A pilot study to evaluate the effectiveness of Bowen Technique in the management of clients with frozen shoulder

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SUMMARY. Objective: To evaluate clients' experience of Bowen Technique in the treatment of frozen shoulder in terms of their pain, functional ability and well-being. Design: A case series that used primarily quantitative methods and qualitative interviews. Participants: Twenty participants with frozen shoulder. Intervention: Bowen Technique, using 'frozen shoulder procedure'. Main outcome measures: Range of active and passive motion (abduction, flexion, extension, medial rotation, lateral rotation and 'wall climb') in both shoulders, pain intensity scores, impact on well-being and health status. Main results: Improvement in shoulder mobility and associated function for all participants. Median 'worst pain' pre-therapy score reduced from 7 (mean 7, range 1–10) to a median 'worst pain' score of 1 (mean 1.45, range 0–5) post-therapy. Fewer pain quality descriptors used by all participants. All participants experienced improvement in their daily activities. Conclusions: Bowen Technique demonstrated an improvement for participants, even those with a very longstanding history of frozen shoulder. Further trials are warranted.

INTRODUCTION

'Frozen shoulder' is often used as a catch-all label for any type of painful and stiff shoulder. Some authors prefer to use the term acute capsulitis. However, this term can often only be truly arrived at as a diagnosis after radiological and other diagnostic investigations.[1] Case definition (precise diagnosis of the cause of shoulder pain) is extremely problematic[2] and this can lead to difficulty in assessing the value of treatments for shoulder pain.[3] Criteria have been proposed for use in the primary care setting relating to the clinical history of worsening painful shoulder, motion loss of at least 1 month's duration and physical examination documenting painful, restricted shoulder motion.[4] Some authors argue that frozen shoulder is a self-limiting condition (albeit with a protracted recovery period)[5] whilst others propose that episodes are not isolated and previous history influences new episodes.[6]

Symptoms often start with vague, generalized pain that may be referred down the forearm, and some limitation of movement. Most people complain of hyperaesthesia and some experience hyperalgesia. As the pain eases the main problem experienced is functional disability.[1] Perceived clinical progression commences with 'a pattern of pain followed by a loss of motion'.[7] A wide range of related disabilities including sleeping and physical functioning problems and psychological symptoms have been reported.[6]

The treatment of frozen shoulder is an area of controversy within orthopaedics[8,9] with a range of treatment modalities being offered to patients including: a mix of physical therapy, exercise;[10] NSAIDs and corticosteroid injections;[11,12] drugs and manipulation under anaesthesia;[13] suprascapular nerve block;[14] hydraulic distension;[15,16] operative management;[17] arthroscopic release;[18] electroacupuncture;[19] and education and stretching.[20] Often clients require

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prolonged treatment almost regardless of the intervention offered. Incidence figures range from 1:50 annually[21] to 7–25 per 1000 GP consultations.[22] Yet despite the incidence of this problem and its impact on clients there are few sound studies evaluating the differing treatment modalities.[23] Most studies have been undertaken on hospital patients even though only a few patients with shoulder pain require referral to a specialist.[6] Studies tend to produce conflicting[24] or inconclusive[22] results, or do not suggest any significant differences between differing treatments.[25] Follow-up periods last from eight months[12] to seven years.[26] However, 12–24 months is the expected period of time during which slow healing and recovery naturally occurs,[24] regardless of the intervention.

Bowen Technique

Bowen Technique is a system of subtle and very precise mobilizations called Bowen moves. These moves are applied, using the fingers and thumbs, over muscles, tendons, nerves and fascia: only gentle, non-invasive pressure is used.[27] A single treatment consists of a series of specific sequences of these moves, called procedures, with frequent pauses to allow time for the body to respond. The goal is to assist the body to restore structural integrity and optimal function.[28] The 'frozen shoulder procedure' has a carefully documented protocol for practitioners to follow, ensuring that each practitioner using a pure technique undertakes the same moves. A Bowen move challenges individual muscles for several seconds by the application of a gentle lateral pressure, exerted by the therapist's thumb, against its medial edge; the muscle fibres and its fascia are disturbed from their neutral position and they are slightly stretched. The therapist applies gentle pressure towards the core of the muscle using the skin slack available, and then rolls the thumb laterally across the muscle. After the thumb rolls over and across the muscle, gently compressing it, the muscle will react by springing back to its original position. The competent Bowen therapist has a keen sense of tissue tension. This enables him/her to feel where stress has built up in the tissues, how much pressure to use and where and when to perform a move to release the build-up of stress. The therapist strives to undertake a minimum of moves and procedures to trigger the body's own self-healing powers. The poorer the health of the patient or the more acute the problem, the less that is done with less pressure during the session, the more profound will be the effect. The anticipated number of treatments for frozen shoulder would be five or fewer.[28]

