Bowenwork for Migraine Relief: a Case Report

Sandra L. Gustafson, MHS, BSN, RN

Professional Bowenwork Practitioner in private practice in Santa Rosa, CA

Introduction: Migraine is a complex neurological disorder characterized by episodic, neurogenic, cerebrovascular inflammation and hypersensitization of brain tissues and the central nervous system, causing severe pain and debility. Research literature points mostly to pharmaceutical prophylactic and symptomatic treatments, nonpharmaceutical, complementary and alternative medicine (CAM) approaches, acupuncture, massage and bodywork studies, and none has been published on Bowenwork for migraine intervention. This prospective case report describes one migraineur's response to Bowenwork (a soft-tissue bodywork technique) with cessation of migraine, neck pain, and analgesic consumption, and improved wellbeing and activity function.

Methods: The client received 14 Bowenwork sessions over a four-month period using the self-reporting Measure Yourself Medical Outcome Profile version 2 (MYMOP2) to evaluate clinically meaningful changes. Baseline MYMOP2 data were recorded prior to the first and subsequent Bowenwork sessions to track changes in migraine and neck pain occurrences, other symptoms, medication use, functional ability and sense of well-being. Specific Bowenwork procedures were applied in each session to address various symptoms. The client did not receive other migraine treatment during this study.

Participant: A 66-year-old Caucasian female with a history of debilitating migraine since childhood, and severe neck pain and jaw injuries resulting from two motor vehicle accidents (MVAs) sustained as an adult. She had previously sought medical, pharmaceutical and CAM treatments for migraine, neck pain, and right-sided thoracic outlet syndrome (TOS) symptoms, with no satisfactory relief.

Results: The client progressively reported decreased migraine and neck pain until acquiring a respiratory infection with prolonged coughing spells causing symptoms to recur (session 11). Prior to session 12, she experienced an allergic reaction to ingesting an unknown food allergen, requiring three days of prednisone and Benadryl treatment, exacerbating neck pain, but not migraine.

At session 14, her MYMOP2 data showed no migraine, neck pain or medication use, improved activity function, and sense of well-being. Symptoms in her right arm and thumb persisted to a lesser extent.

Conclusion: Bowenwork progressively offered migraine and neck pain relief for one chronic migraineur, with multiple somatic symptoms. Extenuating factors (jaw tension, TOS, respiratory infection, and allergic reaction) added complexity in monitoring progress and selecting appropriate Bowenwork procedures. Further research on Bowenwork's efficacy for migraine treatment on larger populations is needed.

KEY WORDS: neck pain; MMYOP2; bodywork technique; activities of daily living; well-being

INTRODUCTION

Migraine and headaches are common neurological/ neurovascular disorders leading to decreased healthrelated quality of life (HQoL), activities of daily living (ADLs), lost productivity and work/school time, increased pharmaceutical use, and increased cost and burden of care for patients and health care providers. (1,2) Whilst migraine is one of the most common disorders in children and adolescents, (3) the Centers for Disease Control and Prevention (CDC) in a 2009 National Health Interview Survey, (4) reported an estimated 30.2% of females and 26% of males in the US adult population (predominantly Caucasians) experienced migraine or severe headaches lasting more than a day within a three-month period. (4,5) Chronic migraine diagnosis is made when a patient experiences > 15 headache attacks within a month, for at least three months. (6,7) Stokes et al. (7) found that chronic migraineurs in the USA seek greater use of primary and emergency health care services for diagnostic and treatment intervention than episodic migraineurs, and average approximately \$1,036/annum/person in medical care costs, with medications being the biggest cost factor (72%).

Migraines are characterized by severe throbbing headaches, aggravated by movement and often accompanied by nausea, vomiting, visual disturbances, paresthesia in the face and upper extremities, photophobia, phonophobia, and osmophobia (hypersensitivity to smell), which can last for up to 72 hours. (6)

Chronic migraineurs are more likely to have depression, anxiety, and other chronic pain issues, and often need to withdraw to quiet, darkened spaces for many hours, to alleviate symptoms. (4,7) The pathogenesis is elusive and not clearly understood, having multiple precipitating and predisposing factors including cerebrovascular disorders, brain injury, vertebral body/disc degeneration, food sensitivities, hormonal fluctuations, muscular trigger point tension, trauma, and stress. (6,8) Onset is associated with hyperexcitability and neurogenic inflammation in the cortex and brain stem, leading to cortical spreading depression (CSD).⁽⁶⁾ Meningeal blood vessels dilate due to release of vasoactive neuropeptides (substance P, calcitonin gene-related peptide (CGRP), arachidonic acid and prostaglandins) that increase vascular permeability and inflammatory reactivity. (6) A CSD depolarization wave, originating in the occipital cortex, spreads across the cortex depressing neuronal activity in its wake for a few minutes and transiently reduces cerebral blood flow (ischemia). This is followed by clonic dysfunction—rapid contraction and relaxation of the blood vessels surrounding the brain—leading to sensitization of the trigeminal nerve system, and is perceived as pain by nociceptors in cranial blood vessels, meninges, and craniocervical joints. (6)

