Evaluating the efficacy of Jing Advanced Clinical Massage in treating tension-type headaches in adults

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A dissertation submitted in partial fulfilment of the requirements of Jing Advanced Massage Training for the Professional Diploma in Advanced Clinical Massage and Sports Massage

March 2024

Total word count: 3834

"I certify that this work has not been accepted in substance for any degree, and is not concurrently being submitted for any degree other than that of the Diploma in Advanced Clinical Massage and Sports Massage being studied at Jing Advanced Massage Training. I also declare that this work is the result of my own investigations except where otherwise identified by references and that I have not plagiarised the work of others".

Mrs Danielle Weaver: _____

Date:

ACKNOWLEDGEMENTS

I want to thank everyone who supported me, believed in me, and encouraged me in my BTEC journey. Especially my husband, Mark, my daughter, Amelie and my son Ethan for their love, patience, and belief in me.

I'd like to thank my Jing mentor Susan for her attention to detail, encouragement and teaching, and my tutors Rachel and Meghan along with the rest of the teaching team at Jing for the amazing and inspiring course they have created in the profession.

I want to thank my work colleagues for their guidance and support as they have trodden this path before me and of course my fellow BTEC'ers, my new friends for life, for all the laughs, wine, and tears.

“As long as we feel safely held in the hearts and minds of the people who love us, we will climb mountains and cross deserts and stay up all night to finish projects.”

Bessel Van Der Kolk

ABSTRACT

Background: Tension-type headaches (TTH) are a widely prevalent primary headache condition yet are less studied than migraines. The Global Burden of Disease has identified headaches as a significant global public health issue, ranking them as the third most common cause of disability after back pain and depressive disorders. The cause of TTH remains largely unknown and the COVID-19 pandemic has intensified the burden of headaches. The purpose of this study is to evaluate the effects of the Jing Method of advanced clinical massage for the treatment of TTH provided to participants through six weekly hands-on massage treatments.

Method: Seven eligible participants were recruited to take part in this study and online consultations took place to discuss their headache history and management of them. This was a 'hands-on' study with six weeks of control period to obtain baseline figures followed by six weeks of intervention. The Headache Impact Test 6 (HIT-6) questionnaire was used to obtain scores on how headaches impacted their daily lives. During the intervention stage, participants received a weekly 50-minute massage treatment which included grounding hot stones to relax the soft tissue, fascia work, trigger point work, acupressure points, and stretching. No self-care was given. A final HIT-6 questionnaire was sent out at sixteen weeks to gather longer-term data on the effects of the sessions.

Results: From the data received on the HIT-6 questionnaires, participants showed an average reduction of 14.1% in headache disability to their daily lives by the end of the twelve weeks and a 9.4% reduction at week sixteen compared to baseline.

Conclusion: Data from this study shows an improvement can be gained by TTH sufferers from hands-on treatments indicating that the Jing Method of advanced clinical massage is a successful treatment for TTH, with the largest reduction in how headaches affect mood. This study, compared to other tissue-based studies, demonstrated that TTH is best treated with a combination of tissue-based theories and calming of the nervous system. Self-care techniques could also be incorporated into future hands-on studies as this may sustain the impact at four weeks post-intervention.

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INTRODUCTION

Headaches are one of the most common and disabling conditions in the world (Stovner et al., 2022) and Tension Type Headaches (TTH) accounts for around 80% of all headache pain (Vekilyan et al., 2014). They are the cause of more missed workdays than migraines (Scripter, 2018), and yet TTH is the least studied of all headaches (Jenson, 2017).

TTH is also associated with decreased health-related quality of life (Ashina et al., 2021), and further research revealed that the COVID-19 pandemic severely worsened the headache burden, mental health, and quality of life of TTH patients (Fırat et al., 2022).

The purpose of this study is to measure the effect of Jing Advanced Clinical Massage for the treatment of TTH.

Definitions of TTH

TTH and migraines are classed as primary headaches, meaning they are not a symptom of another underlying condition.

Previously known as muscle contraction headaches, stress headaches, or idiopathic headaches, the International Classification of Headache Disorders (ICHD-3, 2021) describes a TTH as a ‘reoccurring headache that lasts from 30 minutes up to 7 days of bilateral location that is described as pressings, tightening, non-pulsating quality of mild to a moderate severity that does not worsen with low-severity exercise’.

TTH is classed as either episodic TTH (ETTH) or chronic TTH (CTTH). ETTH can be infrequent (less than one day a month), or frequent, (no fewer than 10 days a month, lasting

between 1-14 days, for 3 months or more). TTH can last as little as 30 minutes or as long as a week. Nausea and vomiting do not occur.

CTTH usually evolves from long-term ETTH where a person has a headache for 15 days or more per month, over 3 or more months. Overuse of painkillers due to factors such as stress, pain intolerance, and the need to function in daily life (Monteith and Oshinsky, 2009) can result in medication overuse headaches (MOH), ironically causing a headache.

According to the International Classification of Headache Disorders (ICHD-3, 2021), a more recent and significant find is that TTH can occur with or without pericranial tenderness and states that by palpating the frontal, temporal, masseter, pterygoid, sternocleidomastoid, splenius, and trapezius muscles, pericranial tenderness can easily be detected. Aaseth et al. (2014) found that tenderness scores are significantly higher in women than men and that those with CTTH had significantly higher tenderness scores.

TTH and migraines can co-exist and according to the National Headache Foundation (2007), some people with CTTH have a history of migraines that eventually get milder and symptomatic of CTTH.

Infrequent ETTHs are outside the scope of this study.

Causes of TTH

Research on TTH is not yet conclusive enough to identify causes of TTH and the currently available evidence indicates that there may be many causes. Although the exact cause is not understood, there are correlations with dietary, musculoskeletal, environmental, and genetic factors, such as Vitamin B-12 deficiency (Calik et al., 2018) and Vitamin D deficiency (Prakash et al., 2017).

Another possible pathogenesis is myofascial trigger points (TrPs), which Simons, Travell, and Simons (1999) define as “a hyperirritable spot, usually within a taut band of skeletal muscle or in the muscle fascia which is painful on compression and can give rise to characteristic referred pain, motor dysfunction, and autonomic phenomena.”

Both migraine and TTHs commonly exhibit myofascial TrPs in the head and neck muscles associated with referred pain to the head. Do et al. (2018) concluded that it is unknown whether TrPs occur because of the TTH or are the cause of TTH and an earlier study by Alonso-Blanco et al. (2012) stated that TTH is linked to active TrPs in the suboccipital, upper trapezius, sternocleidomastoid, temporalis, superior oblique, and lateral rectus muscles.

Stress could be another factor, considering TTH was previously referred to as a stress headache. Schramm et al. (2015) found that stress is closely linked to an increase in TTH headache days and that stressful events correlate with the frequency of headaches and Cathcart et al. (2010) implies that stress may have a significant impact on the relationship between stress and headache activity by intensifying the already-heightened pain sensitivity experienced.

Genetics may also play a role in the frequency of ETTH and CTTH, however, because genetic inheritance is complex, it is challenging to pinpoint specific genetic markers (Russell, 2007) and environmental factors are more likely to play a role in ETTH over genetic factors, but genetics factors may play a bigger role in CTTH (Ulrich et al., 2004).

Common Treatments for TTH

Treatment for TTH is based on the diagnosis of whether it is ETTH or CTTH, ruling out a medicine overuse headache. Most people tend to self-diagnose ETTH and self-medicate without medical consultation. However, the National Institute for Health and Care Excellence

(NICE, 2022) recommends treating ETTH with a nonsteroidal anti-inflammatory drug (NSAID) and other over-the-counter analgesics. NICE also recommends triggers such as stress, poor posture, neck pain, diet, mood, and sleep disorders be assessed.

CTTH is one of the most challenging types of headaches as it has a complex aetiology of peripheral and central mechanisms that differs between people (Fumal and Schoenen, 2008). It is treated with a combination of preventative drugs, such as amitriptyline or mirtazapine, and physical therapy, relaxation, and stress management techniques. However, Bhoi et al. (2021) stated that this treatment plan remains unsatisfactory for most people with CTTH and suggested that more research is needed.

The Socio-economic Impact of Headaches

The Global Burden of Disease (GBD) recognises headaches as a major global public health concern, placing them as the third most frequent cause of disability, after back pain and depressive disorders. According to Stovner et al. (2018), approximately 3 billion people worldwide experienced a TTH or migraine in 2016: 1.04 billion people had migraines compared to 1.89 billion people who had TTH, although migraines hold a greater disability rate in years lived with disease (YLD). A 2022 review by Stovner et al. verified that headache disorders are still highly prevalent worldwide.

Linde et al. (2011) estimated the financial cost to the EU of headaches in adults between 18-65 years of age at €173 billion, of which migraine accounts for €111 billion (64%), TTH for €21 billion (12%), and MOH €37 billion (21%), with other headaches €3 billion (2%), an immense economic loss for the EU. A new review is needed.

The socioeconomic status (SES) of individuals could also impact the prevalence of headache disorders it was found that individuals with low to medium SES had a higher headache impact, and those with a lower SES with obesity having an even higher impact (Müller et al., 2023). The relationship between chronic pain and lower SES is well documented and related (Bonathan et al., 2013, Booher, 2019 and Prego-Domínguez et al., 2020).

The Evidence for Manual Therapy to Treat Headaches

Many people seek manual therapy, including spinal manipulation, acupuncture, and massage therapy, for headache disorders.

Massage therapy for the neck and shoulders is effective in reducing the frequency and severity of TTH (Quinn et al., 2002), and Davies (2021) recorded a reduction of 21.6% of TTH when delivering the Jing method of advanced clinical massage for online self-care. Fabry (2023) found a reduction of 20.9% when delivering the Jing Method by combining online self-care with hands-on treatments and Clarke (2012) recorded a 57% drop in severity when applying the Jing Method for TTH.

A critical review by Moore et al. (2017) concluded that joint mobilisation & therapeutic massage for TTH is circumspect due to limited data and the studies' shortcomings in methodology. It also emphasises the urgent need for further comprehensive study due to the popularity of non-medical treatment for TTH.