METHODS

The intention of this study was to evaluate clients' experience of Bowen Technique in the treatment of frozen shoulder in terms of their pain, functional ability and well-being. In this paper the focus is on pain and functional ability with well-being as a secondary measure. The clients' experiences of the technique and their levels of satisfaction are not reported here.

A quantitative case series approach supported by post therapy client interviews was adopted. Baseline medical and demographic data were collected relating to gender, age, occupation and past medical history. Data relating to the key outcome measures of range of movement, pain scores (intensity, duration, periodicity) and impact of pain on well-being were collected. This was achieved through specially developed consultation sheets, self-report pain diaries, self-complete questionnaires and semi-structured interviews with clients at specific stages within their treatment. Thus comprehensive data sets were generated for each participant.

Scoring range of movement

The therapist assessed and scored the participants' range of motion in both shoulders at each visit across a range of six movements. The participants were given a score of either 1–3 or 1–4 as appropriate to each test (1 = least range of motion and 3 or 4 = greatest possible range of motion). The elements scored were abduction (1–3), flexion (1–4), extension (1–3), medial rotation (1–3), lateral rotation (1–3) and 'wall climb' (1–4). The scores represent the extent of motion that the participants could achieve. The non-affected shoulder was therefore used as a 'benchmark' for each individual participant. Thus the possible range for scores was 6–20. Mobility tests were carried out as both passive and active movements. This allowed each individual participant to be scored (active and passive) for both shoulders on initial and subsequent assessments. Thus for each participant a score for the initial difference and the final difference between the non-affected and affected side could be derived. Additionally on a daily basis participants rated, on a 0–10 scale, the average level of restriction to their range of motion they experienced in their affected shoulder.

Scoring pain

Pain was scored at each therapy session and through the completion of a 'Daily Pain Diary'. Participants rated their daily worst, least and average pain intensity on a 0–10 scale (by circling the relevant score). For example:

> Please rate your pain by circling the number that best describes your pain at its ***worst*** today.

In order to capture another element of the pain experience participants were presented, in their Daily Pain Diaries, with a list of 15 pain descriptors derived from the McGill Pain Questionnaire. They were asked to place a tick next to the word if they felt that it applied to their pain. Participants also

rated the level (none, mild, moderate, or severe) to which they felt that their pain interfered with aspects of their activities of daily living including general activity, mood, walking ability, normal work, relations with other people, sleep and enjoyment of life. For example:

> Please tick the box that describes how pain has interfered with your relations with other people.

(This aspect was followed up most closely within the participant interviews and is not reported in depth in this paper.)

The number of therapists involved in the study was restricted to two and their practice was reviewed by a qualified Bowen Instructor to help ensure consistency, standardization and 'purity' of the technique. This review entailed the therapists being observed undertaking the sequence of moves and in providing a rationale for their practice. They were also reviewed by the researcher (who is not a Bowen Therapist) for their accuracy in completing the consultation sheets and accuracy in completing the scoring aspects of the consultation (for example, the range of motion). The study was given ethical approval by the Local Research Ethics Committee. Informed, written consent was gained from each client with the usual safeguards with respect to confidentiality and anonymity being adhered to throughout the study. Clients were included in the study if they met the criteria for frozen shoulder, were over 18 years of age, had no concurrent major mental health problem or had received any other physical treatment modality such as physiotherapy and cortisone injections for three months prior to commencement of the study. The criteria used for frozen shoulder were those proposed as suitable for use within the primary care setting:[4]

1) clinical history of worsening painful shoulder
2) motion loss of at least 1 month's duration
3) physical examination documenting painful, restricted shoulder motion.

