Floatation Therapy for chronic neck pain

A case study demonstrating the value of floatation therapy for chronic neck pain

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Objective

Chronic neck pain is now a normal condition as a result of modern day society fueled by stress, extended hours in front of a computer, and cell phone usage. Our medical society has both misunderstood and mismanaged chronic neck pain and created an opioid crisis.
The threat of reprimand from medical boards has encouraged pain management professionals to seek alternative methods of co-managing the serial mind and body implications of chronic pain.

The objective of this case study is to observe the effects of four (4) weeks of floatation therapy upon chronic neck pain and the collateral effects of sleep, depression and anxiety. A second objective is to determine if there is any difference between floating one (1) vs. two (2) times a week for the same time period.

Background

To initiate this case study, participants were sought through an online screening process based on the following criteria:
(a) neck pain for more than 3 years (self-rated as greater than 5 on a numerical 0-10 pain scale with 0=none and 10 =extreme pain);
(b) no prior history of floating;
(c) no surgery for this condition;
(d) not taking opioids, and
(e) not currently receiving medical treatment or alternative medicine intervention including injections or therapy.

Of almost 200 applicants, only 21 fit the criteria and were accepted into the study. Of those 21 people, 10 elected to participate -nine (9) female and one (1) male. They were then randomly divided into two equal groups.

Some or all of the participants indicated radiating pain or numbness, anxiety, depression, sleep issues, and various activities of affect on work and daily living. In the past, all of the participants tried a variety of pain management and lifestyle approaches, other than floating.

Method

The intervention for this case study involved "floating" in a 9' long x 5' wide fiberglass tank with a hinged lid, shaped like a large egg and filled with 175 gallons (10" deep) of a salt solution. This solution contains 1000 pounds of medical grade Epsom salt, or magnesium sulfate (MgSO4) and is maintained at skin temperature (94 degrees F). The tank is within a private room containing a shower. To "float" the individual disrobes, showers, inserts earplugs, turns off the overhead room light, then climbs inside the tank which has an internal light and music controls. The individual closes the float tank lid and then transitions onto a supine (face up) position and begins to float effortlessly.

The study lasted four (4) weeks in duration[1] and involved two random groupings of four participants per group. Group A floated once a week for four weeks for a total of 4 floats.
Group B floated twice a week for four weeks, for a total of 8 floats. A daily subjective survey was completed by each individual, using a numeric scale on a 0-10 continuum with descriptors. This month long daily survey was initiated on day (1) one of the study, regardless of the day of their first float in week(1) one. For purposes of comparison, a baseline survey with the same questions was completed by the participants prior to their first float.

There was no interaction with the participants during the course of the study. There was no cost for the participants and there was no financial gain from The Float Zone, where the case study took place. There are no other disclosures.