Conventional medical treatment for migraine includes prophylactic and acute administration of pharmaceuticals such as ergotamines, triptans, opiate and barbiturate analgesics, nonsteroidal anti-inflammatory drugs (NSAIDs) beta-blockers, antidepressants, anticonvulsants and muscle-relaxants, that can potentially lead to unpleasant side-effects, and serious polypharmacy and over-use issues. (2,3,7) Other medical interventions include Botulinum toxin-A injection, occipital nerve-block, transelectrical nerve stimulation (TENS) machine use, and surface electromyography (SEGM) training (a form of biofeedback). (7,8,9) Clients with migraine and headache disorders are increasingly turning to CAM for noninvasive nonpharmacological pain relief and management. (1,10,11) Bodywork modalities most commonly used include chiropractic, massage, osteopathy, Shiatsu, and acupressure. (11)

Literature Review

A literature search yielded a small number of experimental trials using various forms of chiropractic, osteopathy, massage therapy, Shiatsu, acupuncture, acupressure, and craniosacral therapy, but none using Bowenwork for migraine relief. Research on massage and manual therapies for migraine tends to focus on addressing cervicogenic factors, using

various manipulation, massage, and mobilization techniques. (10,12)

The efficacy of Bowenwork for relieving headaches and migraines has been anecdotally reported in newsletters, conference presentations, professional websites, and social media, but no peer-reviewed published studies were found. A literature search on all Bowenwork studies (for various conditions) yielded a small number including one randomized controlled trial, (13) several quasi-experimental, qualitative studies, and case series reports on Bowenwork's efficacy in decreasing pain and lymphedema; and increasing range of motion, ADLs and HRQoL. (14-20) Hansen and Taylor-Pillae, (21) in a systematic review on Bowenwork, concluded that whilst scientific evidence is limited and not well documented, the technique may offer pain relief for conditions such as migraines and frozen shoulder.

Bowenwork

Bowenwork (founded by Thomas Ambrose Bowen [1916–1982] from Geelong, Australia) is an emerging bodywork technique not extensively documented in research studies, despite being increasingly sought after by clients for pain relief, relaxation, and postural support. (22) Bowenwork is a neuromuscular, soft-tissue relaxation technique involving series of gentle 'rolling moves' (characteristic to Bowenwork not typically seen in other modalities) on specific anatomical locations over skin, fascia, muscles, tendons, and ligaments. The moves are postulated to stimulate proprioceptor pathways, spinal arc reflexes, and central-, peripheral- and autonomic-nervous systems, that override and reset dysfunctional soft-tissue tension patterns via proprioceptive-reflex responses. (22) Sets of moves are followed by 2-minute (or longer) hands-off pauses to allow the body to integrate the effects of the work and allow the autonomic nervous system (ANS) to shift from sympathetic dominant (fight/flight) mode to parasympathetic (rest/repair) mode, (23) with clients frequently experiencing deep relaxation during a session. (24-26)

Bowenwork embraces a holistic minimalist, 'less is best' approach. It can be used to address a client's entire symptom picture, including stress reactivity and chronic conditions, not only areas of acute pain or dysfunction. Unlike manual therapies wherein the practitioner directly alters tissue tension or postural realignment by constant massage, manipulation, stimulation or stretching the body for the duration of a session, the Bowenwork practitioner facilitates a state of relaxation within the client's body that induces an intrinsic, restorative process and homeostatic modulation. (23,25,26)

A session consists of sets of moves (procedures) applied to specific areas, interspersed with pauses (2+ minutes), which are thought to increase the relaxation response and allow the neuromuscular system

to integrate effects of Bowenwork moves and reset dysfunctional tension patterns, before further stimulation is applied to other areas on the body. (22,23,25,26) For example, Upper Back procedure involves four moves over the erector spinae, on either side of the spine, approximately at the level of T7 and T8 vertebrae, followed by a pause. Further moves over the rhomboids and levator scapulae are followed by a pause (Fig. 1). Eight moves are applied on the erector spinae muscles on either side of the spine, starting at approximately L4 and ending at T9 vertebrae, followed by a pause (Fig. 2).

Bowenwork is performed with clients lying or seated, wearing loose-fitting garments, and without using oils or lotions. Responses to treatment may manifest during or soon after a session, or a few days later. Clients are given self-care instructions and encouraged to observe changes in posture, gait, ranges of motion (ROM), symptoms, and to follow-up within 5–10 days.⁽²²⁾

This single-person, prospective, observational case report investigates the use of Bowenwork as a therapeutic nonpharmacological intervention to alleviate the frequency and severity of chronic migraines and



FIGURE 1. Bowenwork move being applied to the upper back region.



FIGURE 2. Bowenwork move being applied to the mid-back region.

neck pain for one client. It validates the idea that migraine symptoms often stem from multiple somatic disorders other than intracranial sources alone—in this case, chronic neck, jaw, and back tension.

