Acupuncture for stroke: perceptions and possibilities

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Abstract

Objective: To investigate perceptions and acceptability of, and attitudes towards, acupuncture for post-acute stroke and rehabilitation care by exploring the views of different stakeholders.

Methods: Three electronic surveys were conducted to gauge the breadth of knowledge and acceptance of acupuncture in post-acute stroke and rehabilitation care among three stakeholder groups: (1) traditional acupuncturists registered with the British Acupuncture Council (BAcC); (2) National Health Service (NHS) professionals attending the 2017 UK Stroke Forum conference; and (3) the UK network of Stroke Club co-ordinators.

Results: Of 278 NHS respondents, 31% were doctors. Over half (52%) of all NHS respondents reported they had insufficient knowledge about acupuncture, its effectiveness (23%) or how to refer (21%). Only 12% had previously referred stroke patients for acupuncture but 46% thought that there was a role for acupuncture in post-acute stroke care (50% were unsure). Two thirds of BAcC acupuncturist respondents had treated at least one stroke patient, with 70.1% having treated 1–5 stroke patients and 71% having provided treatment in the last year, most commonly for motor impairment (88.2%). Of 99 Stroke Club coordinators who responded, only seven had ever been asked about acupuncture by patients, but most felt there would be interest.

Conclusion: Interest in the provision of acupuncture for post-acute stroke care was expressed by both NHS practitioners and acupuncturists. Further research is required on the acceptability of acupuncture to patients as well as evidence of its clinical and cost effectiveness.

Keywords
acupuncture, attitudes, healthcare professionals, knowledge, post-acute stroke, rehabilitation

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Introduction

Stroke is a major cause of mortality and disability. In the United Kingdom, each year, 80,000 people are admitted to hospital as the result of a stroke. Of 1 million stroke survivors, over half are left with a disability (https://www.england.nhs.uk/ourwork/clinical-policy/stroke/). Options for rehabilitation depend on patients’ symptoms, impact on quality of life for patients/carers, knowledge of other treatments and funding.

Acupuncture, as a potential intervention in post-acute stroke care, is rarely mentioned in Western medicine, but in China it is routinely used in post-stroke rehabilitation. Three Cochrane reviews have specifically focussed on acupuncture for stroke, more specifically for the management of dysphagia following acute stroke, stroke rehabilitation and acute stroke. Treatment for acute stroke in

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these reviews was defined as that being administered within 30 days of stroke onset, included trials were Chinese and apparent improvements in outcomes with acupuncture in acute stroke were confounded by the risk of bias related to use of open controls. Three other stroke Cochrane reviews have specifically included acupuncture. The proportion of participants with dysphagia was reported to be significantly less for those having acupuncture (OR 0.31, 95% CI 0.20–0.49; 676 participants; eight studies; $P^2 = 0%$; $p < 0.00001$).

Other systematic reviews of randomised controlled trials (RCTs) have concluded that, despite poor study quality, acupuncture may have a role in post-acute stroke rehabilitation for various symptoms. The joint American Heart Association and American Stroke Association guidelines on adult stroke rehabilitation mention acupuncture as a potentially useful intervention. Evidence for specific stroke-related issues such as shoulder pain, dysphagia, cognitive function and walking mobility requires more evidence if acupuncture is to be acceptable and included as a recommended intervention. Mechanistic studies support the possibility of acupuncture being useful for conditions associated with stroke. For example, studies on patients with chronic stroke have shown that acupuncture produces hyperactivation in the area of the sensorimotor cortex related to the side weakened by the stroke, and that this increase in activity appears to be positively correlated with improvements in movement of the affected hand and upper limb. This illustrates the potential for cell regeneration and for acupuncture to strengthen activity of the affected side of the brain.

Although the majority of patients in the United Kingdom access acupuncture privately, it is rarely used for post-acute stroke. Its acceptability or potential uptake for conditions associated with post-acute stroke is unknown.

Acupuncture, a low cost intervention, has not been evaluated as a potential treatment option for post-acute stroke by the UK’s National Institute of Health and Care Excellence (NICE). National stroke guidelines report some evidence regarding its use for reducing dysphagia but studies are insufficient to recommend it.

This study, designed as three separate surveys, investigated the perceptions, attitudes and use of acupuncture in post-acute stroke rehabilitation by exploring the views of different stakeholders involved in post-acute stroke rehabilitation care pathways: (1) traditionally trained acupuncturists; (2) National Health Service (NHS) professionals and (3) co-ordinators of Stroke Clubs.