The therapists applied these criteria at the first treatment session. It was not a requirement of the study that participants had to have been diagnosed by a medically qualified doctor, although all patients had previously visited their General Practitioner, who had diagnosed their problem as being frozen shoulder.

One set of clients was recruited in NW England through referral via a GP surgery who had established links with their local Bowen Therapist. The second therapist, working in SW Scotland, had intended to recruit through their GP surgery. However, there were no referrals during the time window of the study and ten clients were recruited by local advertisement. None of the clients paid for their treatment. The study was set in the therapist's clinics (one was in a private house and another was in a room in a house from which other therapists worked). Clients attended for treatment sessions and were discharged by the therapist after treatment completion. Treatment completion occurred at the end of five sessions (the maximum number of sessions deemed appropriate for the treatment of frozen shoulder) or before this if there was resolution or substantial resolution of symptoms (such as very minimal pain scores).

Data analysis

Data from the questionnaires, pain diaries, consultation sheets and other documentation were analyzed using descriptive statistics in SPSS for Windows. Analysis of each case was undertaken and then consideration across cases was undertaken using all data sets for each case. Although this study also focused on evaluating clients' perceptions of the therapy, this data is not presented in this article.

RESULTS

Twenty-one clients were recruited to the study. One client was excluded due to a complex history emanating from a severe shoulder injury. Ten participants were male and ten were female. Seventy five percent of the participants were aged over 50 years (see Figure 1). Fourteen participants were right-handed and six were left-handed. Eleven participants were experiencing symptoms in their right shoulder and seven in their left (see Table 1). None of the participants had received Bowen Technique prior to their recruitment to the study although three had previously been seen as a hospital outpatient for physiotherapy treatment. There were no reports of any adverse experiences as a result of Bowen Technique. Six participants visited their therapist five times, six attended for four visits, and eight attended for three visits before discharge. No factors were seen to be associated with either response or lack of response to Bowen Technique. The majority of participants ($n = 13$) had experienced pain for over three months (see Figure 2).

Most participants had experienced reduced range of motion in the affected shoulder for as long as they had had the pain, although some had experienced a slower reduction of range of motion as the shoulder gradually froze. Most participants ($n = 14$) stated that they had moderate restriction, four stated severe and two stated mild restriction to their range of motion. Nobody reported no restriction. It is important to note that all participants had a full range of mobility (as tested) in their non-affected side and thus were all able to attain a full score of 20 for their non-affected side on presentation for therapy. There was a marked improvement in range of motion, with 70% ($n = 14$) of participants experiencing no difference in range of motion between their affected and non-affected side at the end of treatment. The remaining six

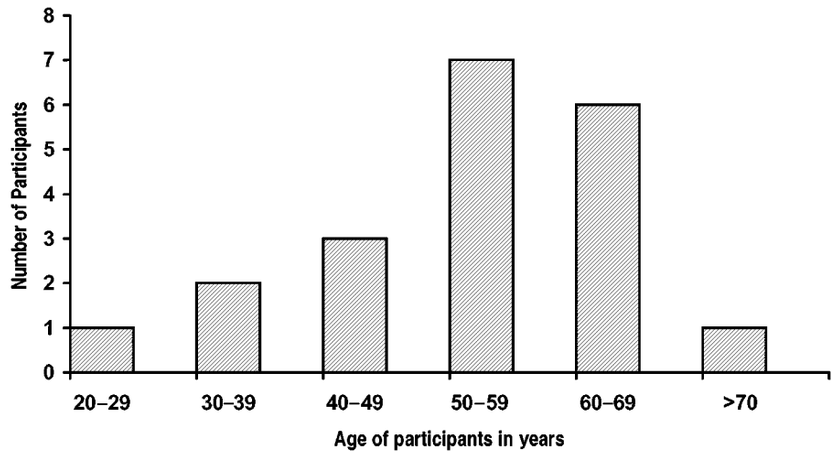

Fig. 1 Age of participants in years.

Table 1 Relation of dominant side to affected shoulder

	Number of participants
Right sided dominant and right shoulder affected	7
Right sided dominant and left shoulder affected	7
Left sided dominant and left shoulder affected	2
Left sided dominant and right shoulder affected	4

participants all demonstrated improvement in their range of motion with the differences reducing down to between 1 and 3. Figure 3 shows the score for each participant for the initial and final difference in range of motion between the non-affected and affected side.