However, it is evident that the complexity of chronic pain means that not one method works for all and there is a need for tissue-based theories of pain to be combined with the biopsychosocial model as there is evidence of peripheral and central sensitization in CTTH (Fernández-de-Las-Peñas and Courtney, 2013 and Nijs et al., 2010).

Fairweather and Mari (2015, p.34) state that "what is going on in the tissues (muscle or ligament damage, inflammation, joint degeneration, trigger points and myofascial adhesions) is only ONE factor that leads to the client's experience of pain", indicating that it is not only biological factors that impact headaches but also psychological and social factors.

The Jing Method and TTH

The Jing Method of Advanced Clinical Massage developed by Fairweather and Mari (2015) is an outcome-based methodology for treating chronic musculoskeletal pain and is based on the mnemonic HFMAST incorporating tried and tested techniques to reduce pain and increase range of motion and research has demonstrated the effectiveness of the elements of HFMAST (see Figure 1).

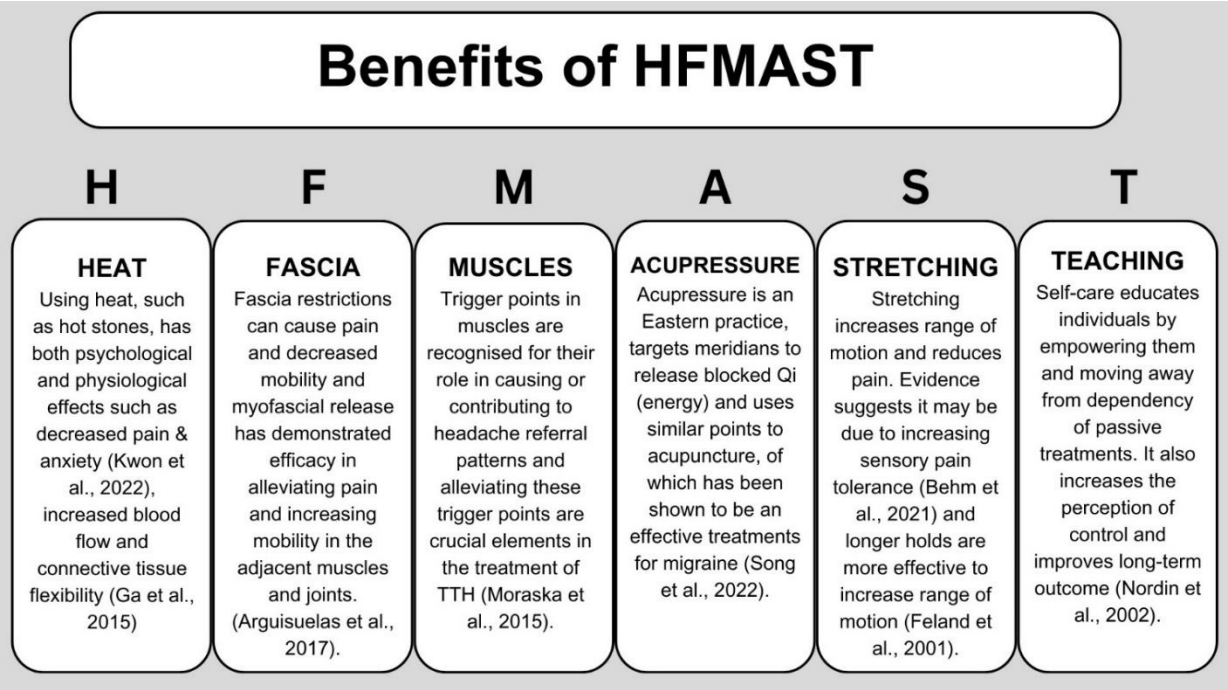

Figure 1. The Jing method using HFMAST.

Chronic pain can worsen with stress, creating a harmful cycle of maladaptive physiological responses as stress triggers a release of hormones that heighten pain sensitivity (Abdallah and Geha, 2017). However, massage alleviates stress, contributing to improvements in anxiety, depression, vitality, general health, and overall well-being (Sharpe et al., 2007). The Jing Method emphasises the importance of thorough history-taking to apply the biopsychosocial (BPS) model of pain when treating pain conditions such as TTH, therefore, rather than interpreting chronic pain as solely mechanical or biological, it considers the psychological and social aspects such as stress, beliefs, fears, and social influences that could impact the individual's pain experience to help turn down the volume of pain.

Due to the COVID-19 pandemic, the methodologies of two prior studies using the Jing Method with TTH were modified. Davies (2021) incorporated online group sessions teaching participants to work on themselves and Fabry (2023) alternated hands-on massage with online group sessions.

This study uses the Jing method of hands-on massage to assess its effectiveness in treating TTH.

METHOD

Ethical approval was obtained from Jing Advanced Massage to conduct this research study in 2023 (Appendix 1).

Recruitment

A total of 9 participants were recruited through a neighbourhood Facebook group, word-of-mouth referrals, and leaflets in the clinic, based on the criteria of having either frequent ETTH or CTTH as classified by the International Classification of Headache Disorders (ICHD-3, 2021) (see Appendix 1 for full inclusion and exclusion criteria). Participants with occasional migraines alongside TTH that fit the criteria were included. Two participants were omitted because they either did not meet the criteria or were unable to commit to the study. The remaining 7 underwent a private Zoom consultation to discuss their health and headache history, symptoms, and headache management**.** All participants were female and had an average age of 44 years, 85% were identified as having CTTH and 29% had co-existing or previous history of migraines.

Instruments

The HIT-6 questionnaire was used to measure the outcome of this study (Appendix 2). It was chosen due to its simplicity for the participants to complete and focuses on three areas: quality of life, the effect of headaches on daily living, and the preceding four weeks. To obtain data, questionnaires were filled out for six weeks without any intervention to form the control period; then once a week from weeks seven to twelve during the intervention period, and once more four weeks after the last massage session to track any longer-term changes.

Treatment format

Six weekly massage treatments of 50 minutes each took place using the HFMAST and Jing Neck and Shoulder protocol (see Appendix 3) which included grounding, breathwork, hot stones and broad and specific work to the muscles of the neck and shoulders. The emphasis of the treatment plan was to treat both local tissue-based pathologies and the calming of the central nervous system.

Hot stones were used to apply heat over the drapes to relax the muscles and calm the nervous system, followed by fascia work such as cross-handed stretches and skin-rolling.

Trigger points are well documented by Travell, Simons, and Simons (1999) for their referral patterns for TTH (see Appendix 4) and were an important part of the treatment plan and the treatments included trigger point work on the trapezius; sternocleidomastoid and sub occipitals.

Three acupressure points were chosen for their treatment of headaches per the Jing method which were GB21, GB20, and LI16, and passive stretches of the neck and shoulders were integrated into every session.

No self-help was given for this study to ensure no compliance issues with self-care.

RESULTS

The overall total impact of headaches gradually decreased, as shown in Figure 1, by 14.1% from the control period compared to the intervention period, and this reduction was maintained at 9.4% four weeks post-intervention at week 16.

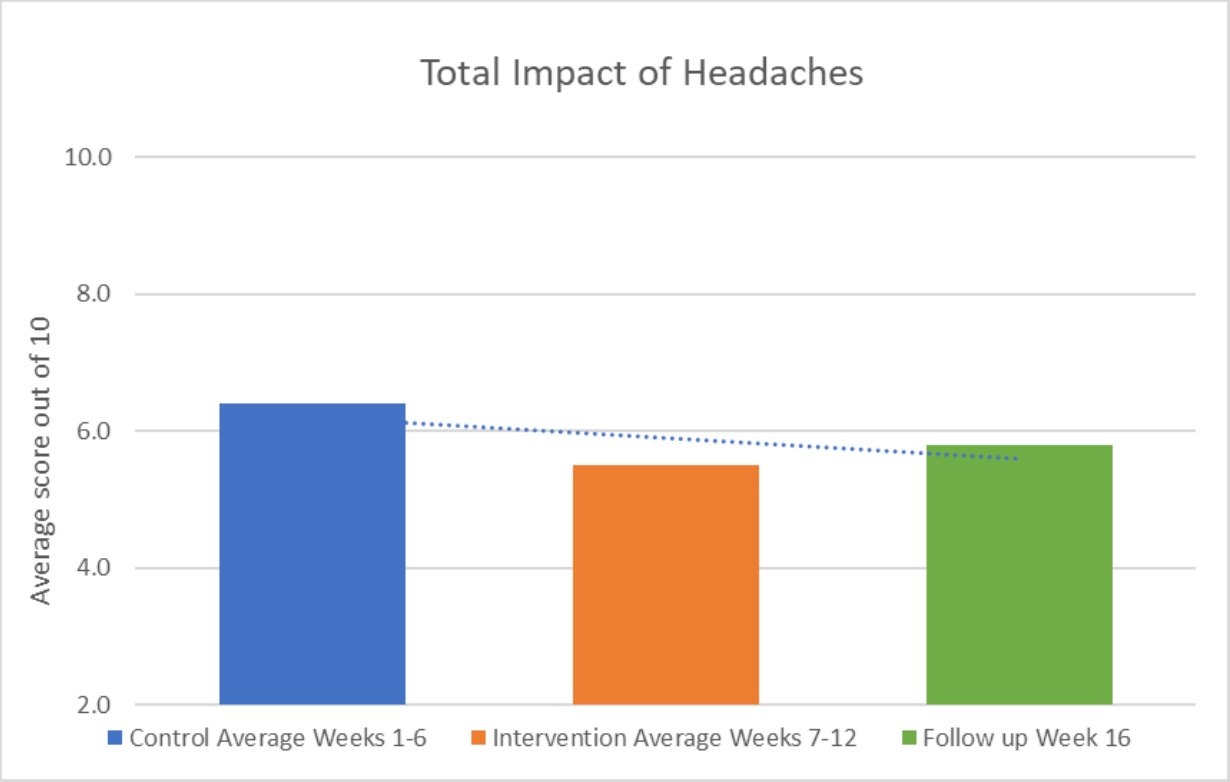

Figure 1: Total impact of headaches

Headache severity decreased by 7.7% at week 12 but then increased by 1.5% at week 16, as shown in Figure 2 below.