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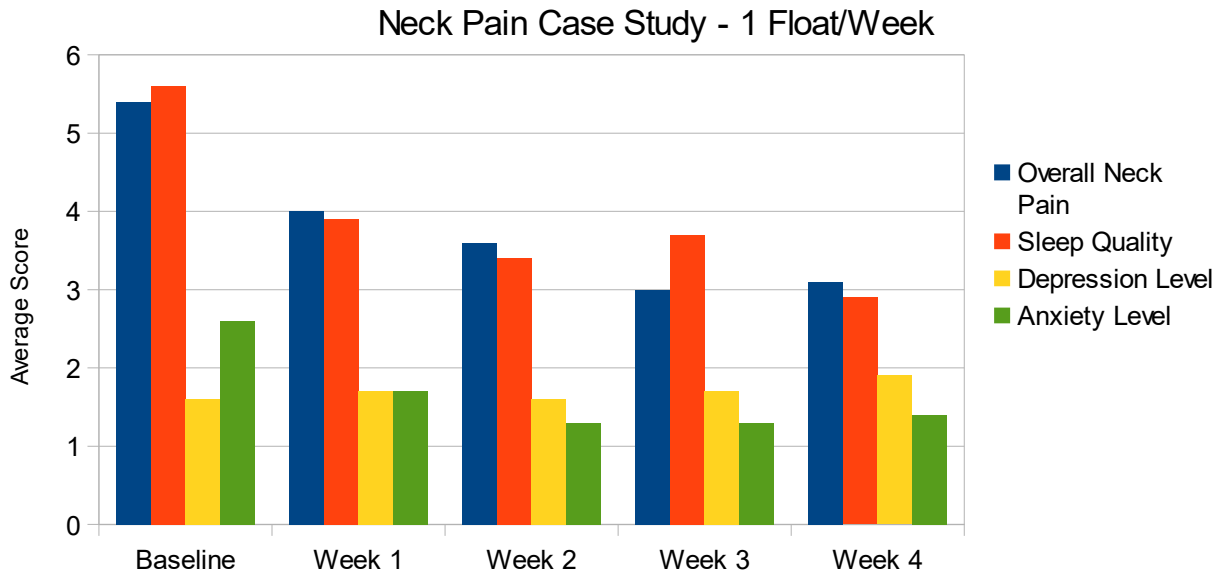
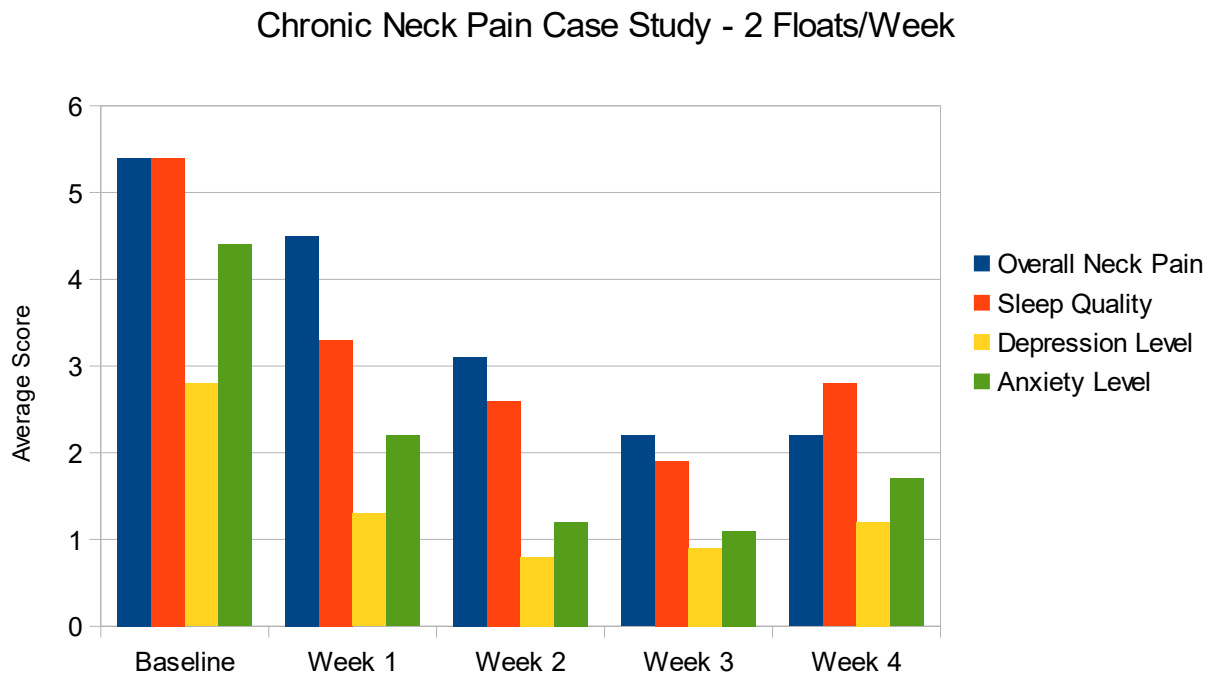
1 The four week time frame was chosen to reflect a common period of most therapeutic approaches, such as chiropractic or physical therapy to establish if a protocol is working.

Results

Group A: One Float/Week



Group B:Two Float/Week



The above graphical results, as well as others in this paper, are based upon group data from the 5 participants in Group A and 5 participants in Group B. All 10 participants reported daily overall scores for pain, sleep, anxiety and depression over a 30 day period, using a 0-10 scale with descriptors previously mentioned. The graphs compare the aggregate weekly averages for Group A (graph on the left) and Group B (graph on the right) for the four represented categories to the average baseline scores for each group.