Consent for treatment was obtained from the client during the course of clinical practice, as was permission to share the information via a published case report (available by request).

METHODS

Client Profile

The client was a 66-year-old Caucasian female, selfemployed life-coach and counselor. When feeling well, she walked several times a week for exercise and performed light household and gardening activities. She presented with a history of debilitating migraine since childhood, recalling the onset at age nine years, including symptoms of severe headache, pain, and vomiting, with unknown trigger factors. At age 48, her condition was further exacerbated when she was rear-ended in a motor vehicle accident (MVA) and sustained a severe neck injury. At age 56, in another MVA, she sustained additional neck injuries and severe damage to her jaw, teeth, and bilateral temporo-mandibular joints.

The client had first experienced Bowenwork from a friend who had commenced training in Bowenwork and was practicing new procedures. The client noticed a transient decrease in the intensity of her migraine symptoms and improved sleep function. Her friend recommended she seek a more experienced Bowenwork practitioner and referred her to the author's office for further treatment.

During the initial consultation with the author, the client reported having previously consulted several physicians (including MD neurologists) and chiropractors who had diagnosed migraine, degenerative cervical vertebrae, intervertebral disc changes, and right-sided thoracic outlet syndrome (TOS) causing numbness and ache in her right arm and thumb. Previous treatments included frequent chiropractic and massage therapies, mostly focused on her head and neck areas. Physicians had prescribed various narcotic and muscle-relaxant medications, which she did not find effective and she disliked their central nervous system (CNS) depressing effects. She had not been treated with steroid medications. When experiencing migraines, she reported self-medicating with 10-12 Ibuprofen 200 mg tablets/day (in divided doses), applying ice packs to her forehead and neck, and lying down in a quiet, darkened space until symptoms abated.

Clinical Findings

At the initial session, the client was not experiencing migraine but reported experiencing severe

migraine episodes, –three to four times a week. Her sleep was disturbed most nights by migraine pain and numbness in her right arm and thumb, leading to daytime fatigue, limited activities, and decreased sense of well-being. Migraine onset was described as pain arising in the right midback area, progressing over her neck, head and into her right eye, with exacerbation of right arm and thumb pain.

The practitioner conducted a visual assessment of the client's range of motion of neck and shoulders (head rotation from side to side, neck flexion and extension; flexion, extension, horizontal abduction, and adduction of each shoulder). Her movements appeared to be within normal ROM, with no reports of pain or discomfort, despite her history of chronic neck pain and TOS. As such, objective pre- and post-ROM assessments were not consistently measured, nor included in the data.

Assessment Measures

Research points to primary care, chiropractic, physical therapy, massage, and CAM practitioners finding significant benefit in using Measure Yourself Medical Outcome Profile version 2 (MYMOP2) (Appendix A). It is a patient-centered tool for measuring perceived changes in symptoms, sense of well-being and ADLs, and improved clinical outcomes and consultations with practitioners. (27-32) In a case report on TOS, Wakefield (31) found that, in addition to collecting physical assessment measures, MYMOP2 enriched data collection by recording patient-centered outcomes for symptoms that were meaningful to the client. Polus et al. (28) found MYMOP2 to be a valid and reliable tool to monitor changes among chiropractic

patients. It is brief and simple, with a high reliability of clients completing each form before consultations. (33) Paterson et al. (34) and Polit and Beck (35) estimated MYMOP2's validity coefficient to be between 0.60 and 0.70 (> 70 is considered ideal). Other studies comparing concurrent validity of MYMOP2 versus assessments commonly used internationally—Migraine Disability Assessment (MIDAS), World Health Organization Disability Assessment Schedule (WHO-DAS II), and Medical Outcome Survey 36-item Short Form Health Survey (SF-36) (36,37)—showed that MYMOP2 yielded data that correlated more accurately to clinical findings. (29,34)

For this study, a simple, practical tool for recording and assessing the client's progress was needed, thus MYMOP2 was chosen. It is a self-reporting, patient-generated tool that captures subjective and qualitative data, rates the client's perceived impact of his/her health condition, and records changes in symptoms, activities, and medications in successive sessions. (27,33) It asks clients to identify two major symptoms (physical or mental) of most concern, daily activity limitations (physical, social or mental), and general feeling of well-being, numerically rated on Likert-type scales. It also asks for the duration of Symptom 1, amount of medication being used, and the importance to the client of reducing medication use. (27)

Baseline MYMOP2 data were recorded prior to the first Bowenwork session, and subsequent sessions, to track changes in migraine and neck pain occurrences, other symptoms, daily activity limitations, general sense of well-being, and medication use (Table 1). In the first consultation, MYMOP2 data (Table 1) were recorded on a scale of 0–6, where 0 expressed "As good as it could be" and 6 expressed "As bad