**Methods**

Between September 2017 and March 2018, three separate and discrete stakeholder surveys of stroke care providers were conducted in the United Kingdom, as follows:

1. Traditional acupuncturists registered with the British Acupuncture Council (BAcC).
2. NHS professionals attending the 2017 UK Stroke Forum conference in Liverpool.
3. The UK network of Stroke Club co-ordinators.

The content of the individual surveys was co-designed with relevant stakeholder involvement and piloted before general dissemination.

**Ethical approval**

Ethical approval for the surveys was granted by the London South Bank University research ethics committee. Participants were provided with contact details for questions and concerns. Decision to participate was voluntary and completion of the survey implied the individual had agreed to provide their consent. All data were anonymised.

**Survey 1 – BAcC traditional acupuncturists’ views**

Acupuncturists registered with the BAcC were targeted. The BAcC is the self-regulatory body for the practice of traditional acupuncture in the United Kingdom and has approximately 3000 members, mainly working part-time and in private practice. Members practice traditional acupuncture in accordance with World Health Organization recommendations. The aim was to ascertain whether BAcC members had interest in and experience of treating stroke either within the NHS or in private practice by exploring their views on the use and effectiveness of traditional acupuncture in post-acute stroke and rehabilitation care, and perceived barriers.

During Autumn 2017 and Spring 2018, the BAcC sent out an email to all members with an electronic link to the questionnaire, hosted on the Survey Monkey website, requesting completion. Hard copies of the survey and iPad versions were available for completion at the 2017 BAcC meeting and the Acupuncture Research Resource Centre (ARRC) symposium in March 2018. The BAcC journal also alerted members who could choose whether they wished to respond to the survey. Even if they had never treated a patient who had experienced a stroke, they were encouraged to complete the survey as their views were considered equally as important given the survey’s aims.

**Survey 2 – NHS professionals’ views**

To ensure that a wide range of opinions could be accessed simultaneously, a survey of NHS professionals working in post-stroke and rehabilitation care was carried out during the 12th UK Stroke Forum (28–30 November 2017 in Liverpool), attended by members of a coalition of over 30 organisations. Attendees included those responsible for the treatment and rehabilitation of people who have experienced a stroke (e.g. doctors, nurses, physiotherapists,
occupational therapists and dieticians). The investigators (N.R. and P.R.) approached attendees to explain the study and asked for completion of a short questionnaire. A conference stand was setup in the main exhibition hall specifically for this purpose. Questionnaires were available through Survey Monkey via electronic tablets and mobile phones, and in paper format. The stand had high visibility in a central area and research information on acupuncture for stroke care was made available for those who were interested. A raffle for a shopping voucher was held to encourage completion of the questionnaire.

Survey 3 – Stroke club co-ordinators’ views

The third group surveyed were the co-ordinators of the national network of Stroke Clubs (associated with the UK’s Stroke Association), advertised on the Internet with publicly available contact information.

This survey was primarily a very simple, short scoping exercise to explore the following:

1. Whether any stroke survivors and carers in their network had expressed an interest in acupuncture.
2. Whether approaching Stroke Clubs was an effective way of identifying interested groups of patients.
3. The utility of this approach as a potential recruitment method for future studies.
4. Identification of potential barriers to research and any issues related to integrating acupuncture into post-acute stroke/rehabilitation care.

Data analysis

For each of the three surveys, descriptive statistics were calculated for each response category using Survey Monkey software. Qualitative data were collected through open-ended questions and thematically analysed.

Results

Survey 1 – BAcC traditional acupuncturists’ views

Although the response rate was a little disappointing, with only 123 acupuncturists completing this survey, a personal communication from the research coordinator at the BAcC reassured us that this response rate was within the normal range of responses to previous BAcC professional membership surveys. The demographic characteristics were similar and, overall, appeared to be representative of current BAcC statistics on current membership in terms of age, gender, years in practice, other healthcare training and practice base. Three quarters of acupuncturists responding were women, 45% had practised between 1 and 9 years (compared with 43% in a recent BAcC membership survey) and just over a quarter had been practicing for over 20 years (Table 1). Over three quarters had no professional biomedical healthcare training and 88% were in private practice.

Of the 30 acupuncturists reporting a specialist area of practice, 22 mentioned women’s health (with 20 specifically mentioning fertility/infertility), 10 mentioned musculoskeletal/pain, 2 mentioned irritable bowel syndrome and 3 mentioned mental health problems. Other conditions mentioned included Parkinson’s disease and skin problems. None mentioned stroke as a specialist area of practice.