Participants were experiencing a range of symptoms on presentation (see Figure 4). Many were experiencing a constellation of pain-related symptoms: the worse the reported pain, the more symptoms reported by the participants. Eight participants reported their pain to be worst mostly at night, six reported it to be worst mostly during the day and six indicated that it was equally bad during the night and the day. The median worst pre-therapy pain intensity score was 7 (mean 7, range 1–10): only one person reported having a worst pre-therapy pain score of 1. The median least pre-therapy pain intensity score was 3 (mean 2, range 0–6). Thus overall participants were generally experiencing high pain scores pre Bowen Technique. Participants identified the pain descriptors that reflected their pain experience (see Figure 5). The median worst post-therapy pain intensity score was 1 (mean 1.45, range 0–5). The median least post-therapy pain score was 0 (mean 0.8, range 0–3). The use of all descriptors was high pre-therapy and was markedly reduced post-therapy. Participants who continued to score pain were using a very restricted range of generally 'lower' level descriptors such as 'tender' and 'aching'.

The participants perceived the pain from their frozen shoulder as having a fairly major impact

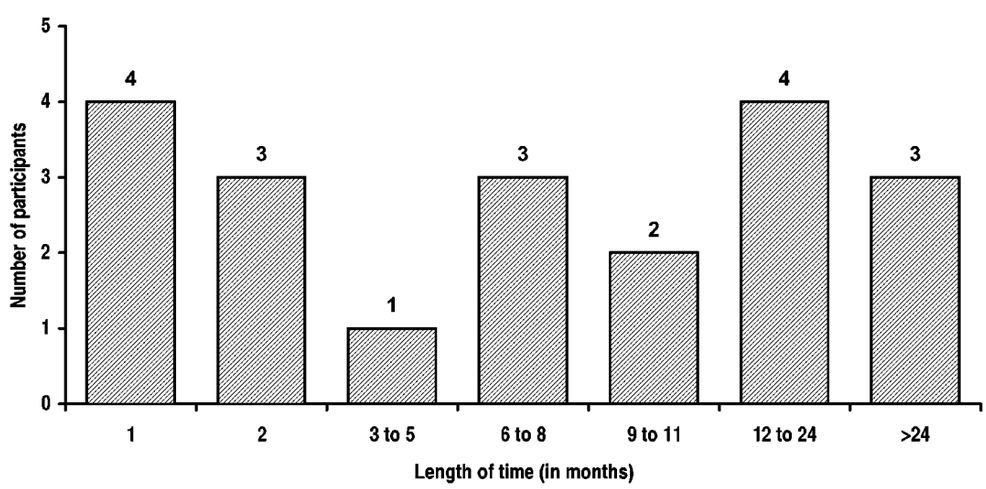

Fig. 2 Length of time (in months) participants had experienced frozen shoulder ($n = 20$).

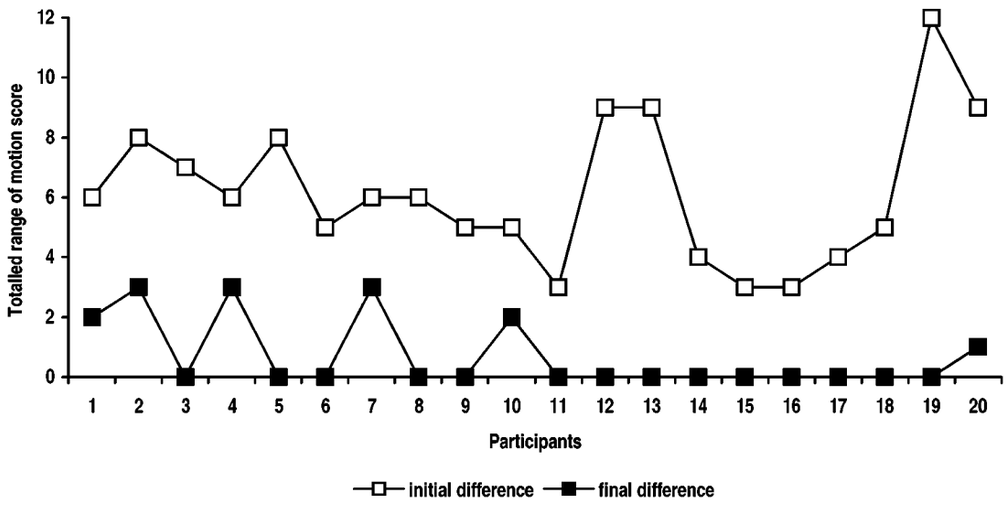

Fig. 3 Differences in range of motion scores between frozen and normal shoulder for each participant, before and after Bowen therapy.