Table 1. MYMOP2 Data

	Symptom 1 Migraine		Activity Limitations	Well- being	Symptom 3	Symptom 3 Details	Ibuprofen 200 mg tabs/day
Session 1 10/3/13	6	6	5	5			10–12
Session 2 10/10/13	6	5	5	5	5	Rt. arm hand & numbness	10
Session 3 10/23/13	5	5	5	4	3	Bilateral dorsal foot pain	8
Session 4 10/30/13	5	4	4	4	3	Nocturnal foot spasms	4
Session 5 11/6/13	0	2	2	2	2	Rt. posterior thoracic pain	4
Session 6 11/21/13	0	4	2	2	3	Bilateral knee & feet pain; Lt. foot cramps	s 8
Session 7 11/28/13	2	2	2	2	2	Rt. posterior thoracic pain	6
Session 8 12/5/13	0	1	1	1	1	Rt. thumb numbness	4
Session 9 12/12/13	0	1	1	1	1	Rt. thumb numbness; jaw tension	0
Session 10 12/19/13	0	0	3	3	3	Respiratory infection; coughing spells	2
Session 11 1/9/14	2	2	3	3	5	Allergic reaction to food allergen	6
Session 12 1/16/14	0	3	3	3	3	Lower back tension	4
Session 13 1/23/14	0	0	2	2	2	Rt. posterior, thoracic discomfort	0
Session 14 1/30/14	0	0	1	1	2	Jaw & rt. midback tension	0

0 =as good as it could be; 6 =as bad as it could be.

as it could be." Higher scores indicate worse or less desirable outcomes, and lower scores indicate positive improvement.

The client identified Symptom 1 as migraine (rated 6/6) and Symptom 2 as chronic neck pain (rated 6/6). When symptomatic, the client identified activity limitations as not being able to perform housework, gardening, walking her dog, driving her car, and attending social activities (rated 5/6). The client reported not feeling well for much of the week, and had to lie down with ice packs on her neck and head several times until symptoms abated (rated 5/6). The client recorded taking medications for her condition, listing the medication/s and doses per day/week (Ibuprofen 200 mg 10–12/day. She rated the importance of reducing medication use as "very important", and expressed her concern about potential adverse health implications associated with her long-term ingestion of Ibuprofen.

Prior to subsequent Bowenwork sessions, MMYOP2 Follow-up Questionnaire (Appendix B) was completed and the client was interviewed by the practitioner for clarification. MYMOP2 Follow-up Questionnaire asks similar questions, adding an important new symptom (Symptom 3) rated 0–6, and changes made/observed, or events impacting her condition. During the 14 sessions, "Symptom 3" varied and was inconsistent, with pain and discomfort arising in other areas of her body (e.g., bilateral foot pain, jaw pain, lower back pain, thoracic back pain, ache, and numbness in her right arm and thumb). The last question queried medication consumption (yes/no), drug name/s, and doses per day/week.

Whilst MYMOP2 is limited in extracting detailed data, it enabled the researcher to gather data points representing clinical changes in specific subjective symptoms and track the client's progress between Bowenwork sessions.

Practitioner Description

The practitioner (author) works in an integrative health care office as a self-employed, licensed registered nurse, holistic health consultant, and professional Bowenwork practitioner. She holds a Bachelor of Science in Nursing and Master of Health Science degree, and has over 25 years' experience in conventional and integrative health care, with 24 years' practicing Bowenwork as her bodywork specialty. Supporting clients with chronic pain and neurological conditions using integrative approaches has been a major focus of her practice.

Therapeutic Intervention

Migraine symptoms are difficult to observe and assess objectively, and practitioners rely on clients' subjective reports of pain, dysfunction, reduced ADLs, and sense of well-being. Since each migraineur has unique triggers and symptoms, practitioners rely on

tracking subjective reports to evaluate changes and responses to treatment, and cannot prognosticate the number of sessions required to alleviate the condition. A general Bowenwork recommendation is: three sessions, one week apart, then re-assess to determine if further sessions are warranted. The goal for this case was to apply Bowenwork to reduce the client's occurrences of migraine, chronic neck pain, and analgesic consumption, and improve activity function and sense of well-being. The initial predetermined end-point for treatment was based on the practitioner recommending three Bowenwork sessions to determine progress and whether continued treatment was warranted. Based on MYMOP2 data collected in session 3, which showed mild improvement, the client expressed her desire to continue Bowenwork whilst measurable decreases in symptoms and medication use were noted

Sessions were scheduled weekly to bi-weekly, as she reported improvement (Table 1). Since Bowenwork embraces a holistic view of the client's condition, new symptoms were considered important to address, and appropriate procedures were included. Each session lasted approximately 45 minutes to 1 hour, with the client initially lying prone, then supine. Bowenwork procedures—Upper Back, Neck, Upper Respiratory, and Temporo-mandibular Joint (TMJ)were applied with intention to relax the myofascial and nervous systems. Procedures such as TMJ, Sternal, Coccyx, and Trapezius have been anecdotally reported as helpful in addressing migraine symptoms, along with the practitioner's clinical experiences with other headache and migraine clients. According to the client's feedback and symptoms each session, various combinations of Bowenwork procedures were applied (Table 2).