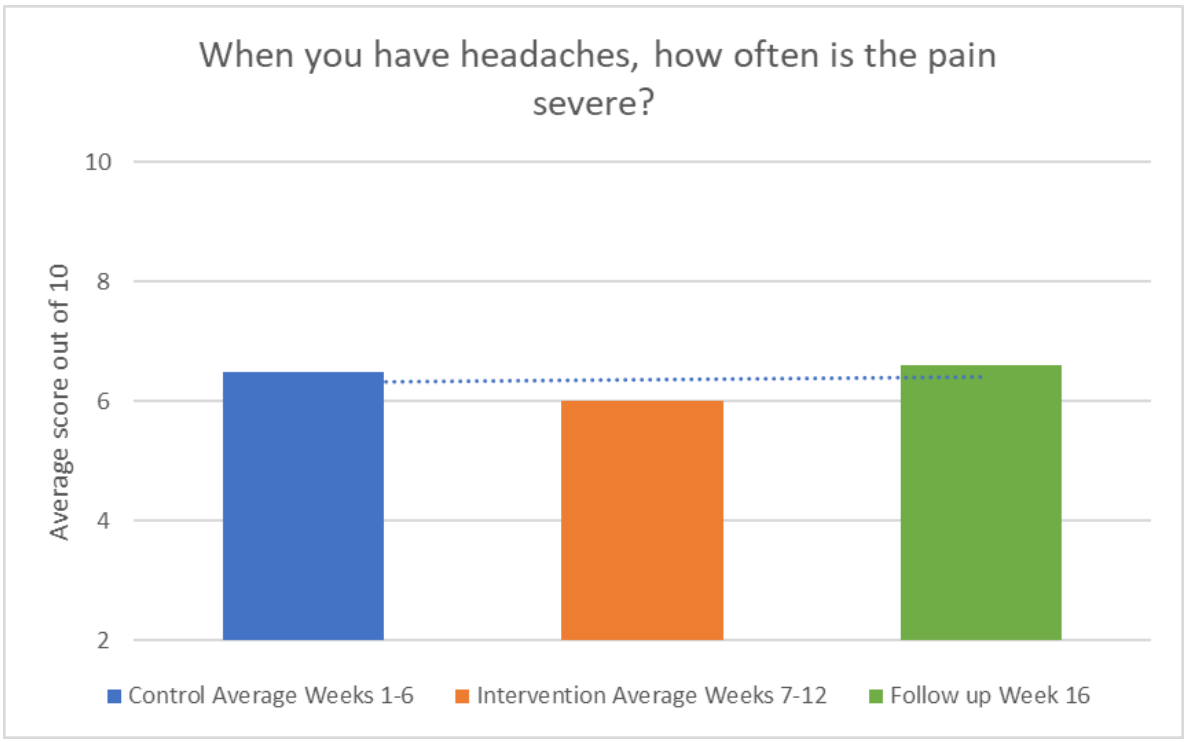

Figure 2. Headache severity

The most significant decrease of 22.2% at week 12 and 20.8% at week 16 from the control period was for how often the participants felt fed up or irritated because of their headaches as shown in Figure 3 below.

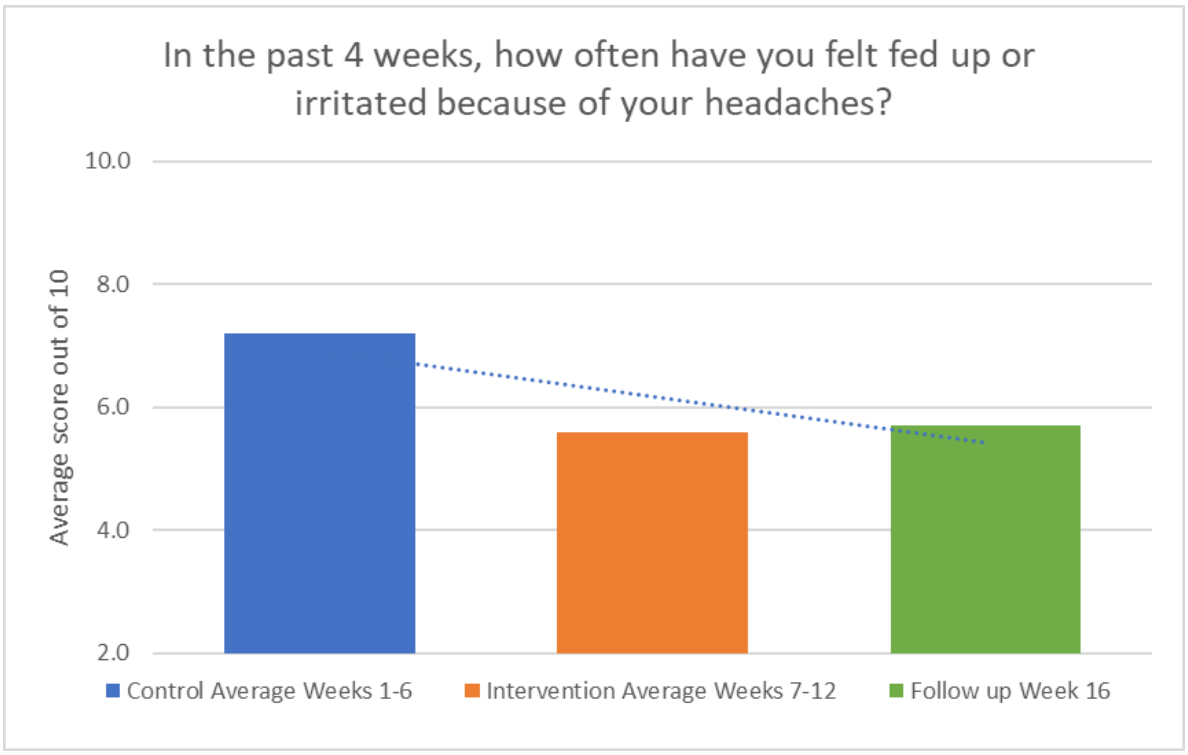

Figure 3. Impact of mood and irritation

The graphs show the average scores using the HIT-6 questionnaire to measure headache severity and quality of life and the participants responses to the questions were scored with a minimum score of 2 and a maximum score of 10 per question (see Appendix 5).

All graphs and raw data table of averages for the full weekly results of the study can be viewed in Appendix 6.

DISCUSSION

This study showed that the Jing method of clinical massage is effective in treating TTH. There was a 14.1% reduction in the total impact of headaches at week 12, and 9.4% at week 16 compared to baseline. The biggest reduction was found in how irritable the participants felt due to their headaches by 22.2% at week 12 and 20.8% at week 16. Headache severity dropped at week 12 by 7.7% but increased by 1.5% above baseline four weeks post intervention at week 16.

This study, and previous studies by Clark (2012), Davies (2021), and Fabry (2023), all used the Jing method for treatment and evaluated the outcomes using the HIT-6, providing comparable data. The results all demonstrated that whether delivering hands-on treatments, online group self-care, or a mix of online group self-care and hands-on treatments, the Jing method of clinical massage was effective in treating TTH.

A choice was made to omit self-care in this study. In retrospect, incorporating self-care may have enhanced the study's outcomes, given that self-care is an integral part of the HFMAST Jing methodology. Results of this study started to decline at week 16 compared to the studies by Davies (2021) and Fabry (2023), who both incorporated self-care in online group sessions. This suggests that HFMAST in its entirety is more effective than in part as the Jing Method emphasises empowerment as one of the primary reasons for self-care; through education, individuals can take control of their own symptoms and actively work towards bettering their health.

Manual therapy approach

The benefit of a hands-on study is that the therapist could apply their expertise of the Jing method, such as the ability to locate and treat specific trigger points based on referral pain patterns, calm the nervous system by using heat and breathwork, and locate specific acupressure points, so the participants could relax and take time out.

This and the study by Clarke (2012) show that the application of the Jing method hands-on treatment exhibited positive effects on TTH, including a reduction in headache severity. This is an improved result than the hands-on massage study by Quinn et al. (2002) who found a reduction in frequency, but severity remained unchanged.

The results of this study showed there was a reduction of 14.1% in the total impact of TTH which contrasts the findings of Kamonseki et al. (2020), who concluded that whilst manual therapy, such as soft tissue interventions and dry needling, reduced the severity and frequency of headaches, it did not affect the impact of TTH.

Trigger Points

All participants exhibited significant pericranial tenderness, as per the criteria outlined in the ICHD-3 (2021), with the most common trigger point (TrP) locations being the sub-occipital muscles, the upper trapezius muscle, and the sternocleidomastoid muscle (see Appendix 4). This corresponded to the findings documented by Simons, Travell, and Simons (1999) and Alonso-Blanco et al. (2012).

Aaseth et al. (2014) found that women with CTTH exhibited higher pericranial tenderness scores. The participants of this study were all women, of which a majority had CTTH. Why women exhibit higher scores is largely unknown, although we do know that chronic pain is

more common in females (Fayaz et al., 2016) and one attributing factor could be stress, aligning with the findings of Cathcart et al., (2010) and Schram et al., (2015), that stress increases the frequency and experience of headache pain.

There was a notable reduction in the tenderness of TrPs from most of the participants by week four of the intervention period which could be attributed to a combination of specifically addressing the most common headache TrPs along with the stress mitigating strategies such as grounding, breathwork, and the application of heat. The Jing method advocates a 6-week programme; hence the study is designed to show the cumulative effect of TrPs.

Chronic pain and the biopsychosocial model

Around 28 million adults in the UK suffer from chronic pain conditions, and advances in neuroimaging have significantly enhanced the understanding of subjective pain to reveal how heavily influenced pain is by beliefs, emotions, and feelings (Morton et al., 2016). The Jing Method integrates tissue-based pain theories with the biopsychosocial (BPS) model to treat TTH, aligning with the theory of Fernández-de-Las-Peñas and Courtney (2013) and Nijs et al. (2010). The BPS model looks for psychosocial factors, often termed "yellow flags," such as attitudes, beliefs, diagnosis, emotions, and social influences that could influence the pain experience. Yellow flags were identified among certain participants in the study, prompting the therapist to adapt techniques such as adjusting pressure when addressing tender TrPs and managing expectations accordingly.