In both groups, it is clearly represented both graphically and numerically, that the Week 4 averages, reflective of the conclusion of the study, are considerably lower than the baseline averages at the start of the study. This clearly demonstrates improvements in all categories for both groups A and B.

Yet, while both groups did benefit, their trends distinguish a difference between float frequencies. The results indicate that both Group A and Group B made positive gains by lowering pain intensity, improving sleep quality, decreasing depression and decreasing anxiety from beginning to end. The results also show that Group B, who floated twice as frequently as Group A demonstrated significantly greater relative gains in all categories.

The individual category improvements are as follows:

Overall Pain

Evaluating the intervention of floating on pain levels, both groups made improvements. **Group A**, the once per week group, initiated the study with a baseline average of 5.4/10 and a week 4 final average score of 3.1/10, reflecting a reduction of of 2.3 points. This represents a **43% improvement**.

Group B, the twice per week group, began with the exact same average baseline pain score of 5.4/10 and a week 4 final average score of 2.2, reflecting a reduction of 3.2 points or a **59% improvement**.

Comparing Group A to Group B, there is a 16% difference between each group's overall improvement. This 16% represents a **37% greater improvement for Group B** (2 floats/week) **over Group A** (one float/week).

Graphically, Group A shows an initial first week immediate improvement followed by only minimal further gains and even some instability with that gain near the end. The twice a week float group showed immediate, sustained and continuous improvements throughout the duration of the study.

Quality of Sleep

Evaluating the intervention of floatation therapy on sleep quality associated with chronic neck pain, both groups had almost identical average baseline scores. Group A was 5.6/10 and Group B was slightly lower at 5.4/10. Both groups showed improvement.

Group A ended with a week 4 average score of 2.9, which is a 2.7 point reduction, reflecting a **48% improvement**. **Group B** had a week 4 average score of 2.8, which is a 2.6 point reduction and a **48% improvement**.

Comparing Group A to Group B, there is no difference between Group A and B, which reflects the **same percentage of improvement between Group A and Group B**.

Graphically, both groups demonstrate immediate overall positive improvement. However, the once weekly group was not only improved less, but demonstrated an instability with maintaining gains throughout the study including the final week. Group B had initial improvement followed by sustained and stable improvement until the final week (Thanksgiving week).

Depression Level

Evaluating the intervention of floatation therapy on depression associated with chronic neck pain, Group A had a much lower baseline depression score of 1.6/10 (less overall depression rating) vs. that of Group B with an average baseline depression score of 2.8/10. Both groups had lower baseline levels of depression than any other category.

Group A had a week 4 average score of 1.9 which is actually an increase of .3/10, or barely a change from beginning to end. This is actually representative of a negative 18% improvement. **Group B** had a week 4 average of 1.2 which is a 1.6 point reduction or a 57**% overall improvement.**

This demonstrates a 75% difference between Group A and B or a **160% improvement of Group B vs. Group A.**
Graphically, Group A demonstrates barely any improvement in depression throughout the study. Group B showed immediate, continued and sustained improvement until the end where there was a slight increase over week 3 but still far below the initial value.

Anxiety Level

Evaluating the intervention of anxiety related to chronic neck pain, there was a significantly greater baseline average of Group B's anxiety level at 4.4/10 versus that for Group A at 2.6/10. Coincidentally, whereas both groups had identical pain averages, the twice weekly group had a significantly greater average anxiety level.