After each session, Bowenwork self-care recommendations were given:

- Maintain adequate fluid consumption to support tissue hydration and metabolic waste elimination;
- Walk daily (if possible) to help integrate the process;
- Avoid prolonged sitting (such as reading a book, or working on a computer) for more than half an hour, to reduce postural triggering of migraine and neck pain; and
- Avoid other bodywork within four to five days before/after a session*

RESULTS

This case report is based on 14 Bowenwork sessions between October 2013 and January 2014

^{*} Application of other bodywork within 4–5 days introduces variable influences that may add complexity in assessing a client's responses to an intervention.

Table 2. Bowenwork Procedures Applied in each Session

Session	Bowenwork Procedures
1	Upper Back, Neck, Upper Respiratory, TMJ
2	Upper Back, Neck, Upper Respiratory, TMJ, Trapezius, Forearm
3	Upper Back, Neck, Upper Respiratory, TMJ, Trapezius, Forearm
4	Lower Back, Upper Back, Neck, Sternal, Upper Respiratory, TMJ, Trapezius, Rt. Thumb
5	Lower Back, Upper Back, Neck, Sternal, Upper Respiratory, TMJ, Trapezius, Rt. Thumb
6	Lower Back, Upper Back, Neck, Sternal, Upper Respiratory, TMJ, Hamstrings, Feet
7	Lower Back, Upper Back, Neck, Sternal, Upper Respiratory, TMJ, Hamstrings, Feet
8	Lower Back, Upper Back, Neck, Sternal, Upper Respiratory, TMJ, Hamstrings, Feet
9	Lower Back, Upper Back, Neck, Coccyx, Upper Respiratory, TMJ
10	Lower Back, Upper Back, Neck, Sternal, Upper Respiratory, TMJ
11	Lower Back, Upper Back, Kidney, Neck, Sternal
12	Lower Back, Upper Back, Rhomboids, Lumbar release, Upper Respiratory, TMJ
13	Lower Back, Upper Back, Rhomboids, Lumbar release, Upper Respiratory, TMJ
14	Lower Back, Upper Back, Rhomboids, Lumbar release, Upper Respiratory, TMJ

(approximately four months) when the client finally reported absence of migraines and neck pain for two consecutive sessions, at which point, data-recording was concluded. MYMOP2 data points, recorded in Table 1 and represented in a clustered bar graph (Fig. 3), provide an overview of the client's progress during this period. The client reported being migraine and neck pain free when she was followed up ten months later, with no new symptoms.

In the first Bowenwork session, procedures were applied and the client was given self-care instructions.

One week later (2nd session), the client reported mild neck pain improvement (5/6), and had experienced four migraines in the previous week with no score change from the initial session (6/6). Her decreased daily activity remained at 5/6, Ibuprofen use had moderately decreased, and ice pack use was unchanged.

By the third session (2 weeks later), she reported mild decreases in migraine and neck pain symptoms and medication use, and improved activities and sense of well-being. The client and practitioner agreed to continue treatment. At the fifth and sixth sessions, the client reported having no migraine in the previous weeks, but neck pain and other symptoms persisted. It was agreed to continue, with the goal to reduce neck pain.

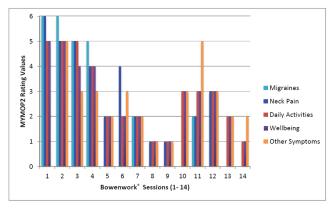


Figure 3. Bar graph summary of MYMOP2 data over 14 Bowenwork sessions.

At session seven, the client reported having had a couple of migraines in the previous week, triggered by physical exertion (e.g., gardening, housework) and prolonged sitting at her computer; however, her neck pain had decreased. At sessions eight and nine, the client reported no migraines, occasional use of ice packs for neck discomfort, and significant reduction in frequency and dosage of Ibuprofen use. At session 10, she reported being migraine and neck pain free in the previous week, despite having had a respiratory infection with severe coughing spells. At session 11, she reported having experienced a severe allergic reaction from ingesting an unidentified food allergen, requiring a three-day course of prednisone and Benadryl treatment, which exacerbated neck pain but did not trigger a migraine (Table 1/Fig. 1).

Neck pain was present at session 12, and the client reported no migraine in the previous week. She chose to return for Bowenwork for sessions 13 and 14 even though the MYMOP2 ratings for migraine, neck pain, and Ibuprofen use scored "0". Transient episodes of jaw tension and right-sided midback tension were still bothering her and she wanted to continue Bowenwork (Table 1).

The client followed the self-care instructions and did not receive other migraine treatment during this study.

No adverse effects from Bowenwork were reported; however, over the four-month period, the client experienced transient "flare-ups" in other areas of her body (lower back, jaw, and right arm); these were not as frequent or intense as in the initial consultation, and were addressed with Bowenwork as they presented. Her feet, lower back, and jaw symptoms improved; however, ache and numbness in her right arm and thumb, aggravated with driving and sleeping, persisted to a lesser extent.