Massage as an intervention for chronic pain has been researched within a healthcare setting and Goreti et al. (2023) concluded that massage for chronic pain should be integrated into healthcare as it establishes communication through touch that increases the feeling in patients

that their pain is seriously considered, thus providing physical and psychological support. However, Da Rocha Rodrigues et al. (2023) agreed, and further noted, that there is still a need to address the perception of massage by healthcare professionals despite its perceived benefits due to an ambivalence around the legitimacy of this intervention. This highlights the importance of shifting healthcare professionals' biases towards massage therapy and promoting its implementation for managing chronic pain and the importance of studies, such as this, to help move away from outdated beliefs.

Evidence also suggests that mindfulness meditation has positive health benefits for chronic pain, making it a viable option for reducing pain severity and mood in primary headaches such as migraine and TTH (Ardebil and Banth., 2015, Gu et al., 2018 and Probyn et al., 2017).

Davies (2021) and Fabry (2023) both incorporated mindfulness practices in their studies which could be a contributing factor to the increased and sustained impact of TTH at weeks 12 and 16 compared to this study.

Therapeutic Alliance

Throughout the six-week intervention period, a strong therapeutic alliance (TA) was able to form between the participant and therapist and it is well documented that TA has a positive effect on reducing chronic pain (Ferreira et al., 2012, Marta et al., 2010 and Monroe, 2009). A positive working alliance has been shown to decrease pain severity and fear in patients with chronic low back (Gillingham, 2017). Kinney et al. (2018) emphasised the importance of understanding factors that influence the TA in both positive and negative ways. According to Fairweather and Mari (2015, p57), it’s the people who get results, not the techniques citing a combination of excellent interpersonal skills, communication, confidence in the therapist’s

knowledge, commitment and consistency to a treatment plan, willingness to form an ally with the therapist, and faith in the therapist, as reasons that indicate a strong TA.

Feedback from the participants of this study reported they felt listened to and relieved that someone was interested in helping their headaches as most of the participants had given up on seeking medical help. Cheatle (2016), who advocates the BPS model for chronic pain, observed that patients have often consulted with numerous healthcare providers and undergone extensive diagnostic assessments, procedures, and physical therapy to find that, frequently, there was no substantial improvement. Thus, further justifying the implementation of the BPS model the importance of a positive TA.

Limitations

Although the HIT-6 is valuable for evaluating factors that contribute to the burden of headaches, it does have limitations. While it provides quantifiable data on the impact of headaches on aspects such as pain, social functioning, role functioning, and psychological distress, it falls short in measuring the number of headaches and the effects on the severity of pain. In fact, Kilminster et al. (2003) agreed that HIT-6 was inadequate in measuring pain severity. Participants of the study reported that they could not accurately reflect the reduction in pain or number of headaches every week with the HIT-6 questionnaire as some participants reported they had felt better but could not successfully record the reduction in frequency or severity. Nonetheless, the HIT-6 is a useful tool for assessing headache-related disability over four weeks and is suitable for healthcare professionals to diagnose primary headaches. It may have been better to use the HIT-6 alongside a pain-scale questionnaire like the study by Clarke (2012).

The study's small sample size was also a limitation as one participant could easily skew the average scores and significantly impact the change recorded, thus highlighting the need for a larger-scale study.

CONCLUSION

This study was conducted to evaluate the efficacy of the Jing method in treating TTH in adults using a hands-on massage therapy approach and based on the results, the Jing method is a promising treatment option for TTH and is consistent with previous Jing research studies Clarke (2012), Davies (2021), Fabry (2023). Specifically, the data collected from the HIT-6 questionnaire showed an average decrease in symptoms by 14.1% compared to the baseline score at the end of the intervention period. There was still a reduction of 9.4% from baseline four weeks after the last intervention, which shows a slight increase post intervention at week 12 and one way to mitigate this in future studies would be to include elements of self-care.

This study emphasises the importance of incorporating tissue-based techniques with the biopsychosocial model of pain when treating TTH as TTH can be or become a chronic condition. All participants had pericranial tenderness in line with the ICHD v3 (2021) and a majority of the participants were classed as having CTTH.

This study, along with other Jing studies, demonstrates encouraging findings regarding the effectiveness of this treatment for TTH, making it a viable option in healthcare and future collaboration with charity organisations, such as the British Association of the Study of Headaches, could help fund larger scale studies.

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APPENDIX 1: ETHICS FORM

	CHECKLIST OF INSTRUCTIONS FOR STUDENTS	
1	Complete Section 1 to Section 13	
2	Electronically sign and date	
3	Participation information form	
4	Participation consent form	

Jing BTEC Research Ethics Form

BTEC Level 6 – Professional Diploma in advanced clinical sports massage

Section 1: to be completed by student

Student's name:	Danielle Weaver
BTEC Year-group:	BTEC 22-24
Date of application:	April 2023
Student email address:	Danielleweaver72@gmail.com
Title of research project:	Evaluating the efficacy of Jing Advanced Clinical Massage in treating tension type headaches in adults.

Section 2:

Does your project involve any primary research using human subjects?

Please delete as appropriate.

	YES	**NO**
Does your project involve any primary research using human subjects?	X	
If yes, does it involve children under 16?		X
If yes, does it involve children under 18?		X
Other vulnerable populations (i.e., mental illness, aged subjects)?		X

Does your project involve NHS patients, NHS staff or Local Authority Service Providers? *If yes, you must obtain 'external ethics approval' for your proposal before the form can be signed-off by 'Jing' and before you can start your fieldwork.*		X
Are you planning to use deception?		X
Are you collecting sensitive personal data such as sexuality, mental health data, etc.?		X
Does your project make use of a validated questionnaire?	HIT-6	
Does your project make use of a new/adapted questionnaire or semi-structured interview checklist?		X

Section 3:

Where is your research being undertaken? At my clinic.		
If your research is being undertaken outside of your own premises, do you have written confirmation from the establishment involved? If yes, please provide evidence.	N/A	

Section 4:

How will you recruit subjects for this research study?

- Clinic email newsletter
- Social Media posts such as Instagram and Facebook
- Leaflets in Clinic
- Word of Mouth referrals
- On website

Section 5:

How will you manage participant confidentiality? Ensure that the information refers to GDPR and is compliant with this legislation.

- All data held in accordance with the General Data Protection Regulation (GDPR) (EU) 2016/679

- Participants names will be replaced by numbers to keep them anonymous.
- The information provided will be for the purpose of the research project only.

- Inform participants on sign up that their data will be kept secure and not shared with a third party.

- All data collected will be password protected and backed up online (google drive)

Section 6:

1. Outline your project procedure.

- Recruit participants via methods outlined in Section 4.
- Hold an initial one-to-one 20-minute consultation online.
- Ensure participants meet the requirements of the study, inform them about the study and ensure they consent to participate. Send out a confirmation letter of what is required from them and dates.
- Send the HIT-6 questionnaire weekly via Google form over a 6-week period prior to any intervention, for completion by participants. The results will provide the baseline level of pain within the group.
- The following 6 weeks, weeks 7-12 of the study, participants will start intervention period of weekly 50min hands on treatments.
- The intervention will be based on Neck and shoulder protocol from Fairweather & Mari (2015) Massage Fusion, will include: Grounding therapist and client using breath, application of heat (hot stones) myofascial release, Trigger point therapy, mobilisation and stretching.
- No self-care will be given for the efficacy and purpose of this study.
- Participants will be required to complete the HIT-6 questionnaire 1 day prior to treatment/intervention. Reminder Email/text will be sent to complete.
- A questionnaire will be completed 7 days after the session on week 12 and 4 weeks after final intervention, week 16.

2. Briefly describe, **what your participants** have to do

E.g. will they be interviewed? Where, for how long? Will they complete a

Questionnaire? Will they receive a treatment intervention? Will they be involved in a group discussion?

- Participants will attend an online one-to-one consultation on Zoom and fill in on online form which will include: -
    a. a consent form.
    b. basic contact details such as name, email and contact number,
    c. a detailed consultation on health history, lifestyle, and headache related questions.
    d. There will be some range of motion testing for the cervical spine.

- Participants will need to disclose what other therapies they are receiving and medication they are taking for the tension type headache and before each hands-on treatment will be asked if they have received any new treatment or medication for their TTH.

- Participants will have the process explained to them, there are no sham interventions, and they will be fully informed of the intent of the research.

- Participants are required to fill in the HIT-6 questionnaire via Google forms once a week on a Monday for 6 weeks with no intervention. This will be the control period.

- Following this for weeks 7-12, participants will receive a 50-minute hands-on treatment of Jing advanced clinical massage.

- Participants are required to fill in a HIT-6 questionnaire every week, 1 day prior to next treatment and 7 days after the final treatment. They will receive an email reminder.

- Final Hit-6 questionnaire will be filled in by participants 4 weeks after last Treatment.

Section 7:

What sort of materials or stimuli will your participants be exposed to?		
	YES	**NO**
Questionnaires	X	
Pictures (will you take a photo of participants)		**X**
Sounds	Relaxing music	
Words	X	
Other	Jing Method Clinical Massage	

If using a questionnaire you are required to attach an example.

For 'Other' please elaborate:

Jing Method Clinical Massage will be using the Jing Neck and Shoulder protocol from Fairweather & Mari (2015) as a sample below: -

Prone work to include: -

Grounding using breath,

Use of heat (hot stones) to palm the erectors and paddy paw the trapezius.

Cross-hand stretch between the shoulder blades.

Direct fascial work on the trapezius and rhomboids.

Skin rolling back of the neck, work the occipital ridge and static compression followed by one directional friction the sub-occipital muscles.

Static pressure and work any trigger points of the transverse processes of the cervical spine.

Precise work to the trapezius and Levator scapulae

Flying nun stretch for the pecs.