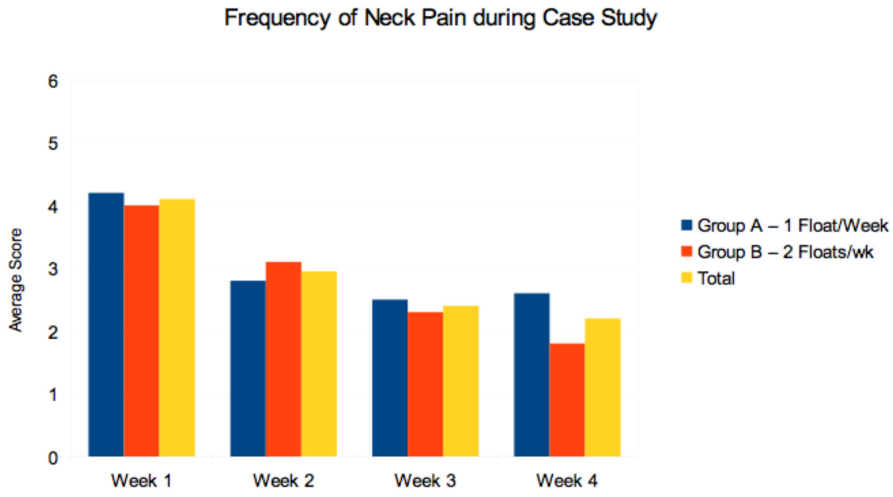
Group A had an ending score of 1.4/10, which is a 1.2 point drop or a **46% improvement**. **Group B**, the two floats per week group had a 4 week average of 1.7, which is a 2.7 point reduction and an **improvement of 61%**. This is reflective of a 15% difference between the groups and a 33**% improvement of Group B vs. Group A.**

Frequency of Pain

Evaluating the frequency chronic neck pain, Group A and B both had almost identical Week 1 average values at 4.2 and 4.0, respectively. **Group A** dropped to 2.6/10 at the end of the study, reflecting a 1.6 point reduction, or **38% improvement**. **Group B** ended the study at 1.8/10, reflecting a 2.2 point drop, or a **55% improvement**. This is reflective of a 17% difference between the groups and a **45% improvement for Group B vs Group A**.

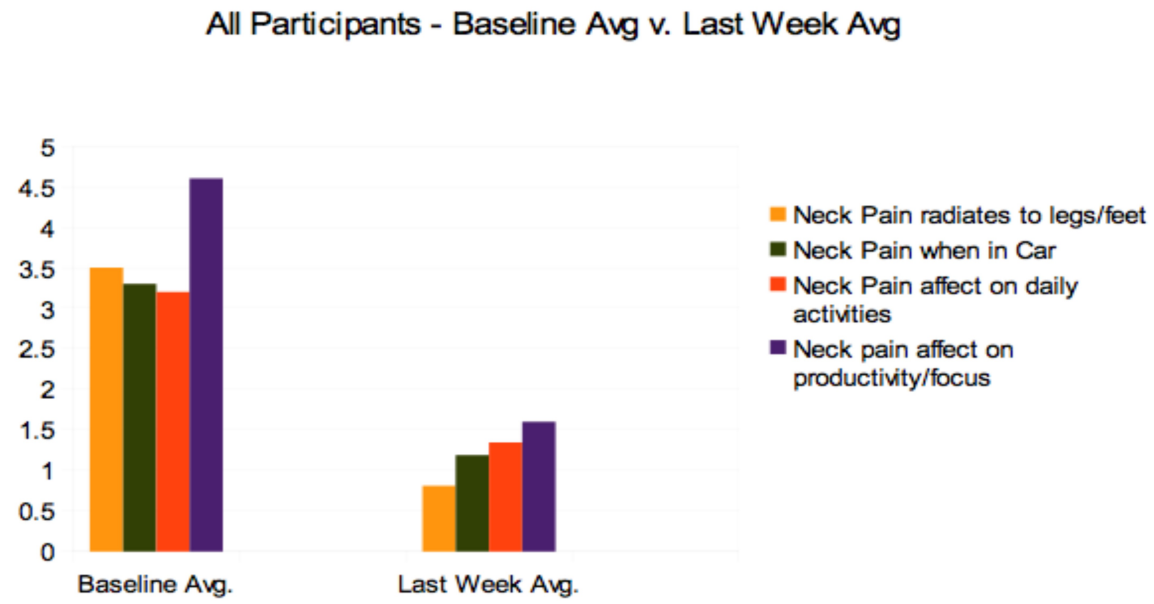
Both groups demonstrated immediate initial improvement, but Group A did not sustain continued improvement. Group B demonstrated immediate, sustained and continued lessening in the frequency of pain throughout the duration of the study. This is consistent with and reflective of the trends noted in all the other parameters studied.

