

## Brief Review of the Literature

The term 'frozen shoulder' is one that 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 (Stam, 1994). Confusingly some authors see the terms primary/secondary frozen shoulder and acute capsulitis as being interchangeable (Bruckner, 1982). Various categorizations of frozen shoulder appear in the literature with Nash and Hazleman (1989) defining frozen shoulder in two categories:

- primary frozen shoulder (unknown aetiology, with classic signs of pain and restricted movement) and
- secondary frozen shoulder (an identical clinical condition but which has occurred in association with an injury or another disorder, such as diabetes mellitus).

Glockner (1995) identifies five categories for the aetiology of shoulder pain, these being 'fracture and/or contusion, shoulder separation involving the clavicle, instability of the glenohumeral joint, impingement syndrome involving the rotator cuff or biceps tendinitis, and frozen shoulder.

There is general agreement in the literature that a definitive diagnosis of frozen shoulder cannot be made without screening shoulder radiographs that exclude other conditions. However, there is agreement about the general criteria for primary or secondary frozen shoulder. Pearsall and Speer (1998) provide an overview of the criteria that can be used in the primary care setting. These include:

- clinical history of worsening painful shoulder
- motion loss of at least 1 months duration
- physical examination documenting painful, restricted shoulder motion.

The literature suggests that case definition, that is, the precise diagnosis of the cause of shoulder pain is extremely problematic (Bamji, 1998) and this can lead to difficulty in assessing the value of treatments for shoulder pain (Szebenyi and Dieppe, 1998). Indeed Bamji, Erhardt, Price and Williams (1996) and Bamji (1998) highlight the difficulty that experts have in precise diagnosis:

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*Our own study showed that three consultant rheumatologists who examined the same patients disagreed on the precise diagnosis in over 50% (14/26) of the cases, and when they examined a second group of patients together (so that they agreed on the clinical signs) they still disagreed in nearly 20% (4/18) of the cases" (Bamji, 1996)*

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This lack of consensus in relation to diagnosis is an issue that appears to limit many studies and causes post-publication critique. The debate within the medical literature is very active.

Reeves (1975) identified three consecutive stages in the natural history of frozen shoulder:

- the painful period (10-36 weeks),
- the stiff period (4-12 months), and
- the recovery period (5-26 months).

Reeves (1975) therefore suggests that frozen shoulder is a self-limiting condition although recovery is protracted. However, Croft, Pope and Silman (1996) propose that:

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*The assumption that shoulder problems are short lived, isolated episodes is not supported by data [in their study], which show that a quarter of patients with a new episode recall a previous problem; such a history influences the outcome of the new episode....."*

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People with frozen shoulder can experience a range of symptoms often starting with vague, generalized pain with some limitation of movement; most complain of hyperaesthesia and some experience hyperalgesia. If the symptoms become more severe, pain can be referred down the forearm and the movements become guarded and sleep disturbed by the pain. As the pain eases the person often has very restricted shoulder movement and the main problem they experience is functional disability (Stam, 1994). Boyie Walker, Gabard, Bietsch, Masek vanArsdale and Robinson (1997) found in their study of patients with adhesive capsulitis that the perceived clinical progression commenced with *“a pattern of pain followed by a loss of motion”*. This would seem to be a typical clinical picture of the (perceived) progression of the condition. Croft, Pope and Silman (1996) in a study undertaken in a primary care setting, identified patients presenting with shoulder pain had a wide range of disabilities (as scored on a 22 item disability questionnaire). These disabilities included sleeping problems (e.g., decreased sleep, difficulty in laying on one or both sides), physical functioning problems (e.g., carrying shopping, dressing), and psychological symptoms (e.g., increased irritability, dependency, and decreased appetite). Their findings demonstrated that only 21% of patients reported a complete recovery at six months and only 49% at eighteen months. They further stated that:

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*“A baseline disability score above the median value of 10, a duration of symptoms greater than a month, having received an injection at consultation, and having had shoulder pain in the past were significantly associated with poorer outcome at six months...Patients who had severely restricted passive elevation at baseline (less than 101°) also had a poorer outcome at six months”*.

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The aetiology of frozen shoulder is still under discussion (Baslund, Thomsen and Jensen, 1990; Melzer, Wallny, Wirth and Hoffman, 1995). The importance of effectively assessing the patient is crucial if the appropriate treatment is to be offered (Wadsworth, 1986). The treatment of frozen shoulder is an area of controversy within orthopaedics (Hill and Bogmill, 1988; Grubbs, 1993) with a range of treatment modalities being offered to patients, often with clients requiring prolonged treatment almost regardless of the intervention offered. A wide range of treatments are used and reported upon including: a mix of physical therapy, exercise (Wadsworth, 1986); NSAIDs and corticosteroid injections (Bonafede and Bennett, 1987; Bulgen, Binder, Hazleman, Dutton and Roberts, 1984); drugs and manipulation under anaesthesia (Melzer, Wallny, Wirth and Hoffman, 1995); suprascapular nerve block (Wassef, 1992); hydraulic distension (Sharma, Bajekal, and Bhan, 1993; van Royen, and Pavlov, 1996); operative management (Ozaki, 1996); arthroscopic release (Ogilvie-Harris, Biggs, Fitsialos and MacKay, 1995); electroacupuncture (Lin, Huang, Lin and Tsai, 1994); and education and stretching (O’Kane, Jackins, Sidles, Smith and Matsen, 1999).