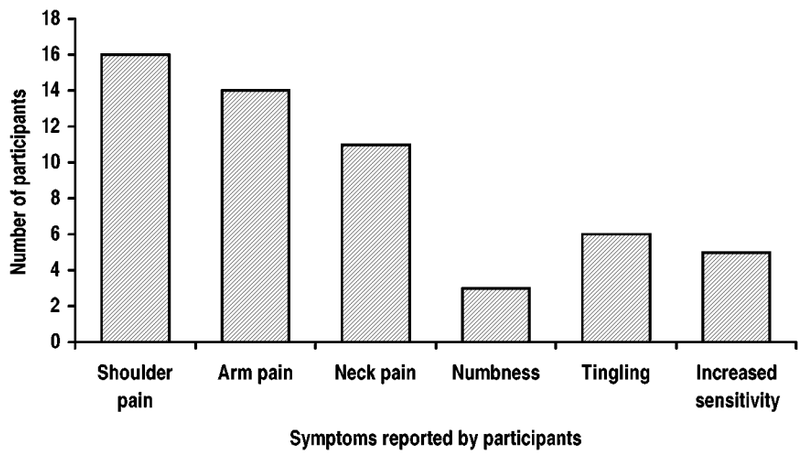

Fig. 4 Symptoms reported by participants prior to therapy ($n = 20$).

on aspects of their daily activities of living. Post-therapy participants had returned to their normal activities of living and usual mood, relationships and enjoyment. None were experiencing severe interference with daily activities (see Figure 6).

It is noteworthy that 40% ($n = 8$) of participants achieved an average final pain score of zero

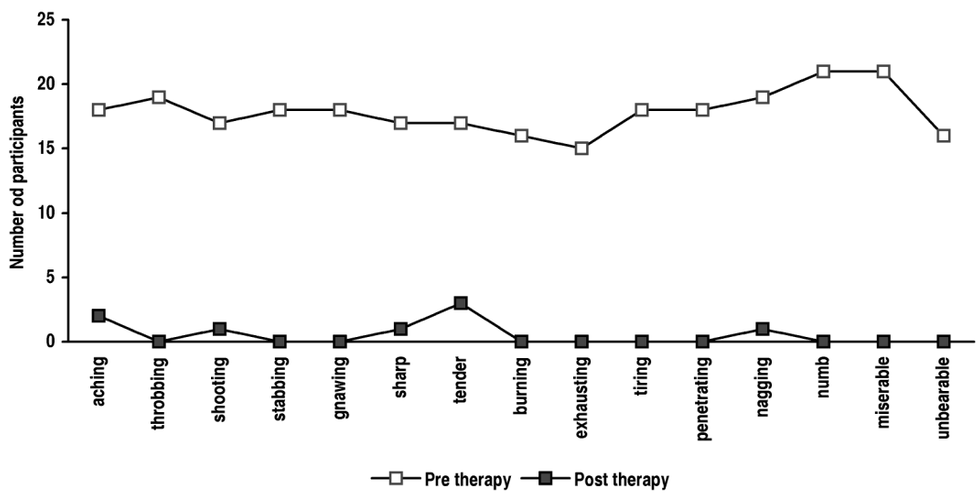

Fig. 5 Pain descriptors used before and after Bowen therapy.

