

Floatation Therapy for chronic back pain

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

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Objective

Chronic low back pain is of epidemic proportions. We are now experiencing an opioid crisis as a reflection of the way in which chronic back pain has been both misunderstood and managed. Pain management professionals are now seeking alternative methods to co-manage the mental 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 low 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) low back pain for more than 5 years (self-rated as greater than 5 on a numerical 0-10 pain scale with 0=none and 10 =extreme);
- (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.

Out of 180 applicants, only 20 fit the criteria and 8 participated in the case study, five (5) women and three (3) men.

Chronic pain is often defined as pain lasting longer than 12 weeks. It is purposeful that the 8 participants chosen far exceed the baseline description of “chronic pain,” which also lends itself to collateral physical and emotional involvement.

Some or all of the participants indicated radiating pain or numbness, anxiety, depression, sleep issues, and that various activities of work and daily living were affected. 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.

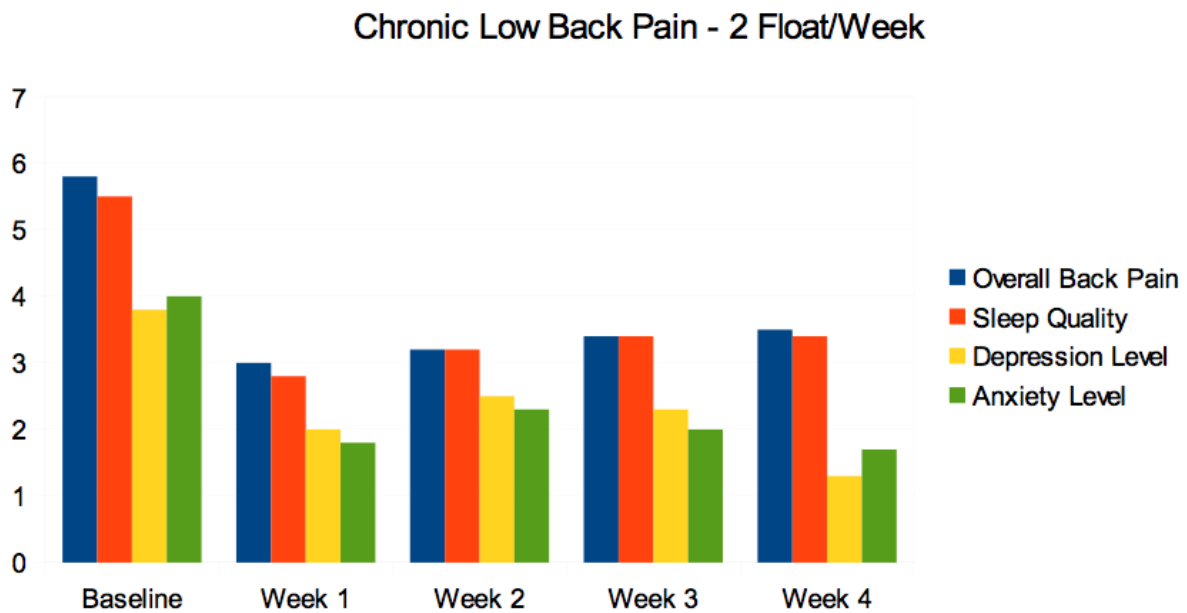
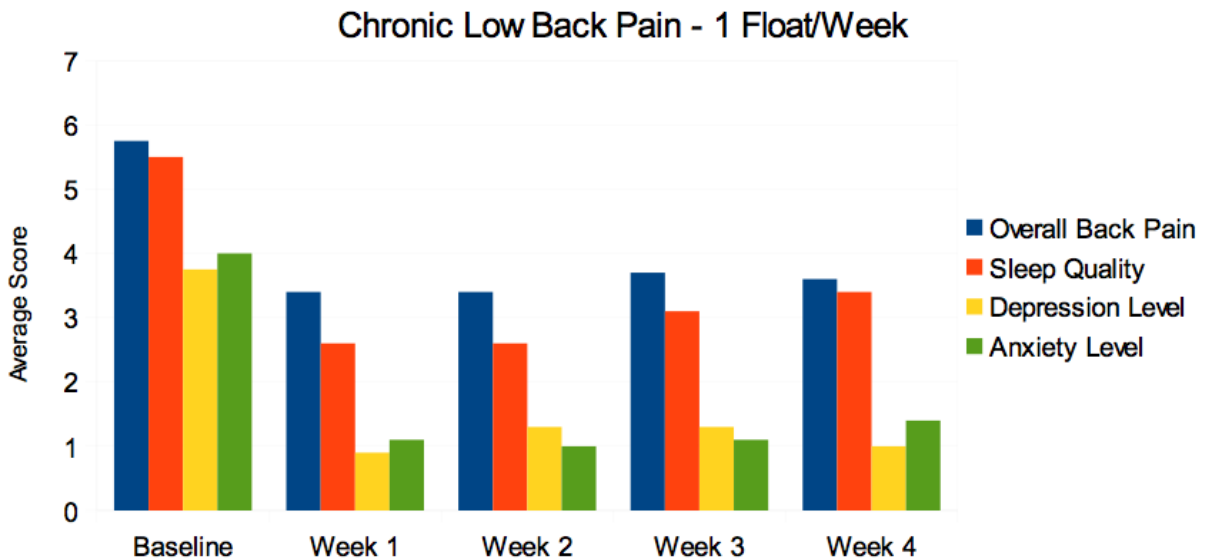
The study lasted four (4) weeks in duration¹ and involved two random groupings of four participants per group. Group A floated once a week for four weeks for a total of 4 floats. Group B floated twice a week for four weeks, for a total of 8 floats. A daily subjective survey was completed by each individual, using a numeric scale on a 0-10 continuum with likert style descriptors. This 30 day survey was initiated on day 1 of the study, regardless of the day of their first float in week 1. For purposes of comparison, a baseline survey with the same questions was completed by the participants prior to their float to initiate the study.