DISCUSSION

Migraine triggers, pathology, and symptoms vary widely, as do clients' responses to bodywork such

as Bowenwork and length of time and number of sessions required to observe improvement. In each session, the researcher depended on the client's subjective MYMOP2 data to determine progress and select appropriate Bowenwork procedures for various symptom presentations. Multiple other somatic symptoms (right arm and thumb numbness and ache, respiratory infection, allergic reaction, and medications) added extenuating factors in determining the end point of the therapeutic goal to reduce migraine and chronic neck pain. Whilst 14 sessions over four months may seem lengthy to achieve the reported results, this client was encouraged to continue by her progress, given her long-suffering condition. She described Bowenwork as deeply relaxing and "lifechanging", enabling her to live migraine and neck pain free and engage in previously limited daily and recreational activities. She was particularly pleased to not be dependent on Ibuprofen anymore. At the time of this case report submission, the client remains migraine and neck-pain free, and underwent successful carpal tunnel surgery for her right thumb symptoms in August 2015.

Case reports support a foundation for evidencebased practice and building resources for further study on a topic. (38,39) This single case report's inherent limitation lies in not being standardizable nor generalizable to larger populations. (39,40) The study highlights how migraine pathology is often multifaceted, involving complex inflammatory and musculoskeletal factors, not always "in the head" nor limited to cervicogenic pathology. Surgical and neuromodulatory interventions are evolving migraine treatments, not without serious risk factors. (41) There is limited current peer-review literature on Bowenwork as a nonpharmaceutical treatment of migraine, highlighting the need for further rigorous research to develop therapeutic interventions for alleviating migraine triggers and symptoms, and improving clients' well-being and productivity, using reliable, valid tools to assess their efficacy.

ACKNOWLEDGMENTS

The author wishes to acknowledge and thank the following people for their support in developing this case report. Firstly, my sincerest gratitude to my client for granting permission to use her case history and data. Special thanks are extended to Dr. Jerrilyn Cambron for inspiring me to enter the 2014 Massage Therapy Foundation Practitioner Case Report contest, after watching her very informative online webinar on Case Reports. Thanks to MTF staff, Gini Ohlson and Christine Daskais, for supporting me with my contest submission and research poster; and, having won the Bronze Award, warm thanks to Drs. Karen Boulanger and Niki Munk for their editorial expertise in guiding me through the publishing process.

CONFLICT OF INTEREST NOTIFICATION

The author declares there are no conflicts of interest.

COPYRIGHT

Published under the <u>CreativeCommons Attribution-NonCommercial-NoDerivs 3.0 License</u>.

REFERENCES

- Hale N, Paauw DS. Diagnosis and treatment of headache in the ambulatory care setting: a review of classic presentations and new considerations in diagnosis and management. *Med Clin North Am.* 2014;98(3):505–527.
- 2. Freitag FG, Lyss H, Nissan GR. Migraine disability, health-care utilization, and expenditures following treatment in a tertiary headache center. *Proc (Bayl Univ Med Cent)*. 2013;26(4):363–367.
- Hershey AD, Powers SW, Coffey CS, Ecklund DD, Chamberlin LA, Korbee LL. Childhood and Adolescent Migraine Prevention (CHAMP) study: a double-blinded, placebo-controlled, comparative effectiveness study of amitriptyline, topiramate, and placebo in the prevention of childhood and adolescent migraine. *Headache*. 2013;53(5):799–816.
- Centers for Disease Control. Prevention QuickStats: Percentage of adults who had migraine or severe headaches, pain in the neck, lower back, or face/jaw, by sex National Health Interview Survey, 2009. MMWR. 2010;59(47):1557.
- Pleis JR, Ward BW, Lucas JW. Summary health statistics for U.S. adults: National Health Interview Survey, 2009 (provisional report). *Vital Health Stat.* 2010;10(249). Available at: http://www.cdc.gov/nchs/data/series/sr_10/sr10_249.pdf Accessed March 15, 2015.
- Benemei S, Fusi C, Trevisan G & Geppetti P. The TRPA1 channel in migraine mechanism and treatment. *Br J Pharm*. 2014;171(10):2552–2567.
- Stokes M, Becker WJ, Lipton RB, Sullivan SD, Wilcox TK, Wells L, et al. Cost of health care among patients with chronic and episodic migraine in Canada and the USA: results from the International Burden of Migraine Study (IBMS). *Headache*. 2011;51(7):1058–1078.
- Donaldson CAS, Rozell CJ, Moran PD, Harlow EN. Multi-modal assessment and treatment of chronic headache: the first in a series of case studies. *Biofeedback*. 2012;40(2):67–74.
- Winner P, Sadowsky CH, Martinez WC, Zuniga JA, Poulette A. Concurrent OnabotulinumtoxinA treatment of cervical dystonia and concomitant migraine. *Headache*. 2012;52(8):1219–1225.
- 10. Chaibi A, Tuchin PJ, Russell MB. Manual therapies for migraine: a systematic review. *J Headache Pain*. 2011;12(2):127–133.
- Dalla Libera D, Colombo B, Pavan G, Comi G. Complementary and alternative medicine (CAM) use in an Italian cohort of pediatric headache patients: the tip of the iceberg. *Neurol Sci*. 2014;35(1 Suppl):145–148.
- Chaibi A. Russell MJ. Manual therapies for cervicogenic headache: a systematic review. *J Headache Pain*. 2012;13(5): 351–359.