Lundberg (1969) suggested that at least 1:50 people suffer from a frozen shoulder every year. Van der Heijden, van der Windt and de Winter (1997) states that:

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*“..Estimates of the cumulative annual incidence of shoulder disorders vary from 7 to 25 per 1000 general practice consultations.”*

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Yet despite the incidence of this problem and its impact on clients there are few sound studies evaluating the differing treatment modalities (Baslund *et al.*, 1990). Most studies have been undertaken on hospital patients even though Croft, Pope and Silman (1996) report that only a few patients with shoulder pain require referral to a specialist. Other researchers working in the primary care setting note the focus on hospital patients (for example, Winters, Sobel, Groenier, Arendzen and Meyboom-de Jong, 1997). The studies that do exist tend to produce conflicting results (Anton, 1993) or do not suggest any significant differences between differing treatments (Rizk, Pinals and Talaiver,

1991). Van der Heijden, van der Windt and de Winter (1997) found that the evidence, from their review of twenty randomized clinical trials, showed that ultrasound was ineffective and that physiotherapy was inconclusive; although their results are also disputed (Brockrow, Franke and Resch, 1998; Saunders, 1998). However, they state that many of the published studies are flawed in either design or execution. The existing evaluation studies show follow-up periods from between 8 months (Bulgen *et al.*, 1984) and seven years (Shaffer, Tibone and Kerlan, 1992). However it would appear that 12-24 months is the expected period of time during which slow healing and recovery naturally occurs (Anton, 1993), regardless of the intervention. Dodenhoff, Levy, Wilson and Copeland (2000) report that “*at 2 years from onset, most patients will have recovered whether treated or not*”. However, they identify that long-term recovery with or without intervention is not the key issue. Rather the problem lies with the fact that the “*duration of the morbidity has major implications for patient function and satisfaction*”. Dodenhoff *et al's.*, (2000) findings suggest that manipulation under anaesthesia can provide early-effect improvements on shoulder function and a reduction in the degree of disability. Even though manipulation remains controversial, there is increasing evidence that it can reduce the period of pain and disability in patients who do not respond to conservative treatment (Reichmister and Friedman, 1999).

A study by Gartsman, Brinker, Khan and Karahan (1998) which measured the impact on a range of shoulder conditions (including 100 adhesive capsulitis/frozen shoulder patients) on the self-assessed general health status of patients, found that:

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*“... patients with each of these shoulder conditions had statistically significant decreases in their health for physical functioning, role-physical, bodily pain, social functioning, role-health survey. Comparison with published data demonstrated that these shoulder conditions rank in severity (in terms of affecting a patients’ perception of his or her general health) with five major medical conditions (hypertension, congestive heart failure, acute myocardial infarction, diabetes mellitus and and clinical depression).*

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## **Bowen Technique and Frozen Shoulder**

Bowen Technique is a:

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*‘...dynamic system of muscle and connective tissue therapy..... [which] balances the body to allow allow it to heal itself. The work consists of a series of precise moves on specific points of the body. These moves are light and can be done through clothing. There are frequent and important pauses between each series of moves giving the body time to benefit from each. The technique uses positive moves that initiate a positive energy flow and negative moves that isolate this energy to a specific area’ (Rentsch and Rentsch, 1997)*

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The Bowen Technique is a system of subtle and very precise mobilisations called Bowen moves, applied over muscles, tendons, nerves and fascia. The moves are performed using the fingers and thumbs, applying only gentle, non-invasive pressure. 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.

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.

This typical Bowen move is the basis of all moves and is applied with certain adaptations throughout the body in specific locations and in prescribed locations to affect specific body systems for example, lymph, circulation, respiration - or specific body parts – for example the shoulder.

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 underlying assumption is that structure governs function and that disturbances of structure, in whatever tissue in the body, will lead to disturbances in the functioning of the structure and in turn of the functioning of the body as a whole. The Bowen therapist's goal is to assist the body to restore structural integrity and optimal function (Minnery, 2001).

There are no known published studies evaluating the effectiveness of Bowen technique in the treatment of frozen shoulder. Indeed, there are no published research studies into Bowen technique itself. Tom Bowen developed the technique intuitively and current practice is based on his original technique. There is much anecdotal evidence, from Bowen teachers, practitioners and clients, that the 'frozen shoulder procedure' provides successful outcomes for many clients presenting with a history of frozen shoulder. 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. This study aims to start to develop the evidence base for Bowen Technique by focusing on its effectiveness in treating a particular presenting condition, that of frozen shoulder.

## **Methodology**

### **Statement of Intent**

The intention of this study was to evaluate Bowen Technique in the treatment of frozen shoulder.

### **Aims of the Study**

The aims of the study were to:

1. determine the outcome of Bowen technique in relation to clients' experience of pain associated with frozen shoulder
2. determine the outcome of Bowen technique in relation to clients' limited functional ability with frozen shoulder
3. determine the outcome of Bowen technique in relation to the general well being of clients with frozen shoulder
4. determine the level of client satisfaction with Bowen technique as a treatment modality for frozen shoulder

### **Overview of Methods**

The study was fully funded by a grant from the Bowen Therapy Academy of Australia. A mixed method, case study

(Stake, 1995) approach was adopted as the best means of generating appropriate data. Quantitative data was generated in relation to physical functioning, mobility, levels of pain experienced, past medical history and specific shoulder pain history. Qualitative data was generated in relation to individual clients' experiences of Bowen therapy and their responsiveness, or otherwise, to the therapy. Data was collected through specially developed consultation sheets, self-report pain diaries, self-complete questionnaires and semi-structured interviews with clients at specific stages within their treatment. The number of therapists involved in the study was restricted to two to help ensure standardisation of the technique. Each client was identified as an individual case and comparison across cases was undertaken. The therapists were involved in some aspects of data generation and collection but were primarily delivering the therapy.

**Generation of Pain History:** Clients completed a structured questionnaire that elicited aspects of their pain history, their general medical history (including medication and specific interventions), general well being/health, basic demographic data, and method of referral to the therapist. This provided the foundation for the consultation and first treatment.

**Consultation and First Treatment:** A structured consultation and assessment of the client in relation to mobility, function and pain was undertaken and documented by the Bowen therapist prior to the treatment. The data sheet was designed in order to facilitate the efficient collection of data such that this process did not inhibit the interaction between therapist and client. At completion of the session the therapist completed the post treatment section of the sheet. This aimed to determine the immediate outcome of the session. It involved re-assessment of pain, function and passive and active mobility measures. The client was given a pain diary to complete on a daily basis [or as often as they were able to do so] during the research study.

**Second and Subsequent Treatments:** Prior to and at the end of each therapy session the therapist completed the appropriate assessment data sheets (the same tool as used in session 1). These generated data about the progress of the treatment and the clients' response(s) to it. On completion of the client's treatment all relevant documentation (consultation and assessment sheets, and pain diaries) were submitted to the lead researcher.