Of those responding, just under two-thirds (63.4%) had treated a stroke patient. Of these, 70% had treated between one and five patients, 21% had treated up to 20 patients and 7 practitioners had treated over 20 patients, potentially due to having seen patients in clinical facilities in China during training (Table 2). Most practitioners (61%, n = 46) reported that they had treated at least one stroke patient within the last 2–5 years and 27 people reported treating a stroke patient during the last year.

Of the 78 respondents who reported having treated a stroke patient, 76 stated the reason for treatment. Of these, 88% had used acupuncture to help motor impairment; the next most common reasons reported were to improve quality of life (65.8%), followed by management of depression/anxiety (51.3%), neurological pain (47.3%) and communication problems (46.1%; Table 2). Open-ended comments, recorded as qualitative responses, included circulatory problems, fatigue, fertility, pain, headaches and hypertension.

The majority of respondents (93%) felt that acupuncture would be useful as an addition to post-acute stroke care with 89% feeling it would be effective. Just over half (51%) thought it was an area of acupuncture practice they would like to get involved with and 39% reported that it may be of interest and felt acupuncture would be a useful addition to care. However, only eight respondents had approached any NHS service with this in mind.

The closed questions on the perceived barriers to providing acupuncture treatment to people post-acute stroke care are displayed in Table 3. Doctors’ lack of knowledge about acupuncture was reported by 92% of respondents and carers’ lack of knowledge reported by 77%. Scepticism was mentioned by nearly three quarters of respondents. The lack of clear referral pathways and how to access patients in NHS hospitals was also thought to be a common barrier.

Qualitative data collected through open-ended questions suggested other barriers, of which cost was the most frequently mentioned theme (n = 13). Other themes emerging were: ability to access patients, having sufficient time to treat, ability to treat frequently, the complexity of the condition, need for specialist and/or more training, access to NHS healthcare professionals, timing (providing acupuncture soon after a stroke) and the evidence base.

Selected qualitative comments to illustrate these emerging themes are given as follows.
Cost. In China, acupuncture treatment usually occurs on a daily basis and the need for regular and frequent treatments would mean that there would be financial issues for patients, as in the United Kingdom patients would most likely be paying privately for treatment:

Cost: Treatment has to be regular – I have treated the same patient twice daily sometimes. I often end up working for nothing.

Finance: Most treatment is paid for privately. Funding, especially for ongoing long-term treatment, is very limited. I think, of the three reasons I have selected, this is the greatest barrier.

Table 1. Comparison of demographic characteristics of acupuncturists completing the survey and an earlier small survey of British Acupuncture Council members (Survey 1).

|                      | This survey (n = 123) | Earlier BAcc members survey* (n = 115) |
|----------------------|-----------------------|---------------------------------------|
| Age (years)          |                       |                                       |
| <39                  | 13.6% (17)            | <39                                   | 10%                     |
| 40–49                | 21.1% (26)            | 40–49                                 | 22%                     |
| 50–59                | 41.5% (51)            | 50–54                                 | 33%                     |
| Above 60             | 23.6% (29)            | Above 55                              | 35%                     |
| Female               | 76.4% (94)            |                                       | 70%                     |
| Years in practice    |                       |                                       |
| Less than 1          | 7.3% (9)              |                                       | 5%                      |
| 1–4                  | 29.3% (36)            |                                       | 23%                     |
| 5–9                  | 15.5% (19)            |                                       | 20%                     |
| 10–14                | 12.2% (15)            |                                       | 15%                     |
| 15–19                | 8.9% (11)             |                                       | 17%                     |
| More than 20         | 26.8% (33)            |                                       | 20%                     |
| Other healthcare professional training | |                                       |
| None                 | 78.7% (96)            | 82.3% (92)                            |
| Western-trained doctor | (1)                  | (3)                                   |
| Physiotherapist      | (2)                   | (1)                                   |
| Nurse                | (4)                   | (8)                                   |
| Other                | (4)                   | (5)                                   |
| Practice base        |                       |                                       |
| Private practice     | 87.8% (108)           | 87.6% (92)                            |
| General practice     | 8.9% (11)             | 7.1% (8)                              |
| Hospital             | (2)                   |                                       |
| Hospice              | (2)                   |                                       |
| Multi-bed community clinic | (4)                  | Charity provision 13.4% (15)           |
| Specialist area of practice | 24.8% (30)           | Not known                             |