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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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



In summary, both Group A and Group B demonstrated positive improvement in pain intensity, sleep quality, depression and anxiety from beginning to end. Group B that floated twice as frequently as Group A demonstrated significantly greater relative gains in all categories.

These graphical results are based upon the group data from the 4 participants in Group A and 4 participants in Group B. All 8 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, at the end of the study, are considerably lower than the baseline averages at the start of the study, reflecting improvements in all categories for both groups A and B. Yet, while both groups did benefit, their trends distinguish a difference between float frequencies.

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 lower overall baseline scores (less severe) for all categories, with an average baseline pain score of 5.8/10 and a week 4 average score of 3.5/10, reflecting a drop of 2.3 points. This is a 28% improvement.

Group B, the twice per week group, began with an average baseline pain score of 7/10 and a week 4 average score of 3/10, reflecting a reduction of 4 points. This is a 42% improvement.

Comparing Group A to Group B, there is a 14% difference between each group's overall improvement. This 14% represents a 50% greater improvement for Group B, the group that floated twice per week.

Graphically, there is a trend towards immediate improvement in both groups. However, for the one time a week floaters, this trend plateaus after week 1 and no further gains are made, despite overall making improvement compared to the baseline. The twice weekly float group made immediate, sustained and continuous improvements throughout the duration.

Quality of Sleep

Evaluating the intervention of floatation therapy on sleep quality associated with chronic low back pain, both groups had almost identical average baseline scores of 5.5 for Group A and 5.7 for Group B). Both groups showed improvement, but group A ended with a week 4 average score of 3.8, which is a 1.7 point reduction and a 26% improvement. Group B had a week 4 average score of 1.8, which is a 3.9 point reduction and a 68% improvement. This reflects a 42% difference between Group A and B, or a 160% **improvement** of Group B over Group A. Graphically, while both groups demonstrate immediate overall positive improve-

ment from beginning to end, the once weekly group did not sustain their improvements, while the twice weekly floaters show sustained and continuous improvements throughout the duration.