**Post-Discharge Interviews:** On discharge from the therapist, the client was invited to participate in a semi-structured interview with the lead researcher. This audio-taped interview aimed to elicit qualitative data on clients' experiences of the therapy.

Thus for each client involved in the study a comprehensive data set was generated.

### **Target Population**

The target population was all clients, who met the inclusion/exclusion criteria, who presented to the participating therapists during the period of the study. The target population was 50 clients although it was acknowledged that fewer clients might present during the time window of the study. The target population aimed to reflect an appropriate gender and age balance.

### **Criteria for Inclusion in the Study**

The key criteria for inclusion in the study were as follows:

- Client should meet the criteria for frozen shoulder as proposed by Pearsall and Speer (1998):
  - clinical history of worsening painful shoulder
  - motion loss of at least 1 months duration
  - physical examination documenting painful, restricted shoulder motion.
- Client should freely consent to participate in the research.
- Clients should be aged 18 years or over
- Clients should not be experiencing any major mental health problem
- Clients should not have received any other physical treatment modality such as physiotherapy, cortisone injections, trans-cutaneous electrical nerve stimulation (TENS), heat or cold therapy for three months prior to commencement of Bowen Therapy.

### **The Therapists**

The Bowen therapists provided a crucial component of the study in that they were required to deliver pure Bowen technique for the treatment of frozen shoulder to all patients recruited to the study. Originally five therapists expressed an interest in participating in the study. However, only two therapists were able to commit the time required to assist in the generation of data during their consultation with the client. The group of five therapists did meet and discussed the process of the study and provide expert consideration of the study documentation such as the consultation sheets. As a result of this group meeting the consultation and assessment sheets were refined and further developed to ensure that they facilitated fast and accurate notation of the functional ability and the pain status of the clients.

In order to ensure consistent practice between the two therapists, their practice was reviewed and any potential discrepancies discussed and eliminated for the purposes of this study. At the same time the therapists were coached in the correct and appropriate use of the study documentation – this was done in order to reduce any possible inconsistencies in reporting function and movement. Two other therapists expressed an interest in the study after it was underway but it was decided that it would not be appropriate to recruit them as it would have been problematic (due to geographical distance) to review their practice and to access their clients for the other elements of the study.

### **Ethical issues**

The study was given ethical approval by the Local Research Ethics Committee and the usual safeguards in respect to confidentiality and anonymity were adhered to throughout the study. Clients who either self-referred or who were referred to the therapist were approached by the therapist about taking part in the study. No coercion or pressure was placed on the client at any time. A client information sheet outlining the study design and purpose was provided for the clients to read and clients then made a decision as to whether they wished to take part in the study. All potential participants were given the opportunity to ask further questions about the study. Clients who decided that they wished to participate were asked to sign a witnessed consent form. Verbal consent was achieved for their continued involvement in the study at each consultation and at the contacts made by the lead researcher.

### **The Intervention**

The patient is prepared for the specific frozen shoulder releases by carrying out a series of basic relaxation moves

covering the musculature of the upper back, neck and shoulders. These moves are performed, ideally, with the client lying down.

After the neck and shoulders are relaxed, the patient is asked to stand or sit for the specific procedure. The simple procedure consists of three actions. Firstly a 'cup' move is performed which requires a vertically rolling Bowen move over the posterior border of the deltoid muscle above the axillary crease. This move is performed whilst the client's arm is held flexed at 90 degrees at mid chest height. The 'cup' move then follows. Simultaneously, the elbow is slowly moved in the direction of the opposite shoulder. The arm movement may be done either by the therapist or an assistant. Secondly, after maximal adduction of the arm, the therapist firmly taps the lateral aspect of the shoulder with the heel of his/her hand. Finally, the arm is then carried back to the original start position, where the therapist gently moves superiorly and slightly laterally over the anterior fibres of the deltoid. The arm is then carefully lowered.

This procedure is always carried out bilaterally with the non-affected shoulder being treated first. The non-affected side being determined by asking the subject to raise each arm in turn in lateral abduction to the first point of restriction

The treatment for frozen shoulder is repeated seven days after the initial treatment, where additional moves may be included if a resolution has not been achieved. These additional moves may involve addressing muscles and neurovascular bundles in the neck, chest, shoulder and back, according to assessment.

A period of twenty-eight days must then elapse before repeating the cycle. This regime of seven and twenty eight days between treatments is continued as necessary, although anecdotal evidence suggests that ongoing treatment (beyond three sessions) is rarely necessary (Minnery, 2001)

## Results

Data analysis was undertaken on all elements of data. The interviews were fully transcribed, and subjected to thematic analysis. The questionnaires, pain diaries, consultation sheets and other documentation were analysed using quantitative methods. Data was entered into SPSS and subjected to the appropriate descriptive statistical tests. Analysis of each case was undertaken and then consideration across cases was undertaken using all data sets for each case.

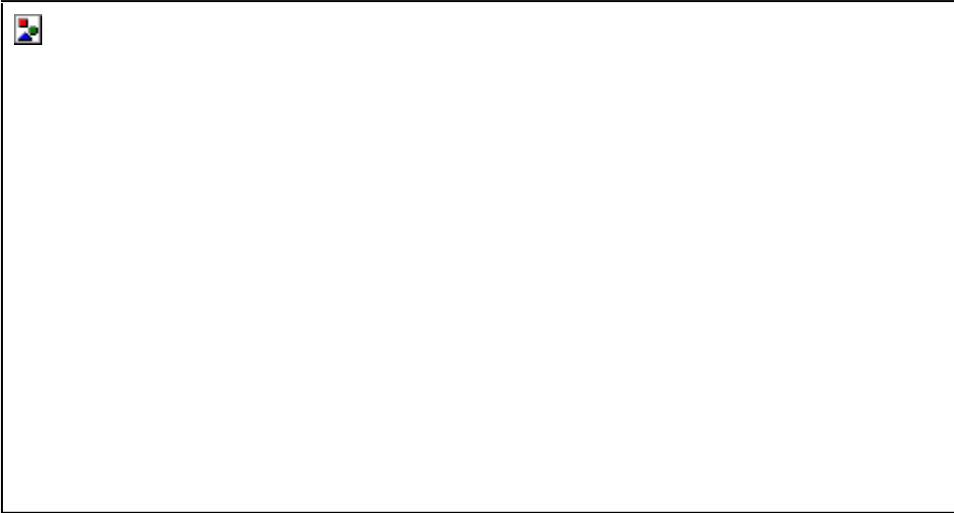
## Demographic data

A total of 21 clients were recruited to the study during the period of time available for the study. One client who presented with a frozen shoulder for treatment had a complex history emanating from a severe shoulder injury and a decision was made (after the post treatment interview) to exclude this client from the final data set.