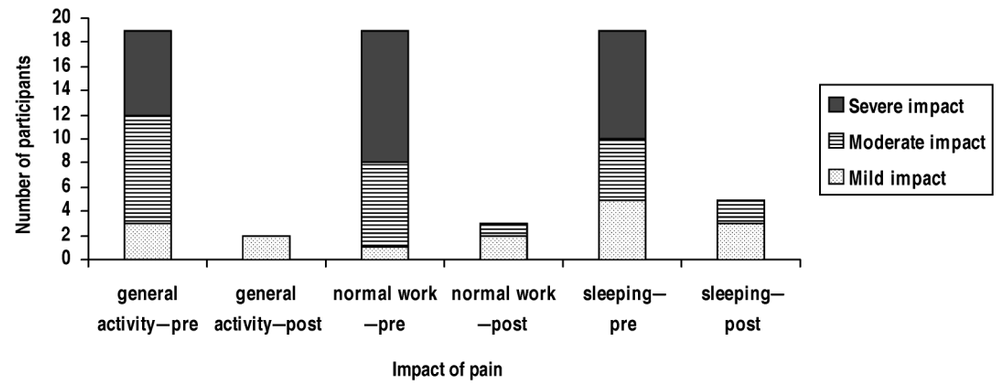

Fig. 6 Impact of pain on participants' general activity, normal work and sleeping.

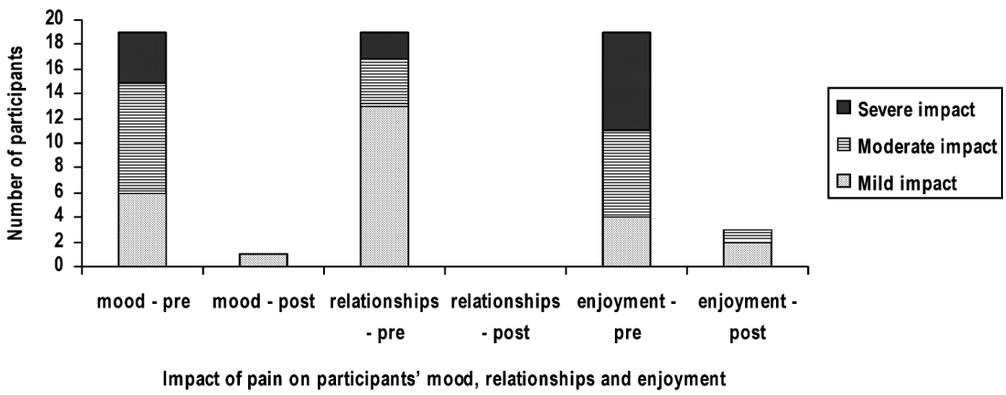

Fig. 7 Impact of pain on participants' mood, relationships and enjoyment.

by the end of their treatment, and a total of 80% ($n = 16$) scored their pain as being between 0 and 2 and described it as a slight ache (often associated with particularly strenuous activity). The difference between the pain scores pre- and posttherapy was marked (see Figure 8).

DISCUSSION

Bowen Technique was successful for the majority of participants and it provided reduction, to a greater or lesser degree, in each individual participant's baseline symptoms. This then impacted

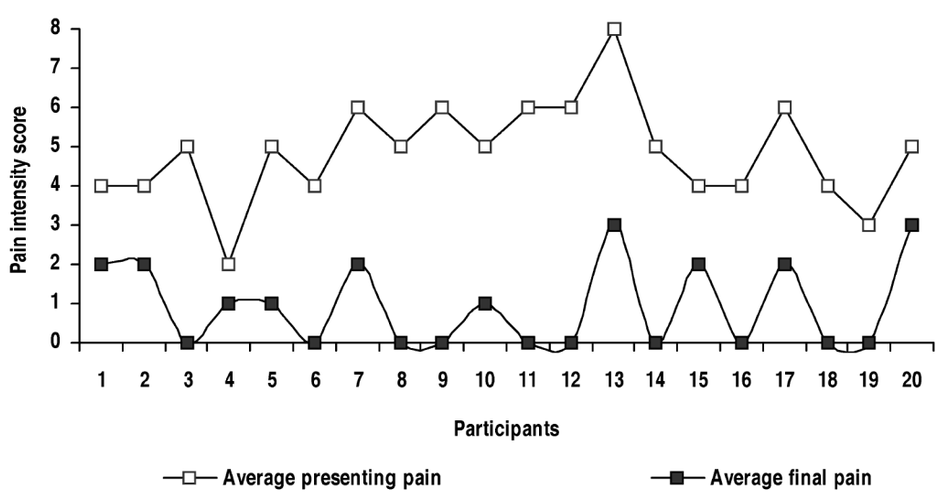

Fig. 8 Average pain scores immediately prior to first Bowen intervention and average pain scores after completion of final Bowen intervention, by participant.