*Data taken from membership survey carried out by the British Acupuncture Council (BAcc).
### Table 2. Have you treated any stroke patients and for what reasons (Survey 1)?

| Question                                                                 | Yes (%) | n  |
|--------------------------------------------------------------------------|---------|----|
| Have you treated anyone who has had a stroke?                            | 63.4%   | 78 |
| Was this for any of the following reasons? a                             |         |    |
| - Neurological pain                                                      | 47.3%   | 36 |
| - Dysphagia                                                              | 25.0%   | 19 |
| - Depression/anxiety                                                     | 51.3%   | 39 |
| - Motor impairment                                                       | 88.2%   | 67 |
| - Communication problems                                                 | 46.1%   | 35 |
| - Sensory impairment                                                     | 26.3%   | 20 |
| - Cognition and memory loss                                              | 27.6%   | 21 |
| - Sleep                                                                  | 27.6%   | 21 |
| - Quality of life                                                        | 65.8%   | 50 |
| - Other                                                                  | 11.8%   | 9  |
| How many stroke patients have you treated?                               |         |    |
| - 1–5                                                                    | 70.1%   | 54 |
| - 6–20                                                                   | 20.7%   | 16 |
| - 21–50                                                                  | 5.2%    | 4  |
| - More than 50                                                           | 3.9%    | 3  |
| When did you treat them? a                                               |         |    |
| - This year                                                              | 35.5%   | 27 |
| - Last year                                                              | 34.2%   | 26 |
| - Last 2–5 years                                                         | 60.5%   | 46 |
| - Over 5 years ago                                                       | 40.8%   | 31 |
| Do you think acupuncture would be a useful addition for people recovering from a stroke? b |         |    |
| - Yes                                                                    | 93.3%   | 112|
| - Possibly                                                               | 6.7%    | 8  |
| - No                                                                    | 0%      |    |
| Do you think acupuncture would be effective for people recovering from a stroke? b |         |    |
| - Yes                                                                    | 89.2%   | 107|
| - Not sure                                                               | 10.8%   | 13 |
| - No                                                                    | 0%      |    |
| Is this an area of acupuncture practice you would like to get involved with? b |         |    |
| - Yes                                                                    | 51.7%   | 62 |
| - Possibly                                                               | 39.2%   | 47 |
| - No                                                                    | 9.2%    | 11 |
| Have you approached an NHS service?                                     |         |    |
| - Yes                                                                    | 6.8%    | 8  |
| - No                                                                    | 93.3%   | 112|

NHS: National Health Service.

aMore than one answer could be provided.

bThis question could be answered irrespective of whether the practitioner had ever treated someone with a stroke.
I was allowed access to hospital on the request of patients. Hospital now employs someone who does a bit of acupuncture! I had nurses watching my treatments and taking notes!

**Time.** The time needed to integrate acupuncture into complex rehabilitation programmes and for carers to give up their time to make visits was perceived to be potentially problematic:

Reliance on a relative to make time for the treatment too.

Patients are tied up with many hospital appointments in first three months post stroke and so not normally available for acupuncture during the most potentially responsive period to acupuncture.

**Complexity of the condition.** The symptoms associated with stroke are very diverse and difficult to treat, and therefore a more holistic approach could be helpful, but few were aware of how acupuncture may help:

Stroke is a difficult condition to treat, its effects are very varied, and responses vary too. The situation is very different to chronic pain, where there is widespread public awareness of the benefits of acupuncture, as a result primarily of word-of-mouth, but also acceptance of acupuncture [for] pain across the biomedical community. This public knowledge does not exist for stroke.

Some of the additional comments included in the open-ended section at the end of the questionnaire are given in the following section together with the themes that arose.

**Desire for specialist/additional training.** The interest in and need for specialist training regarding the treatment of people who had a stroke was highlighted by some respondents:

I would be interested in CPD courses on this subject, and happy to volunteer in stroke units.

I think to treat patients post stroke a specialist course perhaps in scalp acupuncture would be relevant or some specialist training.

I spent 3 months working in a training hospital in Shanghai which specialised in stroke so would like to use that training more over here.

I feel I have made major differences to patients quality of life, depression, sleep, and that I have made some difference to pain levels, but I have made little difference to recovering motion in limbs – which is predominantly why people have come to me. Also, patients only come to me months or even years after the original stroke. I presume treatment would be more effective closer to the time of the stroke.