Ten participants were male and ten were female. Seventy five percent of the participants were aged over 50 years

(see Figure 1). Fifteen participants were right handed and five were left-handed. Twelve subjects were experiencing symptoms in their right shoulder and eight in their left.

Figure 1: Age range of participants (n=20)



Overall (75%), participants felt that their health was either very good or excellent. The remaining participants (25%) reported their general perception of their own health as either fair (n=3) or poor (n=2) (see Figure 2).

Figure 2: Rating of general health by participants (n=20)



Six participants had a medical condition that contributed to their overall feelings towards their health status (see Figure 3). However, during the interviews these participants stated that the frozen shoulder was causing the most significant health impact at the time of presentation for treatment.

Figure 3: Range of medical conditions reported by participants (n=6)



### Previous experience and initial attitudes to Bowen therapy

None of the subjects had received Bowen therapy prior to their recruitment to the study. Eight participants had been referred to the Bowen Therapist by their General Practitioner, friends had recommended three participants, and two had referred themselves. The remaining seven had seen the therapy advertised in a local paper (see Figure 4).

Figure 4: Mode of referral to Bowen Therapist (n=20)



Their initial feelings about Bowen therapy were wide ranging: some participants felt a degree of scepticism about its likely efficacy, others felt neutral about the therapy and others welcomed the therapy as they had been reassured that it was 'gentle and non-invasive'.

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*I've got much more movement in it [shoulder] after the treatment with [therapist], than I had, because when I first started coming to him I couldn't lift my arm that much and I had pain all the time. [Now] it's **really** been relieved. I was quite surprised because I was quite sceptical when I started, especially when he [therapist] hardly did anything... The treatment was practically nothing and I thought, "Oh, I don't know about this!" I couldn't believe it.. Actually - it helped me quite a lot"*

*I'm reasonably open minded, but extremely sceptical. I suppose it's the same sort of scepticism that might apply to acupuncture or something like that... You can't really see how the hell it's suppose to achieve anything - but give it a try because anything would be better than the status quo. I suppose it was fairly substantial scepticism [at the start of therapy].*

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### Previous treatment experiences and initial impressions of Bowen

The participants who had experienced a long history of frozen shoulder had all had previous experience of physiotherapy treatment and some had received cortisone injections. During the interviews participants expressed their dissatisfaction with physiotherapy as their experiences, generally, had been characterized by a lack of improvement in their symptoms, increased pain during the treatment episodes, and a lack of support and advice in relation to the accompanying exercises. Many of the respondents who had previously received both physiotherapy and cortisone treatment described the experience as being fairly traumatic and unhelpful. Participants generally were reluctant to consider cortisone injections as a possibility for future treatment as the effects were short-lived. One participant's description was typical of the other participants' experiences, he stated:

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*So they [doctors] said "We can give you, rather than you taking painkillers all the time. ...We'll try a steroid injection". So they did -a steroid injection into the joint. That gave me a bit of relief for a while, but not for any sustained length of time - maybe about three to five weeks perhaps... And it just gradually got worse and worse. And then it was much the same again. So then they put me onto physio and I had 6 months of physiotherapy which really didn't have a great lot of effect either. Sometimes I think it made it worse.*

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Another participant described the way in which she felt somewhat let down by the experience of physiotherapy treatment:

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*I had one [frozen shoulder] in my left shoulder about 3 or 4 years ago. The doctors sent me to the physiotherapist at the hospital at [name of town] and she said 'Do these exercises!.' I was expecting that she would maybe manipulate it a little bit. But it was just a case of "Do these exercises and see what happens and tell me next time you come back".. I did try the exercises but it didn't seem to do terribly much for the shoulder. Eventually, I gave up doing them because all it was doing was making it painful.*

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It is interesting to contrast these somewhat negative descriptions about previous treatment experiences with the participants' experiences of Bowen Therapy. One participant, for example, who was very concerned that her shoulder would be "roughly handled" described her initial feelings about her referral and then the way she felt after having met the therapist and been treated. The following quote sums up the feelings of many participants:

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*[Before meeting the therapist] No, no idea at all [about Bowen Therapy]. To tell you the truth I was a bit ...nervous and a bit frightened. I thought -"Oooh, am I going to go through a lot of pain in moving moving it.....?"*

*[The first session was] very relaxing, really at ease ..you know, I was **really, really** at ease. I was surprised. "Oh, I thought it's going to be painful. He's [therapist] going to be asking questions. He's going to have me moving this way, that way and I'm going to be in pain when I come out!". And there was **no** pain at all.... just an odd twinge. Like there was a part in my back he touched and I had a twinge there and in my shoulder. He touched one or two places and that did [twinge] at first. But after the second session it was all right, you know. It was really relaxing [when the therapist left the room] I think if I just hadn't have heard his door open knowing he was coming back I think I'd of been well away!*

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One of the participants described the main difference between his experience of physiotherapy and Bowen Therapy was the relaxation that accompanied Bowen and which was definitely absent from physiotherapy treatment. This was in part engendered by the approach and 'nature' of the therapist:

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*I think the feeling of relaxation. [Therapist's name] is quite a quiet, calm sort of person anyway, isn't he? So therefore, I feel it was more or less just that. Sort of quiet, calming, comforting effect.*

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The good interpersonal skills of the therapist were emphasized by all of the participants and many of them described how the therapist engendered confidence and created a feeling that they believed in what they were doing. Three of

the participants summed this up when they stated:

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*I thought he was a very genuine person. He obviously believed in what he was doing.*