Depression Level

Evaluating the intervention of floatation therapy on depression associated with chronic low back pain, Group A had a much lower baseline depression score of 3.8 vs that of Group B with an average baseline depression score of 5.8. Group A had a week 4 average score of 2.5 which is a 1.3 point reduction and a 34% improvement. Group B had a week 4 average of 1.3 which is a 4.5 point reduction or a 77% overall improvement.

This demonstrates a 43% difference between the two groups, and a 125% improvement of Group B over Group A.

Graphically, while both groups demonstrate immediate improvement and overall positive gains, Group A demonstrates immediate improvement followed by an instability in sustaining improvement. Group B showed immediate, continued and sustained improvement.

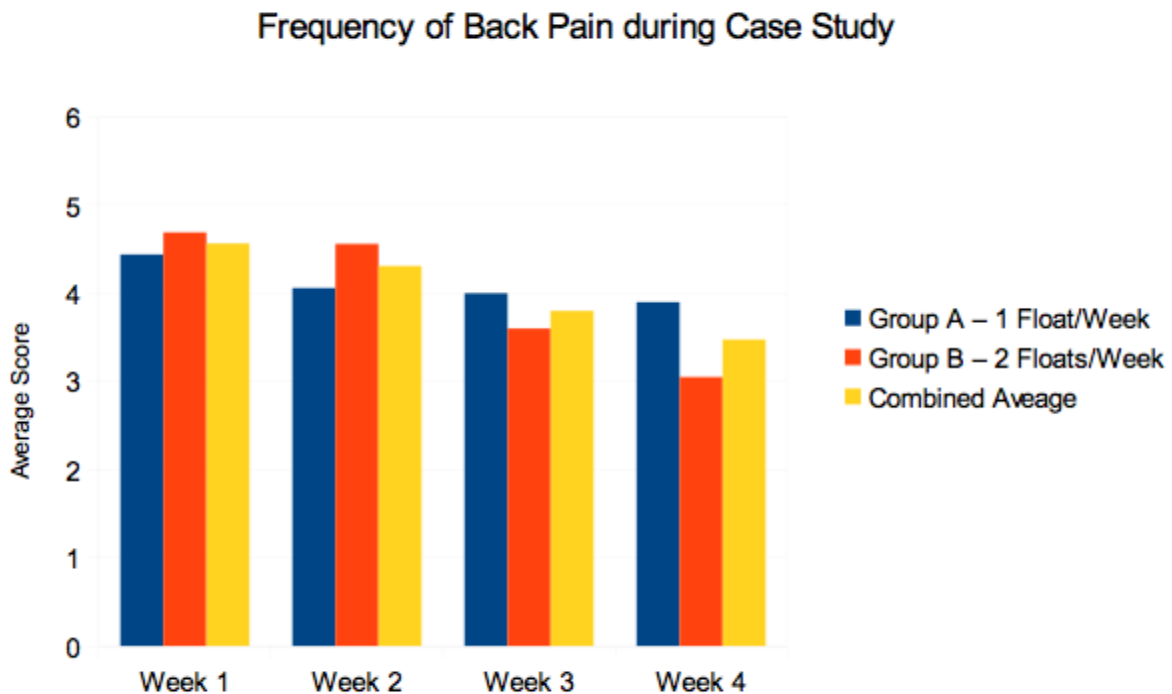
Anxiety Level

Evaluating the intervention of anxiety related to chronic low back pain, there was a greater baseline average of Group B at 5.3 vs, that of 4.0 for Group A. The one float a week group had a ending score of 1.7, which is a 2.3 point drop or a 57% improvement. The two floats per week group had a 4 week average of 2.2, which is a 3.1 point reduction and an improvement of 58%. This is reflective of a 2% difference between the groups. Thus, from an anxiety perspective, there was not a significant difference. However, there is a comment in the discussion section about this finding, related to the point drop difference between Group A and B of almost a full point (.8) which translates into a 35% improvement.