Finish with broad work and hot stones

Side lying work to include: -

Trapezius stretch.

Forearm effleurage trapezius and scalenes and then strip the muscles

Soft tissue release to trapezius

Cross fibre friction to the trapezius

Supine work to include: -

Work the cervical lamina groove.

Traction and muscle strip the scalenes.

Treat the cervical transverse processes.

Work the posterior sub occipitals.

Trigger point work of the sternocleidomastoid

Neck stretches to include flexion, lateral flexion and mobilisation.

Fascial work of occipital ridge

Cranial hold to finish.

Acupressure points to include GB21, GB20 & LI16

Section 8:

What sort of people will the subjects be?

Adults over 18, who suffer from tension type headaches (TTH).

Participants should have experienced tension headaches for at least 10 days a month over the last three or more months.

Headaches should last for at least 30 minutes a time and have at least two of the following: -

- Pain in both sides of the head or at the back of head
- Pain in face or neck
- Headache of mild or moderate intensity
- Pressing or tightening around the head (non-pulsating) quality.
- Headaches are not aggravated by physical activity, are not disabling.

Exclusion criteria

- Pregnancy
- Previous whiplash or head/neck trauma
- Migraine type headaches, pulsating pain, moderate to severe pain, pain aggravated by physical activity and have nausea and vomiting.

Section 9:

If your research study involves minors, how will you obtain participation permission and who is the responsible adult?

N/A

Section 10:

Special Issues. Give brief details of other special ethical issues and the controls you will put in place to minimise ethical risk.

- Qualified and insured therapist.
- Ensure participants' details are kept fully confidential and secure.
- During the consultation process and throughout the treatments, the researcher will be observant of participants emotional well-being and direct them to additional resources if necessary.
  Any personal and health information disclosed to the therapist by participants during consultation and one to one treatment are confidential.
- Advise participants to inform the therapist if they feel discomfort/pain during hands on treatments
- Inform participants they can withdraw from this study at any time without giving a reason.

Section 11

What procedures will you follow in order to guarantee the confidentiality of your participants' data?

- Record participants name contact details, DOB
- All personal data will be password protected
- Assign each participant a number
- All data will be deleted as soon as the study has been completed.

Section 12

Does any of the following apply to your research study?	YES	NO
It requires participants to give information of a personal nature	X	
It involves minors or other vulnerable individuals;		X

It involves paying participants or an alternative incentive to participate		X
It could put you or someone else at risk of injury.		X

Section 13:

I understand that I can only start my project, once this ethical application has been approved. This applies to ALL projects, whether using human participants or not.	YES	

Student's handwritten signature:

(To be completed, once ethical approval has been provided)

Print Name: Danielle Weaver

Date:

IMPORTANT

Consent

Informed consent must be obtained for **all** participants before they take part in your project. The Consent Form (example below) should clearly state the parameters and content of the research. It should explain what is expected of the participants and what they will be doing. It should draw specific attention to any elements that could conceivably cause subsequent objections, and the measures you are taking to ensure the confidentiality of their data. It should also state that the participants are free to withdraw from the study at any time. Studies carried out in schools require the permission of the head-teacher, and of any responsible adults as per the head teachers' recommendation. Minors aged over 14 years should also sign an individual consent form themselves. If you are planning to carry out a project whereby you will be in contact with minors, you must establish from the head-teacher or other responsible adult whether the work proposed will require you to have the relevant DBS disclosure. Please seek advice from your Local Authority.

You must complete a consent form for every participant involved in your study.

APPENDIX 2: HIT-6 Questionnaire

HIT-6™ Headache Impact Test

HIT is a tool used to measure the impact headaches have on your ability to function on the job, at school, at home and in social situations. Your score shows you the effect that headaches have on normal daily life and your ability to function. HIT was developed by an international team of headache experts from neurology and primary care medicine in collaboration with the psychometricians who developed the SF-36® health assessment tool. This questionnaire was designed to help you describe and communicate the way you feel and what you cannot do because of headaches.

To complete, please circle one answer for each question.

Q1. When you have headaches, how often is the pain severe?

never rarely sometimes very often always

Q2. How often do headaches limit your ability to do usual daily activities including household work, work, school, or social activities?

never rarely sometimes very often always

Q3. When you have a headache, how often do you wish you could lie down?

never rarely sometimes very often always

Q4. In the past 4 weeks, how often have you felt too tired to do work or daily activities because of your headaches?

never rarely sometimes very often always

Q5. In the past 4 weeks, how often have you felt fed up or irritated because of your headaches?

never rarely sometimes very often always

Q6. In the past 4 weeks, how often did headaches limit your ability to concentrate on work or daily activities?

never rarely sometimes very often always

APPENDIX 3: Intervention protocol for Weeks 7-12

PRONE WORK

Start with grounding and using breath.

Apply hot stones to palm the erectors and paddy paw the trapezius.

Fascia work to cross-hand stretch between the shoulder blades.

Direct fascial work on the trapezius and rhomboids.

Skin rolling back of the neck, work the occipital ridge and static compression followed by one directional friction the sub-occipital muscles.

Static pressure of the transverse processes of the cervical spine and work any trigger points found.

Strip and work any trigger points on the trapezius and levator scapulae

Flying nun stretch for the pecs.

Finish with broad work to trapezius with hot stones.

SIDE LYING WORK (BOTH SIDES)

Stretch the trapezius by holding the front of the shoulder under the top arm and support the back of the head with the other arm to stretch.

Forearm effleurage to the trapezius and scalenes.

Strip and work on any trigger points found in the trapezius and scalene muscles from inferior to superior.

Soft tissue release to trapezius from superior to inferior.

Cross fibre friction to the trapezius using the 'Jing triangle' using thumbs to friction across the trapezius from inferior to superior.

SUPINE WORK

Work the cervical lamina groove from the base of the neck slowly moving inferior to superior.

Gently traction under the occiput and muscle strip the scalenes and work any trigger points found.

Treat the cervical transverse processes with gentle static pressure.

Work the posterior sub occipitals, one side at a time, with static pressure and then cross fibre friction moving medial to lateral.

Trigger point work of the sternocleidomastoid, one side at a time, using pincer grasp from superior to inferior attachment.

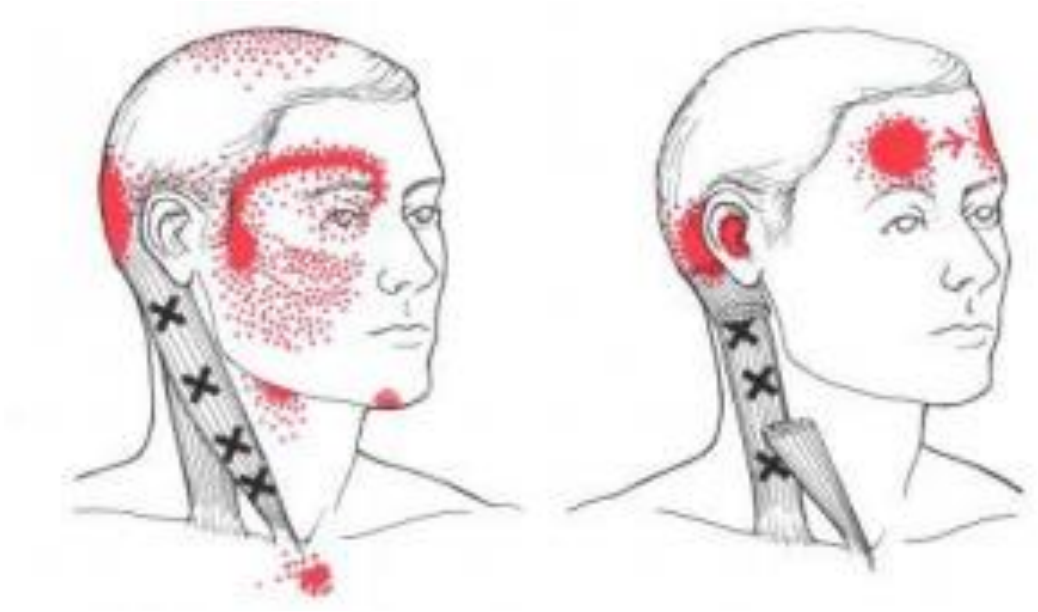
Neck stretches to include flexion, lateral flexion, and cervical mobilisation.

Fascial work of occipital ridge using fingers under ridge allowing fascia to soften, repeat three times.

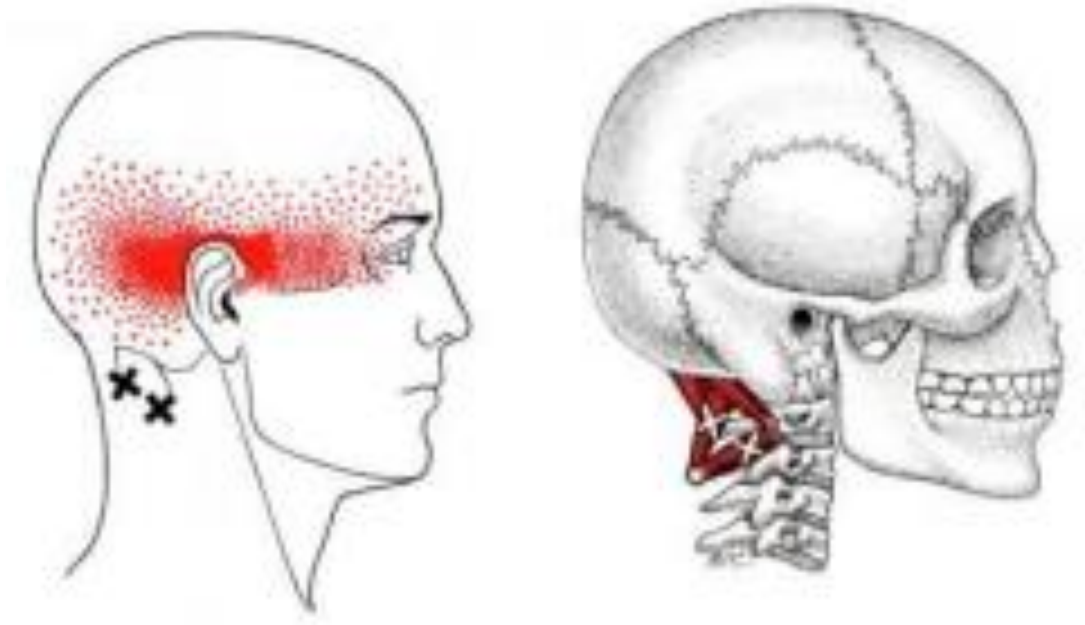
Cranial hold / still work to finish.