*I mean, I have gone to specialists before and it's been very much 'Yes', 'No'; you answer a question that they ask - but you don't have confidence to make conversation yourself. It's the way I felt 30 years ago when I went to a doctor, my normal GP. But with him [therapist], he had such a pleasant face and I think he got the best out of me. I can only speak for myself. But I was able to talk openly with him and I genuinely felt he was doing his best to help me.*

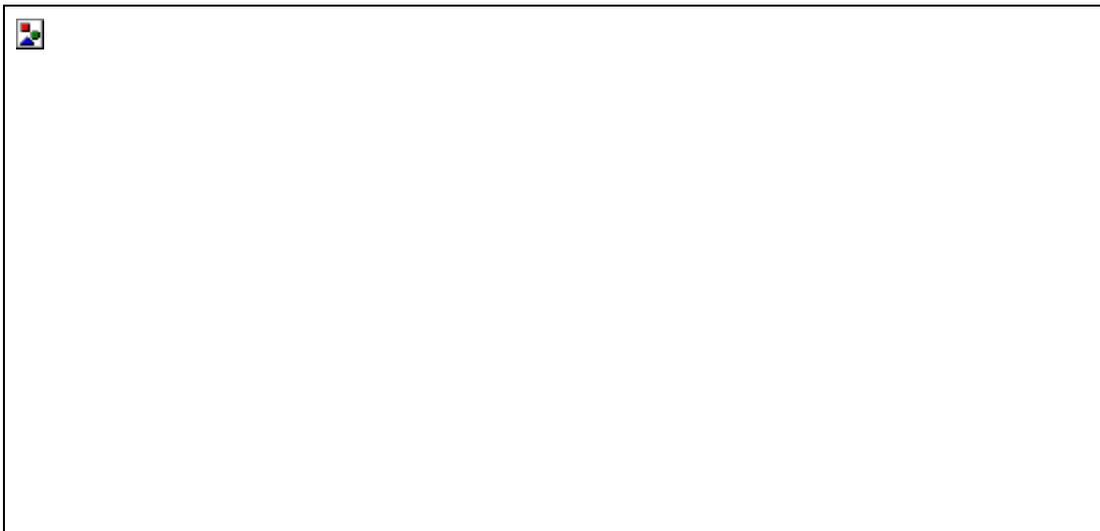
*[Therapist's name] been exceptionally friendly. He's discussed everything he's going to do and the whole thing has just been wonderful.*

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### Duration of frozen shoulder

One participant had experienced pain for one month, but all the other participants had experienced pain for more than four weeks, with one participant having experienced pain for 10 years. The majority of participants (n=13) had experienced pain for over three months (see Figure 5).

Figure 5: Length of time participants had experienced frozen shoulder (n=19)



### Alterations in mobility: on presentation and on completion of treatment

Most subjects had experienced reduced mobility in the affected shoulder for as long as they had had the pain, although some had experienced a slower reduction of mobility as the shoulder gradually froze. Most subjects stated that they had moderate restriction (see Figure 6). The participants' descriptions of how their frozen shoulder presented, reflected a typical clinical history scenario, for example:

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*I can't really remember when it first started. I just sort of realised that I couldn't move the arm and it was pretty painful. This was sometime ago now. I can't remember exactly when. I came back from the [name of city] area at the end of January; it was OK then - but over a few weeks after I came back it seemed to seize up and I couldn't do anything with it. I couldn't even tuck my shirt in behind my back. So it meant it was a bit of a performance tucking my shirt in. I had to hold my trousers with my right hand, within the limited movement it could do, and use my left. I had to do all the movement way round my back.*

*I'm not even terribly conscious about when it happened. The only thing I can think of originally is that that I did knock my arm one day at work. but it went away and there wasn't much after that. It was*

*only maybe a few weeks after that I began to find my shoulder getting really, really sore and having difficulty in lifting my arm. Well, it gradually just got worse and worse. Eventually it was really extremely painful. I went to the doctors a few times and they said 'Oh, just take painkillers.' And that was basically was I was just doing for quite a long time.*

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Figure 6: Level of restriction experienced by participants (n=20)



The therapist assessed the participants' mobility in both shoulders at each visit across a range of six movements; these being abduction, flexion, extension, medial rotation, lateral rotation and 'wall climb'. The non-affected shoulder was therefore able to act as a 'benchmark' for each individual participant. This mobility was assessed using a scoring system. The scoring system required the therapist to attribute a score of either 1-3 or 1-4 (as appropriate to each test) (see Table 1) with 1 being the least mobility score and either 3 or 4 being the best possible mobility score for each element. Thus the minimum possible mobility score was 6 with the maximum mobility score being 20. The mobility tests were carried out as both passive (whereby the therapist moved the arm through the range of movements) and active (where the participant undertook the exercise). This allowed each individual participant to be scored (active and passive) for both the affected and non-affected shoulder (and this the difference between the two) 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 (see Figure 7). 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.

Element tested	Range of possible scores
Abduction	1 – 2 – 3
Flexion	1 – 2 – 3 - 4
Extension	1 – 2 – 3
Medial rotation	1 – 2 – 3
Lateral rotation	1 – 2 – 3
Wall climb	1 – 2 – 3 - 4

Figure 7: Scores for initial and final difference between the non-affected and affected side