To appreciate a collective improvement of both groups, the frequency graph also has a bar graph showing the frequency tendency of groups A and B. Together, they demonstrate a 1.9 point reduction or a 46% collective reduction in frequency of neck pain.



Other Categories

Lastly, the following graph depicts four additional categories that were tracked. These relate to the quality of life and activities of daily living affected by chronic neck pain. On the left side of the graph is the combined group baseline average. On the right is the last week average. It is visibly apparent that significant improvement was made in all these categories.



Conclusion

Floatation therapy, otherwise known as floating, has a direct and positive effect on reducing chronic neck pain, and improving associated sleep quality, anxiety and depression. Float frequency does make a difference, whereas floating twice weekly has a more pronounced effect than one float per week, for a period of 4 weeks. Patients, medical professionals and alternative health care providers should consider floatation therapy by itself and in tandem with other mind/body approaches to manage chronic neck pain.

Discussion

Chronic neck pain is a major cause of disability and unavoidably involves a collateral issues, such as an emotional component and an affect on daily activities. Individual perceptions of neck pain and its effects on the individual, are also highly subjective. No two individuals interpret pain or emotions with the same physiology and psychology. In this case study, participants used the same same scoring system with the same intended interpretation of 0-10 values. However, some have much higher pain thresholds than others and score themselves lower, whereas some have lower thresholds and relatively score themselves much higher. Smaller group sizes can be more influenced by this concept which a larger subject study would mitigate.

Due to the random groupings, each category had different baseline starting points, which was less pronounced with pain level, pain frequency and sleep as it was with depression and anxiety. Group B happened to have a higher emotional dysfunction, and yet they improved more. With Depression as an example, for both groups it was a very low baseline and harder to visualize significant change. Anxiety was probably a better indicator of emotional status and influence, because there was a higher initial value than depression, especially in Group B.
Both groups clearly make improvements in pain level and pain frequency. It appears that the more severe an issue, the greater the response/improvement. Those with higher baseline averages made more significant improvements across the board. It also appears that when physical pain changes, emotional dysfunction also improves, highlighting how physical pain and emotional pain are connected.

Although individual results were not discussed in this study, they do show that even those with minimal issues in areas like sleep, anxiety and depression, a positive difference was made. This was also carried forth in the group data. All participants had a minimum of a 5/10 in the pain and sleep category, but some had minimal issues with anxiety and depression to begin.

One important item of mention is that this study took place during the month of November, in and around Thanksgiving. Some more than others are affected by the stress of the holidays and family gatherings. This needs to be taken into account with regard to the emotional piece of the puzzle, including sleep values at the end of the study. It is reasonable to think that during the last week of the study, Thanksgiving week, that sleep and emotions could be disrupted and should be seen as a part of the experiment that was affected by external circumstances. With this in mind, it is a positive sign that both pain levels and pain frequency were relatively unaffected by this concept. Thus, despite fluctuations emotional factors or sleep, pain and frequency of pain levels still decreased / improved.

The subjects in this study all had chronic neck pain greater than 3 years. This is considerably more time than the definition of chronic pain, to the point where any improvement should be considered a successful trial. This is also in light of a limited time frame of a four (4) week case study period to observe improvement. In musculoskeletal medicine, this is considered a very short time frame to determine successful outcomes. It stands to reason that if improvement is made of this magnitude in this short a time frame, a longer case study duration may yield even greater and more lasting results.

While this study was concerned primarily with pain intensity, pain frequency, sleep, and emotional markers, such as depression and sleep, multiple other categories were tracked. These included pain at rest, affect on standing and walking, radiation of pain to the extremities, affect on car travel and sitting, and affect on activities of daily living. All participants who had difficulty with any of the above, made improvements in them, evidenced both graphically and numerically.

Lastly, none of the participants floated for 30 days following the study. A 30 day follow-up survey indicated that 2 of 10 participants continued to maintain most of the gains made during the month. 3 of 10 noted some maintenance of their gains, another 3 only noticed negligible maintenance of their gains, and 2 did not respond. Considering that all the subjects had a chronic pain syndrome of greater than 3 years, this is significant but also points to the need to continue floating at some semblance of consistency to maintain gains.
A longer study is warranted.