- 13. Marr M, Baker J, Lambon N, Perry J. The effects of the Bowen technique on hamstring flexibility over time: a randomised controlled trial. *J Bodyw Mov Ther*. 2011;15(3):281–90.
- 14. Duncan B, McHugh P, Houghton F, Wilson C. Improved motor function with Bowen therapy for rehabilitation in chronic stroke. *J Prim Health Care*. 2011;3(1):53–58.
- 15. Long L, Huntley A, Ernst E. Which complementary and alternative therapies benefit which conditions? A survey of the opinions of 223 professional organizations. *Complement Ther Med.* 2001;9(3):178–85.
- Dicker A. Using Bowen technique in a health service workplace to improve the physical and mental wellbeing of staff. *Aust J Holist Nurs*. 2005;12(2):35–42.
- 17. Dicker A. Bowen technique its use in work-related injuries. *Aust J Holist Nurs*. 2005;12(1):31–34.
- Carter B. Clients' experiences of frozen shoulder and its treatment with Bowen technique. *Complement Ther Nurs Midwif.* 2002;8(4):204–210.
- 19. Hansen C. A Pilot Study on Bowenwork® for Symptom Management of Women Breast Cancer Survivors with Lymphedema [PhD thesis]. Tucson, AZ: University of Arizona; 2012. Available at: http://arizona.openrepository.com/arizona/handle/10150/222852
- 20. Russell JK. Bodywork the art of touch. *Nurse Pract Forum*. 1994 Jun;5(2):85-90.
- Hansen C, Taylor-Piliae RE. What is Bowenwork®? A systematic review. J Alt Complement Med. 2011;17(11):1001–1006.
- 22. Rentsch O, Rentsch E. Bowtech® The Original Bowen Technique: Instruction Manual, Modules 1 & 2. Hamilton, Australia: Bowtech Pty Ltd.; 2013.
- 23. Whitaker JA, Gilliam PP, Seba DB. The Bowen Technique: a gentle hands-on method that affects the autonomic nervous system as measured by heart rate variability and clinical assessment [abstract]. Presented at the American Academy of Environmental Medicine 32nd Annual Conference, La Jolla, California, 1997.
- Olafimihan K, Hall S. Bowen—moving blocked energy. Positive Health Online. 2002;74:51–54. Available at: http://www.positivehealth.com/article/bowen-technique/bowen-moving-blocked-energy
- 25. Mechner V. The Bowen Technique. *Massage Magazine*. 2003;106:11–12.
- Gustafson S. Bowenwork® bodywork without the work. Massage & Bodywork. 2010:54–63.
- Framework for Measuring Impact [website]. Measure Yourself Medical Outcome Profile, version 2 (MYMOP2). Available at: http://www.measuringimpact.org/s4-mymop2. Accessed March 15, 2015
- Polus BI, Kimpton AJ, Walsh MJ. Use of the measure your medical outcome profile (MYMOP2) and W-BQ12 (Well-Being) outcomes measures to evaluate chiropractic treatment: an observational study. *Chiropr Man Therap*. 2011;19:7
- 29. Paterson C. Measuring outcome in a primary care setting: a patient-generated measure, MYMOP, compared to the SF-36 health survey. *Br Med J.* 1996;312:1016–1020.