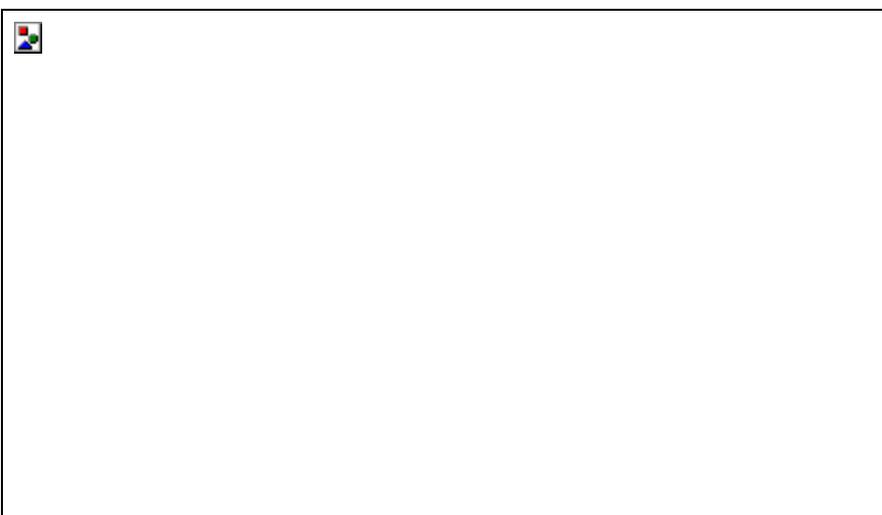
As can be seen from Figure 7 there is a marked improvement in mobility, with 70% (n=14) of participants experiencing no difference in mobility between their affected and non-affected side at the end of treatment. An alternative way of stating this 'no difference' would be to state that 70% of participants were scoring a 'perfect' 20 on the mobility score at the end of treatment. The remaining six participants all demonstrated improvement in mobility with the differences reducing down to between 1 and 3.

This improvement in mobility (between initial difference and final difference between affected and non-affected side) is statistically significant at .002 as demonstrated through a one-sample Kolmogorov-Smirnov test.

#### **Pain experienced: on presentation and on completion of treatment**

Participants were experiencing a range of symptoms on presentation (see Figure 8); many were experiencing a constellation of pain-related symptoms. The worse the reported pain, the more symptoms reported by the participants.

Figure 8: Range of symptoms reported by participants (n=20)



Participants were asked to report on the time of day/night when their pain was worse; this aimed to provide information on the likely impact pain would have on daily activities and sleep. Eight participants reported their pain to be worse mostly at night, six participants reported their pain to be worse mostly during the day and six indicated that it was equally bad during the night and the day.

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*... more pronounced in bed. During the day I can cope nicely with it, but the pain is really quite excruciating when I go to bed, I don't know why.*

*It wasn't there all the time but every time I moved and I couldn't sleep with it because if I turned over over on ..in bed or slept one way I couldn't seem to lie almost on my back and you know if I just turned over it were agony on this side, my left side, my right side were alright...*

*At night particularly, if I lay on it and turned over it would wake me up and I'd give a little yelp of pain, annoy the wife, roll over again..... I'd turn over and try to turn back - because you'd do this unconsciously and if I landed on that side I'd have to turn back quickly, so I spent the night spinning round.*

*At nighttime too, I couldn't lie on this side. That was another thing, after about 2 treatments I could actually lie - I mean I can now lie on this shoulder at night, where as I couldn't before. I had to always lie on this side of my back, and quite a bit of discomfort at night.....*

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The intensity of the worse pain pre-therapy was reported to be between 1-10 on the 0-10 pain intensity scale (although only one person reported having a worse pre-therapy pain score of 1). The median 'worse' pre-therapy pain intensity score reported was 7 and the mean intensity was 7. The intensity of the least pre-therapy pain was reported as being between 0-6 with the median 'least' pre-therapy pain intensity score reported as 3 and the mean intensity being 2. Thus overall, it can be seen that participants were generally experiencing high pain scores pre Bowen therapy (see Figure 9).

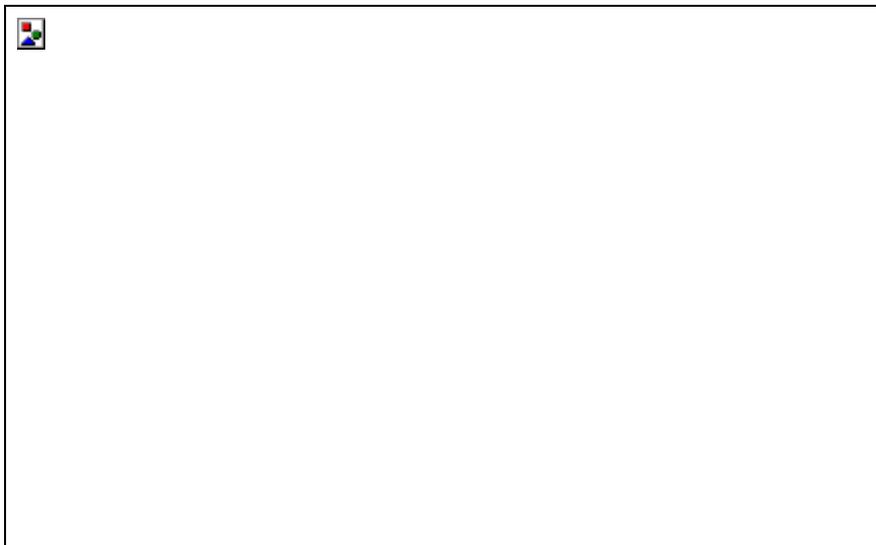


Figure 9: Pain scores pre-therapy

The intensity scores reflect one objective measure of the participants' pain. However, the interviews revealed their pain experiences in more detail and demonstrated the suffering and depth of pain experienced. Many of the participants had reached a point of desperation in relation to their pain and reduced mobility and felt ready to 'try anything':

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*I think as it was so painful I would have taken what help I could get.*

*With the pain I had I would'a done anything! If he [therapist] had a jumped on ma back and that had*

*had cured it, I'd a been quite happy....*

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The participants all described their worse pain in graphic detail, for example:

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*In my particular case it gave really violent pain to the point of not being able to concentrate on anything else. You could see blue mists and feel as if though you needed to flake out with it.*

*Really, really painful at the time. You know when sometimes your pain makes you feel quite sick that you have to sit down -*

*Sometimes it was really almost unbearable. Especially when it was going down into my arm and right into my hand. Just a nagging, sometimes it was quite severe, pain all the time.*

---

Participants identified the pain descriptors that reflected their pain experience. The reported descriptors are both pre and post therapy are presented in Figure 10. As can be seen from the data the use of all descriptors was high prior to therapy being commenced and was markedly reduced on completion of therapy. Even those participants who continued to score pain, were using a very restricted range of generally 'lower' level descriptors such as 'tender' and 'aching'.

