequate time to recover from the demands of massage work. This study indicated that nonwork activities can contribute to work-related injury.
- Avoid overusing your thumbs, a major injury site. For every pound of pressure you apply with your thumb, 10 to 12 pounds of pressure is transmitted to your carpometacarpal joint. This type of pressure, if repeated enough, can cause cartilage damage and eventual osteoarthritis at the base of the thumb.
- Practice proper body mechanics. Although using good body mechanics does not prevent injury in and of itself, it is a useful element in an overall injury prevention effort. Keep your wrists straight and your fingers slightly flexed as you apply pressure. Keep your shoulders neutral and elbows in, and stand in a way that respects the natural curves of your back to protect these common injury sites. Consider purchasing a powered, height-adjustable table, so you can adjust it to allow for good body mechanics as you work. Hydraulic, height-adjustable leg kits are available for retro-fitting existing tables.
- Engage in an exercise program (strength-building and aerobic) to stay fit for the physically-demanding work of doing massage. Exercise increases circulation, strength, and endurance, all necessary elements in maintaining health and avoiding injury.
- Avoid lifting and carrying a portable massage table, which can aggravate existing symptoms or injuries. If you use a portable massage table in your practice, purchase a lightweight model, and see if a wheeled carrying case is available for it. Pack accessories and other equipment in a separate bag.
- Avoid smoking. It reduces circulation, especially to the extremities, and reduced circulation can impact your body's ability to recover from physical exertion.
- Maintain good health insurance coverage, and look into supplemental insurance, such as workers' compensation or disability insurance, which will provide you with some form of income if you are unable to work due to an injury.



Recommendations for the profession

- Provide more injury prevention training in massage schools, at conferences and continuing education sessions, and in industry publications. Go beyond simple body mechanics to include the principles of ergonomics in selecting and setting up equipment, scheduling clients, and choosing appropriate massage techniques with awareness of the physical demands they place on the practitioner. Increase awareness among students of the risk and causes of injury, both in massage work and in outside activities, so they may protect themselves during massage school and in the workplace after graduation. It is also important to provide more extensive training for massage school administrators and instructors in injury physiology, ergonomics, and injury prevention techniques, so they can be better equipped to provide accurate and appropriate guidance and training to their students.
- Provide guidance on a career choice and progression for massage therapists and bodyworkers. Practitioners should be encouraged to expand their repertoire of modalities, so they are better able to use a range of techniques that suit both their own physical abilities and their clients' needs. The use of the thumbs (a major injury site) and heavy pressure (which the survey indicates can cause injury) to do massage should be limited according to the tolerance of the practitioner for using these techniques.
- Perform more research into the causes and prevention of symptoms and injuries among massage therapists. Additional surveys and studies could be designed to answer some of the questions that this survey could not, particularly:
 - 1) How early do symptoms start to arise among beginning practitioners?
 - 2) Is there a dose-response effect for hours of massage performed per week (i.e., does 30 hours of hands-on massage work result in more injuries than 20 hours)?
 - 3) What are the most effective methods for preventing injuries, and if an injury does occur, what are the most effective types of treatments and work practices to enable the practitioner to remain in this profession?

Other types of research may be appropriate as well, such as laboratory or field studies to evaluate the physical demands of specific massage techniques and determine which are the most risky.

Once the extent of the problem is known, efforts can be focused on identifying best practices for avoiding injury and improving the longevity of practitioners in the field. The challenge in finding solutions comes from the fact that it is hands-on massage itself that seems to be the cause of most of the symptoms and injuries to practitioners. However, as with most jobs, the way the work is performed has more to do with how safe it is than the nature of the work itself.



Even with the limitations of this type of survey, the results obtained by this study clearly indicate the need for further research on work-related injury among massage and bodywork practitioners. A more complete, fully-funded research study is needed to establish the extent to which work-related injury is an occupational hazard of massage and bodywork and define the measures that should be taken to effectively prevent such injuries.

Conclusions

We have always known that work-related injury in the massage and bodywork profession exists. This study strongly indicates that injury is a significant problem in this profession. Any profession that presents ongoing, significant risks to the health of those who work therein, and has a high attrition rate as a result, will have difficulty maintaining its integrity and thriving in the long-term. In a profession that, by its very nature, is meant to promote well-being and health, it seems unthinkable not to take dramatic steps to make sure this issue receives the attention, education, and funding necessary to give every massage therapist and bodyworker the possibility of having a long and healthy career as a professional practitioner. **M&B**

Lauriann Greene, L.M.P., is the author of Save Your Hands! Injury Prevention for Massage Therapists (www.saveyourhands.com). A graduate of Seattle Massage School, she has done extensive research, writing, and speaking on the subject of occupation-related injury among hands-on health practitioners.

Rick Goggins, C.P.E., L.M.P., is a senior ergonomist with the Washington State Department of Labor and Industries and a licensed massage practitioner. Contact him at ergonomics@lni.wa.gov.

References

- 1 Holder, Nicole L. et al. Cause, Prevalence and Response to Occupational Musculoskeletal Injuries Reported by Physical Therapists and Physical Therapy Assistants. *Physical Therapy*, Vol. 79, Number 7, July 1999; 642-652.
- 2 Ibid.