Acupressure points applied during treatment to include GB21, GB20 & LI16.

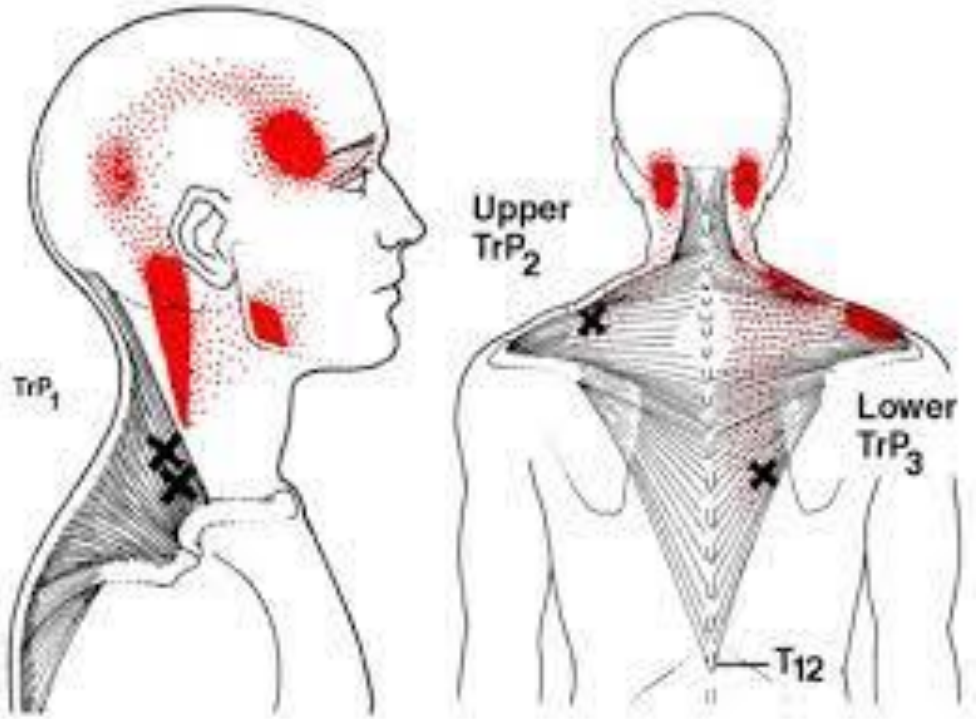
APPENDIX 4: Trigger Point Referral Patterns



Trigger Points and Pain Referral Pattern in the Sternocleidomastoid (triggerpoints.net)



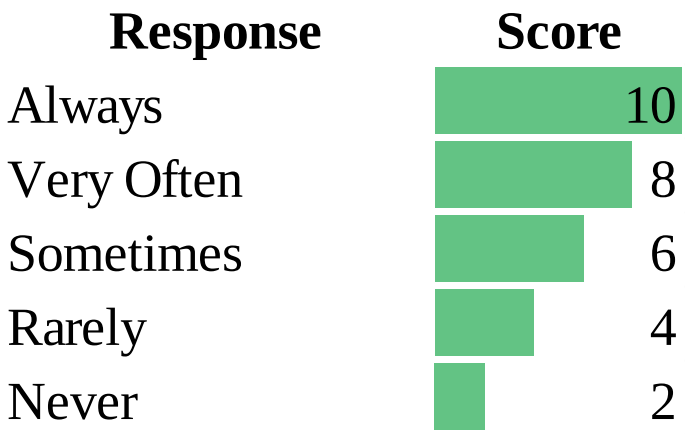
Trigger Points and Pain Referral Pattern in the sub-occipital group (triggerpoints.net)



Trigger Points and Pain Referral Pattern in the Trapezius (triggerpoints.net)

APPENDIX 5: HIT-6 RESPONSE SCORES

Hit-6 Questionaire Scores



APPENDIX 6: RAW DATA AND CHARTS

Average Raw Data

Raw Data								
	Week Number	Q1: When you have headaches, how often is the pain severe?	Q2. How often do headaches limit your ability to do usual daily activities including household work, work, school, or social activities?	Q3. When you have a headache, how often do you wish you could lie down?	Q4: In the past 4 weeks, how often have you felt too tired to do work or daily activities because of your headaches?	Q5. In the past 4 weeks, how often have you felt fed up or irritated because of your headaches?	Q6: In the past 4 weeks, how often did headaches limit your ability to concentrate on work or daily activities?	Average of all questions
Control	1	6.6	6.0	6.3	6.3	8.0	6.0	6.5
	2	6.6	6.0	6.9	5.1	7.1	5.4	6.2
	3	6.6	6.0	7.1	6.0	7.1	6.0	6.5
	4	6.6	6.0	6.9	6.0	6.9	6.0	6.4
	5	6.0	6.0	6.9	6.0	6.9	6.0	6.3
	6	6.9	6.3	6.9	6.0	7.1	5.7	6.5
Intervention	7	6.3	6.0	6.3	5.7	6.3	6.0	6.1
	8	6.3	6.0	6.3	5.1	6.0	5.4	5.9
	9	6.3	5.4	5.7	4.9	5.4	4.9	5.4
	10	5.4	5.1	5.7	4.9	5.4	4.9	5.2
	11	5.7	5.7	5.7	4.6	5.4	4.6	5.3
	12	5.7	5.1	5.4	4.6	5.1	4.9	5.1
Average during Control		6.5	6.0	6.8	5.9	7.2	5.9	6.4
Average during Intervention		6.0	5.6	5.9	5.0	5.6	5.1	5.5
Follow up: Week 16	**16**	6.6	5.4	5.7	5.4	5.7	5.7	5.8
% difference from Control to Intervention		-7.7%	-6.7%	-13.2%	-15.3%	-22.2%	-13.6%	-14.1%
% difference from Control to Week 16		1.5%	-10.0%	-16.2%	-8.5%	-20.8%	-3.4%	-9.4%
% difference from Intervention to Week 16		10.0%	-3.6%	-3.4%	8.0%	1.8%	11.8%	5.5%