- 30. Mooney L, Parnell Y. What are the benefits of using MYMOP2 (Measure Yourself Medical Outcome Profile) over ORIDL (Outcome Related to Impact on Daily Living) to track patient progress? [research poster]. Stillorgan, Ireland: Institute of Physical Therapy & Applied Health Science; 2012. Available at: http://physicaltherapyconference.files.wordpress.com/2012/05/ pp-what-are-the-benefits-of-using-mymop2.pdf. Accessed March 15, 2015.
- 31. Wakefield ML. Case Report: The effects of massage therapy on a woman with thoracic outlet syndrome. *Int J Ther Massage Bodywork*. 2014;7(4):7–14.
- 32. Harris P, Atkins RC, Alwyn T. Evaluating a complementary therapies clinic: outcomes and relationships. *Complement Therap Clin Pract*. 2010;16:31–35.
- Centre for Academic Primary Care. MYMOP strengths & weaknesses. Bristol: University of Bristol; [n.d.] Available at: http://www.bris.ac.uk/primaryhealthcare/resources/mymop/strengthsandweaknesses/. Accessed March 15, 2015.
- 34. Paterson C, Langan CE, McKaig GA, Anderson PM, Maclaine GD, Rose LB, et al. Assessing patient outcomes in acute exacerbations of chronic bronchitis: the Measure Your Medical Outcome Profile (MYMOP), Medical Outcomes Study 6-item General Health Survey (MOS-6A) and EuroQoL (EQ-5D). *Qual Life Res.* 2000;9:521–527.
- Polit DF, Beck CT. Essentials of Nursing Research (6th ed).
 Philadelphia, PA: Lippincott, Williams & Wilkins; 2006.
- Leonardi M, Raggi A, Bussone G, D'Amico D. Health-related quality of life, disability and severity of disease in patients with migraine attending to a specialty headache center. *Headache*. 2010;50(10):1576–1586.
- Garin O, Ayuso Mateas JL, Almansa J, Nieto M, Chatterji S, Vilagut G, et al. Validation of the "World Health Organization Disability Assessment Schedule, WHODAS-2" in patients with chronic diseases. *Health Qual Life Outcomes*. 2010;8:51.
- Munk N. Case Reports: A meaningful way for massage practice to inform research and education. *Int J Ther Massage Body*work. 2013:6(3):3–5.
- 39. Munk N, Boulanger K. Adaptation of the CARE Guidelines for Therapeutic Massage and Bodywork Publications: efforts to improve the impact of case reports. *Int J Ther Massage Bodywork*. 2014;7(3):32–40.
- 40. Green BN, Johnson CD. How to write a case report for publication. *J Chiropr Med*. 2006;5(2):72–82.
- 41. Goadsby P, Sprenger T. Current practice and future directions in the prevention and acute management of migraine. *Lancet Neurol.* 2010;9(3):285–298.

Corresponding author: Sandra Leahy Gustafson, MHS, BSN, RN, 95 Montgomery Dr., Suite #90, Santa Rosa, CA 95404, USA

E-mail: bwnwk4lf@sonic.net

APPENDICES

Appendix A. MYMOP2 Intake Fori	Ap	pendix	A. M	YMOP:	2 Intake	Form
--------------------------------	----	--------	------	-------	----------	------

Full name	Date	of birth					
Address and postcode							
Today's date	Pract	itioner se	en				
Choose one or two symptoms (physical or mental) wh Now consider how bad each symptoms is, over the last							
SYMPTOM 1:	0	1	2	3	4	5	6
	As go	ood as it		As ba	nd as it		
SYMPTOM 2:	0	1	2	3	4	5	6
01111 10112		ood as it	2	_	nd as it	3	O
	could			could			
Now choose one activity (physical, social or mental) t difficult or prevents you doing. Score how bad it has				, and th	at you p	roblem	makes
ACTIVITY:	0	1	2	3	4	5	6
		ood as it	_		nd as it	5	Ü
	coulc			could	be		
Lastly, how would you rate your general feeling of we	_				4	-	
	0	1	2	3	4	5	6
	coulc	ood as it		could	d as it		
	courc	1 06		coura	De		
How long have you had Symptom 1, either all time or	on an	d off?					
0-4 weeks $4-12$ weeks 3 months -1 y		1-5 ye	ears	over 5	years		
Are you taking any medication FOR THIS PROBLEM	м?	YES/NO)				
IF YES:							
1. Please write in name of medication and much a	day/w	eek					
2. Is autting down this mediantion:			• • • • • • • • • • • • • • • • • • • •	• • • • • • • • • • • • • • • • • • • •			
2. Is cutting down this medication:Not important A bit important Very important	rtant	Not a	oplicabl	e			
110t important A of important very impo-	ı taiit	1101 a	pricaul				
IF NO:							
Is avoiding medication for this problem:							
Not important A bit important Very important	rtant	Not a	pplicabl	e			

Appendix B. MYMOP2 Follow-up									
Full name	Toda	y's date.							
Please circle the number to show how severe your p This should be YOUR opinion, no-one else's!	roblem	has been	IN TH	IE LAS	ΓWEE	ζ.			
SYMPTOM 1:	0	1	2	3	4	5	6		
	As g	ood as it d be		As b	ad as it				
SYMPTOM 2:	0	1	2	3	4	5	6		
As good as it As bad as it could be									
ACTIVITY:	0	1	2	3	4	5	6		
	As g	ood as it l be		As b	ad as it				
WELLBEING:	0	1	2	3	4	5	6		
How would you rate	As g	ood as it		As b	ad as it				
Your general feeling of wellbeing?	could	d be		coul	d be				
If an important new symptom has appeared please d Otherwise do not use this line.	escribe	it and m	ark hov	w bad it	is below	V.			
SYMPTOM 3:	0	1	2	3	4	5	6		
	As g	ood as it		As b	ad as it				
The treatment you are receiving may not be the only you think is important, such as changes you have may write it here (write overleaf if you need more space)	de your	self, or o	ther th	ings hap	pening	in your	life, please		
Are you taking any medication FOR THIS PROBLE	EM?	YES/N	О						
IF YES: 1. Please write in name of medication and much	a day/v	veek							