on their ability to engage with their usual daily (social and physical) activities. A key outcome of the study was the improvement, across all participants, in the range of movement (functional ability) in the frozen shoulder with 70% (n = 14) of participants experiencing no difference in mobility between their affected and non-affected side at the end of treatment. This would seem to be a better response than many of the other studies which have utilized a range of more conventional treatments.[6,22,29] The remaining six participants all demonstrated improvement in mobility with a reduced difference between the affected and non-affected side. These six participants all were more functionally able and were able to participate more fully in their usual daily activities. Bowen Technique would seem to have had an impact on the duration and/or intensity of morbidity, and thus reduced the major implications related to morbidity.[30] Pain scores also decreased markedly. Participants were either scoring no pain (a score of zero) or substantially lower pain intensity scores (1–2) by the end of treatment. The range and intensity of pain descriptors used to describe their pain had also reduced substantially with much milder terms, such as 'slight ache' and 'mild pain' being used for those participants scoring pain compared with the original more intense and invasive descriptors chosen. None of the participants reported that their pain was having a severe impact on their daily activities, and there was a decrease in the reports of mild and moderate impact by the end of the treatment. The combination of improved mobility, functional status and decreased pain contributed to a feeling of enhanced well-being as evidenced through the improved scores for the participants' daily activities.

Despite the care that was taken in the design of the study, it is accepted that it is subject to a number of limitations and thus the results should be viewed with some degree of caution. The study was not subject to the same rigours as would be found within the gold-standard of the double-blind, randomized controlled trial. The lack of a control group limited the design. This meant that the therapists themselves were not blinded to the study. This had been discussed in detail in the planning stage of the study but the practical difficulties of including a control group meant that this was not possible in this study although it would be recommended for future studies. Other issues that, despite careful management, may have influenced the results included the fact that two therapists participated, two different locations for treatment were used and there were two routes of recruitment. These could have led to some variability in technique and client expectations, although no differences emerged between the results of the two therapists. The method of scoring the range of motion was potentially open to the subjectivity of the therapists, although a number of safeguards were in place to minimize this. The researcher maintained contact with the therapists throughout the study to check if they were experiencing any problems with scoring clients or using the consultation sheets. The therapists were instructed to err on the side of the worse of two possible scores rather than the better of the two should they have been in any doubt. Whilst the use of an instrument to measure specific angles could have increased the accuracy of measurements, this option was not deemed appropriate due to the cost and the potential for operator error. Despite these limitations, it is believed that the research findings do represent an accurate reflection of the effectiveness of Bowen Technique for these clients.

It is worthwhile noting that no participants withdrew from this study and yet withdrawal from shoulder pain studies is recognized as problematic.[22] In other studies high withdrawal rates (17–59%) have been noted across treatment groups.[29]

Bowen Technique, from this pilot study, demonstrated an improvement for participants, even those with a very longstanding history of frozen shoulder. This is a good result, as other studies have demonstrated poorer results with patients with longstanding frozen shoulder symptoms.[6] For the majority of participants it provided a good outcome, particularly in relation to improved mobility. In terms of the outcome measures used in other studies—success rate, mobility, pain and functional status—Bowen can be seen to be a positive intervention for the clients in this study. Obviously, this small scale uncontrolled study is only a beginning, but from these findings further study is warranted.

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REFERENCES

1. Stam HW. Frozen shoulder: a review of current concepts. Physiotherapy 1994; 80: 588–598.
2. Bamji A. Lack of concordance between rheumatologists may render multicentre studies invalid. British Medical Journal 1998; 316: 1676.
3. Szebenyi B, Dieppe P. Interventions to treat shoulder pain. BMJ 1998; 316: 1676.
4. Pearsall AW, Speer KP. Frozen shoulder syndrome: diagnostic and treatment strategies in the primary care setting. Med Sci Sports Exerc 1998; 30: Suppl S33–39.
5. Reeves B. The natural history of frozen shoulder syndrome. Scand J Rheumatol 1975; 4: 193–196.
6. Croft P, Pope D, Silman A. The clinical course of shoulder pain: prospective cohort study in primary care. BMJ 1996; 313: 601–602.
7. Boyie Walkder KL, Gabard DL, Bietsch E, Masek van Arsdale DM, Robinson BL. A profile of patients with