Chart 1: HIT-6 Total Impact by week

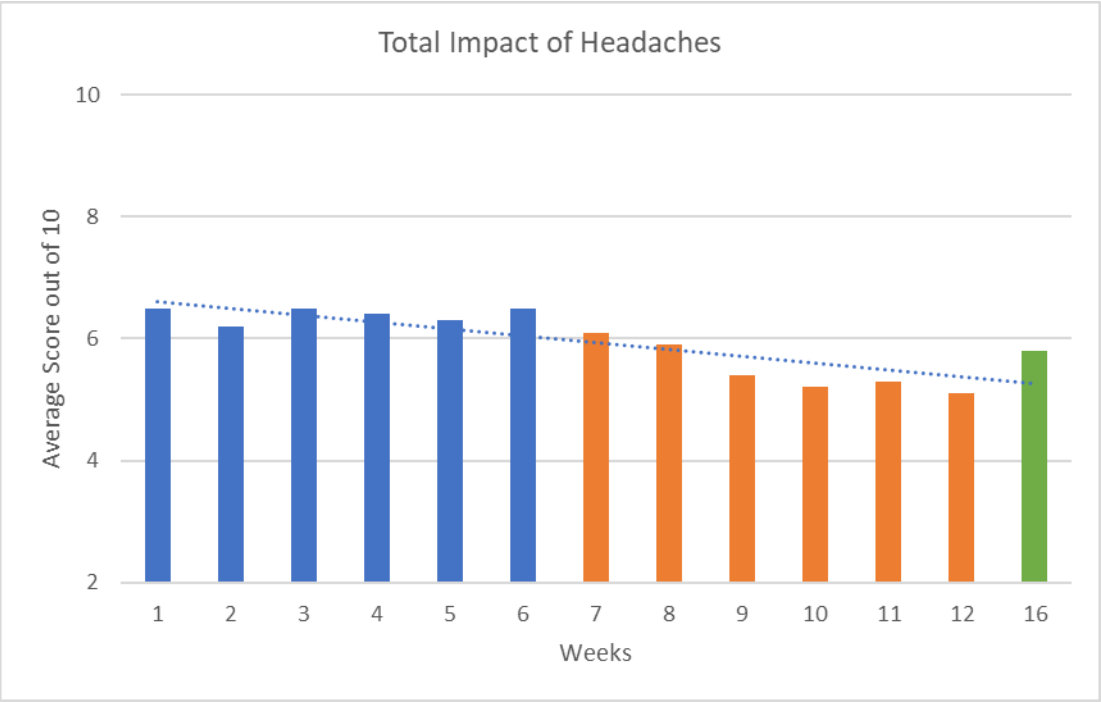


Chart 2: HIT-6 Q1 weekly average

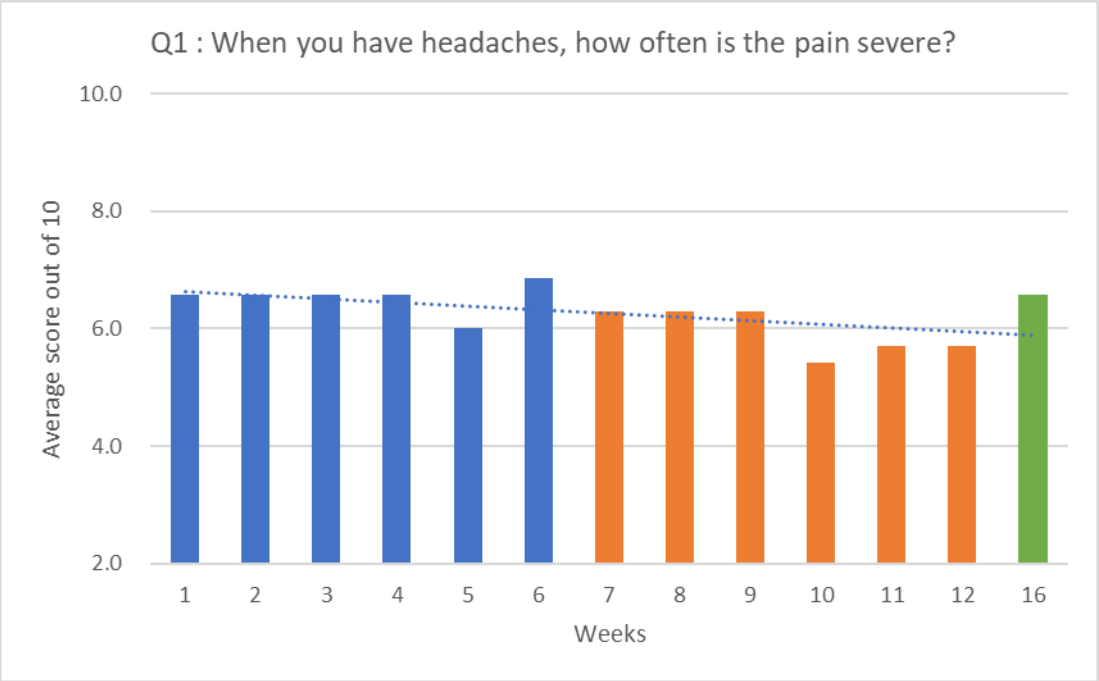


Chart 3: HIT-6 Q2 weekly average

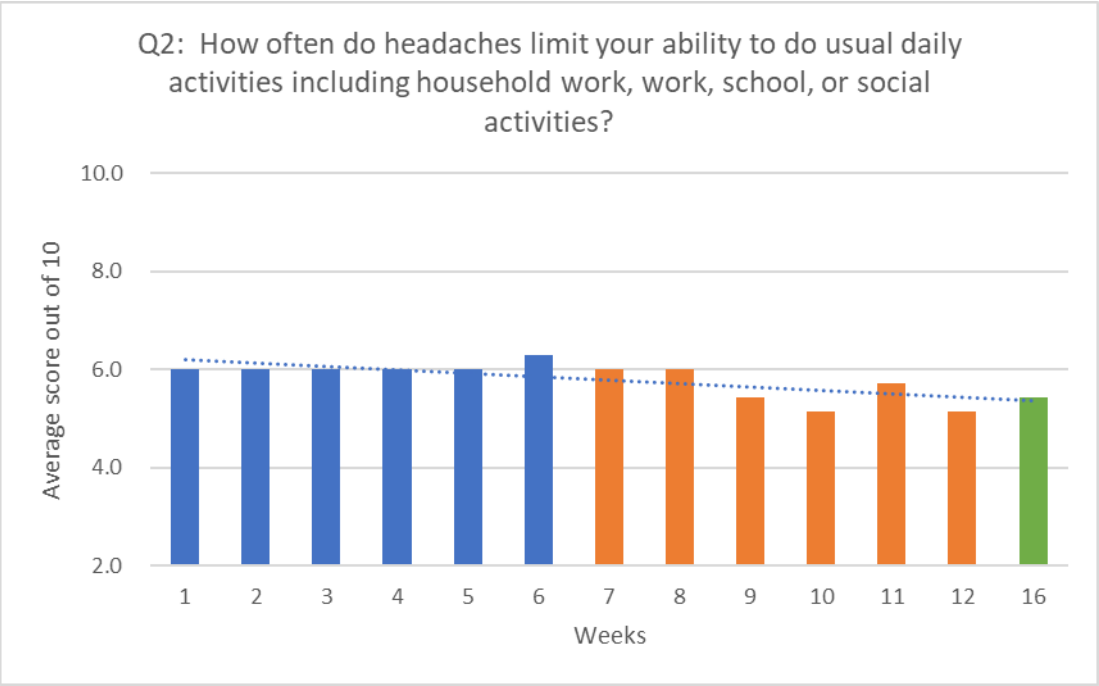


Chart 4: HIT-6 Q3 weekly average

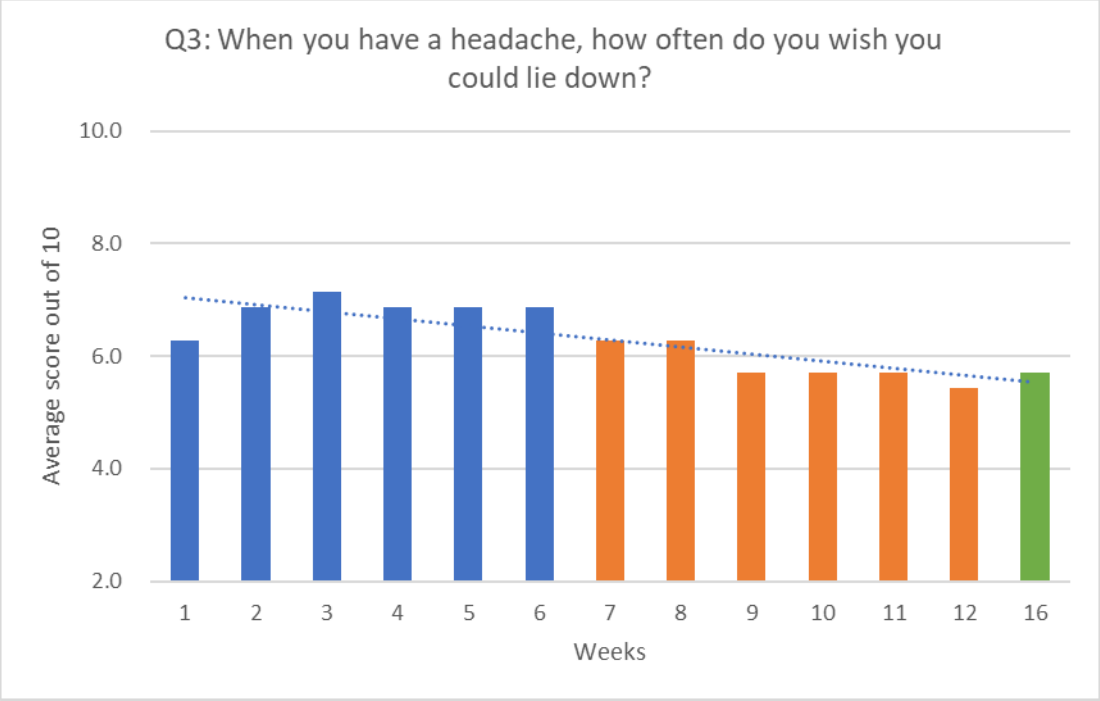


Chart 5: HIT-6 Q4 weekly average

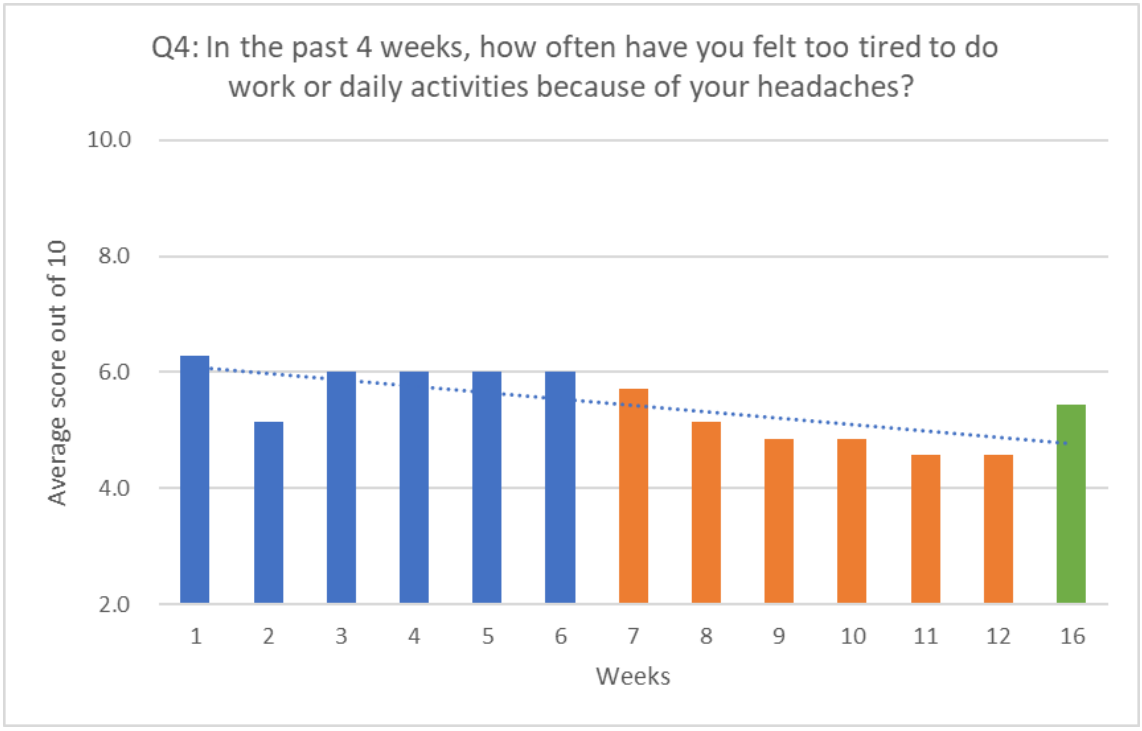


Chart 6: HIT-6 Q5 weekly average

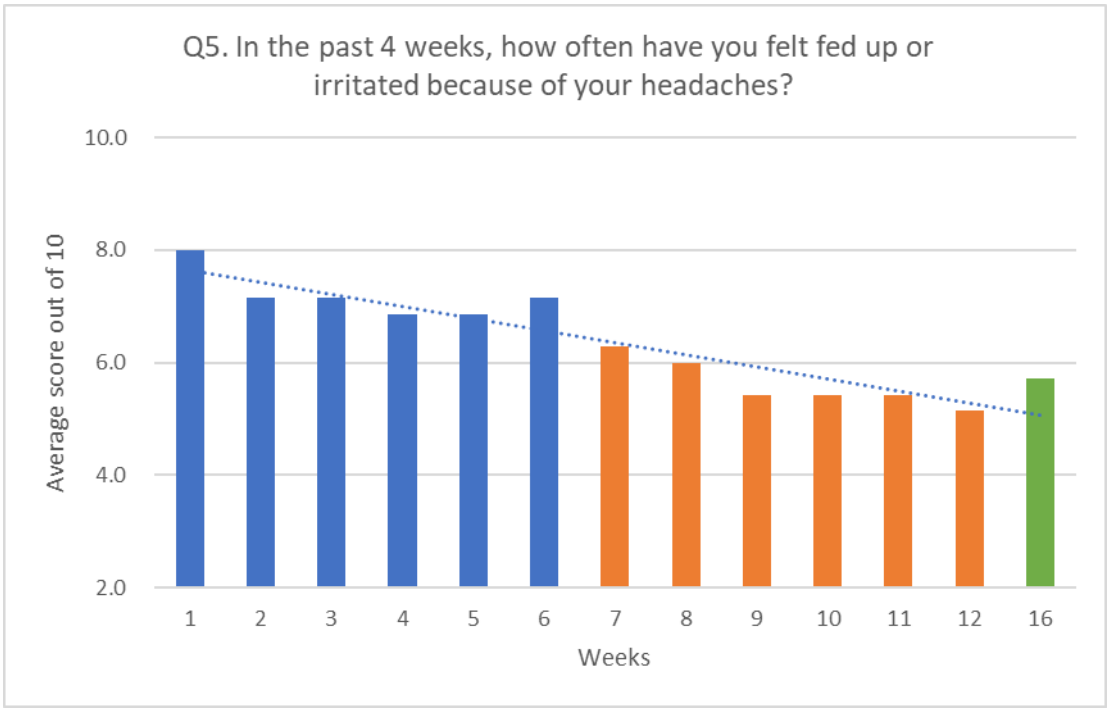
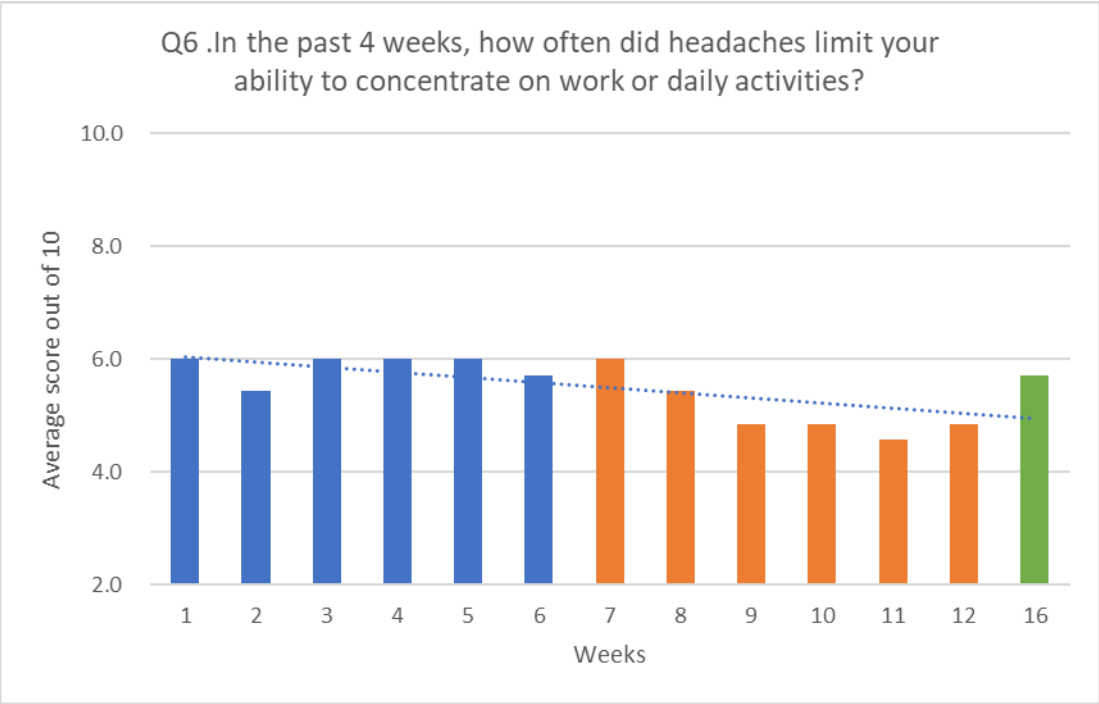


Chart 7: HIT-6 Q6 weekly average



APPENDIX 7: Letter to Participants

JING Advanced Massage Training
28/29 Bond Street Brighton BN11RD
www.jingmassage.com
01273628942

Dear XXX,

Thank you for showing interest in my study. I appreciate you responding to my call for participants. Let me tell you a little more about what it entails.

I have been a massage therapist since 2006 and I specialise in the treatment of chronic pain. In my clinic, I work mostly with individuals suffering with a range of chronic pain such as migraines, frozen shoulder, and fibromyalgia.

In 2021, I embarked on an advanced degree qualification in my field: the BTEC Level 6 in Advanced Clinical and Sports Massage offered by Jing Advanced Massage, the highest level of education a manual therapist can achieve in the UK. It is overseen by experts in the field of Musculoskeletal Pain, Education, Sports Science and Psychology.

As part of our course work, we are given an opportunity to design and carry out a study into the effects of clinical massage wellness programme. I have chosen to investigate tension type headaches in adults.

I am looking for people who are over 18 years old and experience headaches for at least 10 days a month over the last three months or more and have at least two of the following symptoms: -

- pain or pressing/tightening feeling around the sides or back of head,
- pain in the face or neck,
- pain that is of mild or moderate intensity,
- pain that is not aggravated by physical activity.

I am not looking for anyone who is pregnant, had a previous whiplash or head/neck trauma, pulsating or migraine type headaches or moderate to severe pain that is aggravated by physical activity and pain that causes nausea or vomiting.

If you decide to participate the study, it will begin around late July.

The first 6 weeks is about understanding your pain. We will have an initial 20 minute 1to1 zoom meeting where we talk through the study, I will gather your contact info, and I introduce you to the Headache Impact Test (HIT-6) questionnaire.

Then for 6 weeks, every Monday, you will fill in the questionnaire via Google forms. It should take you approximately 5 minutes to complete. I will send you an email prompt to remind you. Once all that data is gathered and we know what we are dealing with, we will then start to endeavour to make a difference.

For the next 6 weeks, you will receive a 50 minute hands on clinical massage treatment per week. Each session will be held on the same weekday and will involve heat, fascial & trigger point work around the neck and shoulders.

During these 6 weeks, you will continue to fill out the questionnaire, the day before treatment. I will continue to send you an email prompt.

Four weeks after the last hands-on treatment you will fill out the questionnaire and I will send you an email prompt.

At the end of the study I will ask that we have a feedback meeting where we discussed what worked for you and what didn't. If the sessions are working for you there will be an opportunity to continue.

Once my research is published, I will share with you my findings and invite you to the conference, where my colleagues and I will be presenting all our findings.