Figure 10: Difference in pain descriptors used pre and post therapy by participants



Thirteen of the participants stated that they sometimes took painkillers – although this was often only very occasional; with the remaining seven choosing not to take analgesics either orally or topically. None of the participants found that the medication totally relieved the pain and often the medication was inadequate as pain relief. Participants were consistent in the way in which they described their reasons for not taking medication, for example:

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*It's painful, but you learn to live with that. I don't like taking tablets, drugs or whatever, if you can avoid them.*

*I don't like to take painkillers unless it gets beyond what I can suffer for the whole day. Although, when you're in pain for the whole day it does tire you out a bit.*

*Because after over 6 months of physio, and not getting any great effects at the end of it, it was quite disconcerting really. So I think from that point of view... and going back to the doctor and the doctors doctors just saying 'Well, keep taking painkillers.' I'm **not** the sort of person who likes taking medication, unless I have to. I just wasn't happy about swallowing painkillers all the time, to be perfectly honest.*

---

Pain often returned within four hours of having taken the medication and before it was safe to take another dose. During the study very few participants took any analgesia: only two participants used analgesics whilst they were

receiving Bowen therapy and this usage was very occasional and related to other factors such as some other injury.

Alongside their pain, a minority of participants (n=6) had to contend with the associated symptoms of headache and/or dizziness and/or nausea (see Figure 11). These symptoms were associated with the most severe episodes of pain and were not experienced as a matter of routine. However, they added to the perceived pain load of the participants who did experience them.

Figure 11: Additional associated features of pain pre therapy



The participants perceived the pain from their frozen shoulder as having a fairly major impact on other elements of their well-being and health status. Participants scored the impact of pain on these elements on a 0-10 scale (with 0 being no impact and 10 being the most impact) and reported a major impact on all elements apart from walking and their relationships with other people. This data was converted from the 0-10 scale to mild, moderate and severe categories for ease of presentation (see Figure 12).

These areas were more fully explored within the interviews and participants reported the pain and the reduced mobility in their shoulder as impacting on their activities such as bowling, gardening, playing with their children or grandchildren, and shopping. Many of the participants had modified their activities to accommodate the disabling effect of their frozen shoulder.

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*I had to give up my bowling, 'cos although I could bring my arm forward I couldn't bring it back...  
When it was really bad I couldn't sleep – it was really terrible then I couldn't do almost anything....*

*It made me more moody and lose my temper with people.. my family definitely noticed a difference, I  
I was more snappy ..*

*I could'na work at all well, I could'na work with my tools the way I usually did .. I had to know my  
limits... It was hard to work but I had to.....It was there all the time through the day... and through  
the night too.... I could'na do the things I wanted to do, it was very frustrating..... I could'na lift  
anything above waist level at all...*

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Figure 12: Degree of impact that pain had on the participants' daily activities pre and post therapy



After Bowen treatment the participants had been able to return to their normal activities and none of them were experiencing severe interference with daily activities and the majority experiencing minimal impact:

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*I don't have any problems now, I can just get on with my job – I can move the curling stones no problem now.....*

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*It was definitely easier after the first session – the mobility first and then the pain... I felt I was getting a wee bit more power.... It definitely helped as the sessions went on...*

---

It is interesting to note that 40% (n=8) of participants achieved an average final pain score of zero by the end of their treatment, and a total of 80% (n=16) scored their pain as being between 0-2. This, in fact, is a score of almost no pain at all and most participants described it as a slight ache (often associated with particularly strenuous activity – such as carrying very shopping or having worked hard in the garden). It is worth noting, that these activities had been impossible to undertake prior to the Bowen Therapy. There was an obvious difference between the pain scores pre- and post therapy (see Figure 13).

Figure 13: Worst and average pain scores immediately prior to first Bowen intervention and average pain scores after completion of final Bowen intervention, by participant.



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**The experience of and satisfaction with Bowen Therapy**

The number of Bowen treatment sessions varied between three visits and five visits. Six participants visited their therapist five times, six participants attended for four visits, and eight participants attended for three visits before they were discharged (see Figure 14).

Figure 14: Number of Bowen treatment sessions the participants attended. (n=20)



There were no reports of any adverse experiences as a result of Bowen Therapy.

All the participants, regardless of the final outcome of therapy, reported that Bowen had been a pleasant, gentle, relaxing and non-invasive therapy.

All the participants reported a tingling sensation (to a greater or lesser degree) whilst the therapist was undertaking the moves during a treatment session. The tingling session was most apparent during the first treatment.

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*Aye, the first treatment.... You got a kind of tingling, just a tingling.. I'm not sure if that's normal... the tingling was close to where [therapist] was working..... I felt fine when [therapist] was doing the treatment...it was an interesting feeling!*

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Some participants (n=12) reported that they felt a little light-headed at the end of the treatment session. However, this light-headedness was not unpleasant and wore off very quickly:

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*It just felt kind of tingly and I felt quite light and dizzy when I got up off the couch...just for about a minute or so.*

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Some participants also reported the feeling of warmth. Again this was seen to a positive experience and some felt that it was 'evidence' that their body was responding to the therapy and healing was starting to occur:

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*It was kind of a warm sensation in my shoulder.....it was a pleasant heat, it wasn't tremendously hot, hot, just a slight hotness. The tingling was more spread out round the shoulder than the heat.... It was a good sensation..*

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The overwhelming response by participants about their experience was how relaxing the therapy was. The participants emphasised how relaxed they felt during and after their treatment. The period lasted between two hours and two days: the majority of people felt relaxed for between four and eight hours. Participants felt that the therapy encouraged them to relax and it also engendered a sense of deep relaxation and well-being:

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*It gave you time to relax and be quiet - that was quite good as well. I didn't actually find anything wrong with it. I thought it was nice just to go out of the room and let you relax. I think that was mainly mainly one of the good things in fact.*

*just after the 1st treatment, and just walking down the road, I just felt really good... because I came in with quite a pain in my shoulder and down my arm. It was great walking down the road; I thought 'Oh, yes, this is really super!' I began to feel it at night again and when I was really beginning to get tired. But as the days went on and each subsequent week it got better and better.*

*I was very relaxed during the treatment.. I'm not usually relaxed – just ask my wife! – I'm usually*

*wanting to get on with next job .....so I was surprised at how much I enjoyed the treatment especially lying there when [therapist] had gone out the room....*

*The treatment was very relaxing - it was helping me to relax and the pain was going away...*

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The evaluation of Bowen therapy was extremely positive by all the participants who stated that they would recommend it to their friends and family as a 'good therapy' as it was so gentle, relaxing and effective. All of the participants expressed surprise at how gentle the therapy was, especially compared with the more vigorous, painful and/or invasive treatments such as physiotherapy, cortisone injections and other medication, they had previously experienced. Many of the participants commented at their amazement at how such a gentle therapy could actually be so powerful – these comments were particularly apparent in those participants who responded very positively to their first treatment session.