adhesive capsulitis. Journal Hand Ther 1997; 10: 222–228.
8. Hill JJ, Bogmill H. Manipulation in the treatment of frozen shoulder. Orthopedics 1988; 11: 1255–1260.
9. Grubbs N. Frozen shoulder syndrome: a review of the literature. J Orthop Sports Phys Ther 1993; 18: 479–487.
10. Wadsworth CT. Frozen shoulder. Physical Therapy 1986; 66: 1878–1883.
11. Bonafede RP, Bennett RM. Shoulder pain. Guidelines to diagnosis and management. Postgraduate Medicine 1987; 82: 185–189, 192–193.
12. Bulgen DY, Binder AI, Hazleman BL, Dutton J, Roberts S. Frozen shoulder: prospective clinical study with an evaluation of three treatment regimens. Ann Rheum Dis 1984; 43: 353–360.
13. Melzer C, Wallny T, Wirth CJ, Hoffman S. Frozen shoulder—treatment and results. Arch Orthop Trauma Surg 1995; 114: 87–89.
14. Wassef MR. Suprascapular nerve block. A new approach for the management of frozen shoulder. Anaesthesia 1992; 47: 120–124.
15. Sharma RK, Bajekal RA, Bhan S. Frozen shoulder syndrome. A comparison of hydraulic distension and manipulation. Int Orthop 1993; 17: 275–278.
16. Van Royen BJ, Pavlov PW. Treatment of frozen shoulder by distension and manipulation under local anaesthesia. Int Orthop 1996; 20: 207–210.
17. Ozaki J. Pathomechanics and operative management of chronic frozen shoulder. Ann Chir Gynaecol 1996; 85: 156–158.
18. Ogilvie-Harris DJ, Biggs DJ, Fitsialos DP, MacKay M. The resistant frozen shoulder. Manipulation versus arthroscopic release. Clin Orthop 1995; 238–248.
19. Lin ML, Huang CT, Lin JG, Tsai SK. Comparison between the pain relief effect of electroacupuncture, regional nerve block and electroacupuncture plus regional nerve block in frozen shoulder. Acta Anaesthesiol Sin 1994; 32: 237–242.
20. O'Kane JW, Jackins, S, Sidles JA, Smith KA, Matsen FAIII. Simple home program for frozen shoulder to improve patients' assessment of shoulder function and health status. J Am Board Fam Pract 1994; 12: 270–277.
21. Lundberg BJ. The frozen shoulder. Acta Orthopaedica Scandinavica 1969; suppl 119.
22. Van der Heijden GJMG, van der Windt DAWM, de Winter AF. Physiotherapy for patients with soft tissue shoulder disorders: a systematic review of randomized trials. BMJ 1997; 315: 25–30.
23. Baslund B, Thomsen BS, Jensen EM. Frozen shoulder: current concepts. Scand J Rheumatol 1990; 19: 321–325
24. Anton HA. Frozen shoulder. Can Fam Physician 1993; 39: 1773–1778.
25. Rizk TE, Pinals RS, Talaiver AS. Corticosteroid injections in adhesive capsulitis: investigation of their value and site. Archives of Physical Medicine and Rehabilitation 1991; 72: 20–23.
26. Shaffer B, Tibone JE, Kerlan RK. Frozen shoulder. A long-term follow-up. J Bone Joint Surgery [Am] 1992; 74: 738–746.
27. Rentsch O, Rentsch E. Bowtech. The Bowen Technique: A Training and Instruction Manual. 1997: Bowtech Pty Ltd: Hamilton, Australia.
28. Minnery, W. Personal Communication (e-mail)—The Essence of Bowen. March 2001.
29. Stake RE. The Art of Case Study Research. 1995: Thousand Oaks: Sage.
30. Winters JC, Sobel JS, Groenier K, Arendzen HJ, Meyboom-de Jong B. Comparison of physiotherapy, manipulation, and corticosteroid injection for treating shoulder complaints in general practice: a randomized, single blind study. BMJ 1997; 314: 1320.