It is very important that you don't engage in another other pain-relieving activity including the use of pain medication, without letting me know.

All your information will be kept confidential. There is no cost for the 6 sessions, however I have set up a just giving page that you may choose to give a donation to my chosen charity, The Lucy Raynor foundation, which is a local charity who provide a range of mental health support services to all, especially young adults.

Please call me with any questions. Please note that you may at any time withdraw from the project without notice or explanation.

Thank you again for considering this project, your participation will make a difference to your pain and the pain of many.

Sincerely,

Danielle Weaver, ACMT MFHT Advanced Clinical Massage Therapist

APPENDIX 8: Consent Form

PARTICIPANT CONSENT FORM

Title of study:

Name of student:

- I have read the information sheet about this study
- I have had an opportunity to ask questions and discuss this study
- I have received satisfactory answers to all my questions
- I have received sufficient information about this study
- I understand that I am / the participant is free to withdraw from this study:
  - At any time (until such date as this will no longer be possible, which I have been told)
  - Without giving a reason for withdrawing
  - That I am free to refuse to answer any question without saying why
  - That the services I am receiving will not be affected whether I participate or not.
- I understand that my research data may be used for a further project in anonymous form, but I am able to opt out of this if I so wish, by ticking here.
- I agree to take part in this study

Signed (participant)	Date
Name in block letters	
Signed (parent / guardian / other) (if under 18)	Date
Name in block letters:	
BTEC students contact details (including telephone number and e-mail address):	

Section 3: Jing 's assessment (to be completed by Jing)

EITHER:
This project is not designed to include fieldwork with human participants. Insofar as secondary data are to be used, I am confident that appropriate procedures are in place for data protection and non-disclosure of any personal or confidential data.

Signature: .....date: .....

OR:
This project is designed to include fieldwork with human participants.
(please circle yes or no)

YES All necessary statutory, legislative or other formal external approvals have been obtained (e.g., permissions, police checks, external research ethics and governance approvals in the case of research involving NHS staff or patients or Local Authority service providers or users).

YES The design of this study ensures that the dignity, welfare and safety of the participants will be ensured and that if children or other vulnerable individuals are involved they will be afforded the necessary protection.

YES I am confident that participants will be given all necessary information before the study, in the consent form, and after the study if necessary.

YES I am confident the participants' confidentiality will be preserved.

YES I consider that any risks involved to the student, the participants, and any third party are minimal.

YES I consider that Departmental approval should be given, since ethical risks have been appropriately addressed in the proposal and I am confident that steps will be taken to minimise any risks.

Signature: .....  **..... date: ...28/6/23.....**

If a second opinion was sought from a research ethics expert, the advisor should also sign this form below:

Advisor's name (please print):

Advisor's signature: ..... date: .....
Once the Jing's signature has been obtained, the student must return the completed form to the Jing Office.