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*Yes, I could feel the movement [after the first treatment]. I still had a bit of pain, but not as much though, but the movement was coming back. I could tell after the 1st treatment that my arm was a lot better even though the treatment didn't feel strong.*

*But I was quite amazed myself that I did feel so much relief after such a short time, after having it for for so long.*

*It just felt like you were being touched and I was surprised at how little you had to do to make it work. It was nice as well... I wasn't sure that it was going to work with it being so little movements but it did... I thought it was good that it wasn't heavy movements.....I thought it was odd when [therapist] left the room to let me rest but it was nice....*

*After the first treatment I felt better and then about three days after the pain started to come back and then I had another treatment and the pain gradually went away, then I had another treatment and the pain went away. It got a lot better and now I'm a lot more cheerful. I met my dad after one session and he thought I was a completely different person... a lot happier – he was dead pleased.*

*He didn't aggravate the joints or anything, it's quite quick and you don't really notice that I'm happening or you can't really strain against it or anything like that.. It's just.... relaxing and like your body trusts the treatment....and relaxes into it.*

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## Discussion

The study aimed to examine four key elements relating to Bowen therapy and its impact on frozen shoulder. These four key elements were pain, mobility, well-being and degree of satisfaction with the treatment itself. Overwhelmingly, the participants perceived Bowen therapy to be gentle, relaxing and non-invasive and of help with improving or eliminating the symptoms associated with frozen shoulder. Evidence of this came through:

- A high level of satisfaction with the therapy, a commitment to using Bowen in the future should they require it for another episode of frozen shoulder or other condition, and the intention to recommend the therapy and therapist to friends and family
- A significant improvement in shoulder mobility and associated function for all participants, with 70% of participants regaining full mobility (equal to the non-affected side) by the end of the treatment.
- Markedly reduced pain intensity scores and pain quality descriptors for all participants, although some participants recorded scores of 1-3 that they described as a slight ache to a mild pain. Participants at the end of the study no longer used the intense and invasive pain descriptors.
- Bowen cannot, from this study, claim to be 100% successful but it demonstrated a significant improvement for participants, even those with a very longstanding history of frozen shoulder. For the majority of participants it provided a good outcome particularly in relation to improved mobility.
- All participants experienced improvement in their daily activities. 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.

### **Satisfaction with Bowen Therapy**

Satisfaction with Bowen Therapy was high mainly because the therapy was seen to be effective in reducing or eliminating symptoms and because of its gentle approach. Participants experiencing pain were unwilling to subject themselves to more rigorous treatment options, as they believed that they would be adding to their pain load. Participants who had experienced physiotherapy reported that they did not always comply with the regime of exercises, as the exercises were time-consuming and painful. The advantage of Bowen was that the participant experienced no pain during the treatment process and the associated exercises were gentle and non-threatening. Participants who expressed an initial degree of scepticism about the therapy were won over by the fact that it produced results. For many of the participants it was the first time they had experienced any form of complementary therapy. They were impressed by the consultation, the therapists' interpersonal skills, and the technical moves undertaken by therapist. Although the therapist leaving the room after completing a set of moves initially surprised the participants, they soon found this to be a positive experience and one that helped them to relax. All of the participants stated that they would consider using Bowen therapy again and would recommend it to their friends and family.

It is worthwhile noting that no participants withdrew from this study and yet withdrawal from shoulder pain studies is recognised as problematic (van der Heijden, 1997). For example in Winters *et al's.*, (1997) study drop out rates were evident in all their treatment groups (17% in the injection group, 51% in the physiotherapy group, and 59% in the manipulation group). Indeed, some of the participants in Winter *et al 's* study reported having dropped out of physiotherapy treatment due to feelings of dissatisfaction associated with lack of improvement, non-compliance with the home-based exercises, and the painful nature of the treatment.

### **Mobility, functional status, reduced pain and enhanced well being**

Bowen therapy was successful for the majority of participants and it certainly provided reduction, to a greater or lesser degree, in each individual participant's baseline symptoms. Thus it can be seen that the participants' associated morbidity was reduced by Bowen therapy. This then impacted on their ability to engage with their usual daily activities and their general sense of well-being. The participants were satisfied by this improvement. The most impressive outcome of the study was the improvement, across all participants, in the functional mobility 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 better response than many of the other studies which have utilised a range of more conventional treatments (Croft *et al.*, 1996; van der Heijden, 1997; Winters *et al.*, 1997). The remaining six participants all demonstrated improvement in mobility with the differences reducing down to between one and three. These participants all were more functionally able and were able to participate more fully in their usual daily activities. Bowen therapy would seem to have had an impact on the duration and/or intensity of morbidity and thus, reduced the major implications related to morbidity discussed by Dodenhoff *et al.*, (2000).

Pain scores also decreased markedly. Participants were either scoring no pain (a score of zero) or substantially lower pain intensity scores 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 being used for those participants scoring pain.

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. One measure of success could be seen in participants returning not just to the 'required' activities of living such as shopping, cleaning, and working but also to their hobbies, such as gardening, bowling, curling, sewing, and woodwork. The sense of pleasure was very evident in the interviews about the return of the ability to *"just do the things you want to, without thinking about it or it hurting."*

## Conclusions

Bowen cannot, from this study, claim to be 100% successful but it demonstrated a significant 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 (see Croft *et al.*, 1996). 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 and certainly one which participants in the study evaluated as being highly satisfactory.

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