Frequency of pain

Evaluating the effects of the frequency of low back pain is represented here graphically, rather than statistically over the 4 week period. A baseline score for frequency was not originally recorded, so there are no percentage calculations, only a graph with data from weeks 1-4.

The following graph depicts individual and combined averages of low back pain frequency over 4 weeks. The two floats a week group had more frequent /more constant awareness of pain to begin, yet made consistent and more pronounced overall gain. The once weekly group also made overall improvement but less consistent and less dramatic. Both groups together demonstrate a consistent and steady reduction of pain frequency. The graphical comparisons noted here are demonstrative of the overall trend seen within this study.



Conclusion

Floatation therapy, otherwise known as floating, has a direct and positive effect on reducing chronic back 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 back pain.

Discussion

Chronic pain is more than a symptom, but a disease and a major cause of disability. Millions of people are in chronic and persistent pain, which unavoidably involves an emotional component. Both chronic back pain and its emotional 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 scoring system with the same intended interpretation of 0-10 values. Due to the random groupings each category had different baseline starting points, with the twice weekly group rating themselves higher, or more severe of an issue for all categories. As one observation, the more severe the 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. Further, in monitoring the daily and weekly trends, it was apparent that pain and sleep were closely related, and made gradual improvements, whereas the daily and weekly emotional states were more in flux. One participant in group A, the one float per week group, stated via email halfway through the study that “this month has been bad for me on a personal level, my head is not in the game right now and my depression is going nuts. But I can say that the 3 times that I have done a float it has helped my back immensely.” Thus, despite fluctuations in his or any emotional factors, pain levels improved.

This above mentioned individual would be considered an outlier in most studies. His depression and anxiety scores did influence the overall group scores much more than the pain and sleep scores, which maintained steady improvement independent of emotional state towards the end. The net result would be that it would have demonstrated more overall improvement in the twice weekly group due to a higher baseline relative to the 4 week average. This leads to an observation that situational or extreme depression or anxiety may take longer for sustained or stabilized improvement.

Obviously, there was a small sample size in this study. All group aggregate averages would likely see a trend towards less drastic differences between groups and be able to exclude outliers and data at both ends of the spectrum that skews averages. For instance, one individual had a severe sleep disturbance in the 1x/week group that bumped up the

overall sleep average for the 1x/week group but was corrected in the overall average. A larger study size would minimize these types of issues.

While improvements were calculated by using the baseline average compared to the week 4 average, another way to view improvement is to look at the amount of points that dropped from baseline to week 4. This is particularly related to the anxiety category, where there was a negligible difference between Group A and B with regard to percent improvement (57%/58% respectively), yet there was a greater difference in points dropped (going from a 5.3 to a 2.2 is a more pronounced improvement than going from a 4 to a 1.7, but mathematically, their relative percent of improvement is the same.

While a daily monitoring of pain and emotional state cannot approximate the scope, detail, cause, effect and collateral damage of chronic pain syndromes, it does serve to demonstrate a pattern. Daily scoring, while tedious for the participant, provides a lot of data and is helpful with providing more reliable averages and trends.

The subjects in this study all had chronic pain greater than 5 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, 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. Anyone who had difficulty with any of the above, made improvements in them, evidenced both graphically and numerically. There were a few participants who did not start the study with any issues such as radiation of pain, car travel, or standing, whereas all had issues with pain, sleep, depression and anxiety, which were those being tracked.

Lastly, none of the participants floated for 30 days following the study. A 30 day follow-up survey indicated that 6 of 8 participants continued to maintain all of their gains. 2 of the 8 noted negligible maintenance of their progress 30 days later. These are great results for a chronic pain syndrome of greater than 5 years, where none had made any gains even close to these.

Baseline Avg v. Last Week Avg