**Access to NHS healthcare professionals.** Acupuncturist respondents were unclear how to communicate with healthcare professionals in terms of working with stroke patients. The general practitioner (GP) as gatekeeper was a perceived barrier but there was enthusiasm to work with NHS professionals to improve patient care:

It would be good to learn a referral path for GP and hospitals. How do we access doctors?

I am very passionate about this subject and asked around consultants etc. to let me do a study and to calculate the economy to NHS and which will bring someone recovered or partially recovered from CVA (cerebrovascular accident), no luck so far.

I would love to be treating this patient group but having got nowhere with local GPs in terms of setting up joint treatment programmes for various pain conditions (which have good evidence that GPs may be familiar with) the mind boggles at the mountain to climb to make it worth the time training for and promoting acupuncture as a treatment.

**Acupuncture may be effective.** There was a general feeling that acupuncture could help at various levels and with different symptoms, and the key was to achieve a long-term effect:

Patients at risk of stroke are good candidates for acupuncture. Acupuncture is really about keeping well.

It was particularly difficult with the aphasia as well, but the husband especially felt very supported.

Based on my experience, I believe that at least 10 sessions of acupuncture are necessary to produce a long-term effect, and even then, remission of symptoms can occur. However, for my
post-stroke patient, acupuncture was the one thing that was helping her make a progress with her symptoms, and hence I can vouch for the efficacy of the acupuncture treatment for post-stroke rehab.

**Timing (providing acupuncture as soon as possible after a stroke).** Many respondents commented that it was important to provide acupuncture as soon as possible after the stroke event and apply frequent treatments:

High frequency i.e. daily in hospital treatment followed at home would lead to the best outcome, within the first month of the stroke.

It would be good to see patients soon after the stroke occurs. Patients I’ve seen have come after months or years after the event.

I believe this is a totally underused treatment that would be very effective in helping many, many patients recover in varying degrees. However, as we rarely get opportunity to treat such patients in the early stages (where I understand treatment is best given) I feel that acupuncture is very much under-rated and under-used treatment.

Acupuncture, if administered immediately after a stroke can be hugely effective and it requires acupuncturists to be available in hospitals to administer this. If acupuncture is used in rehab, the patient needs treatment almost daily to make the most impact.

Treatment was nearly a year after the stroke, which I felt was too long a duration to be of significant benefit. Also, dose might be an issue. Is weekly enough at this stage etc.? Lots of questions. In future would only treat if within 3 months of stroke onset.

**Cost of private acupuncture.** The cost to patients of paying for acupuncture privately continued to be raised as a concern by acupuncturists:

I briefly worked in research physiotherapy unit and encountered a patient self-help group. I was impressed how keen they were to explore unusual avenues, but the big barrier is that they are often unable (or unwilling) to pay privately for services.

Best recovery is patients who have the will to get better and pay for services. This obviously excludes many with the affliction.

Compared to some years ago, many fewer patients consult with me for stroke treatment these days.

Other less frequent topics raised by respondents were the evidence base, practitioner outcomes, patients’ reasons for accessing acupuncture and acupuncturists’ experiences of seeing how acupuncture could be effective in China.

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**Survey 2 – NHS professionals’ views**

Of 1450 delegates attending the UK Stroke Forum conference (2017), 278 individuals completed the survey (269 online, nine paper-based). Seven questionnaires were excluded because they were incomplete or respondents did not treat stroke patients. The survey data represented approximately 20% of conference attendees. Table 4 compares the professional groupings of the conference attendees, published in the conference statistics (Stroke Association), with those who participated in the acupuncture survey. The data shows that the proportion of doctors, nurses, physiotherapists and speech/language therapists who completed the survey had a similar profile to conference attendees. Proportions of delegates attending the 2016 conference were also similar, so this survey was considered to capture a fairly representative sample of attendees involved in the stroke care pathway.

Doctors and nurses were the main respondents to the questionnaire, followed by physiotherapists and occupational therapists (Table 4).

A total of 46% felt acupuncture would be a useful addition to post-stroke care, 50% were unsure and only 4% said no (Table 5). However, 88% of healthcare professional respondents had never referred a stroke survivor for acupuncture. Just over 50% felt they did not know enough about acupuncture. Of those previously referring to acupuncture, 4 reported regularly referring and 10 reported it was available in their Trust. The main reasons for referral were neurological pain (73%) and motor impairment (35%; Table 5).

Respondents reported that referrals were not made due to lack of knowledge about acupuncture (52%), never being requested by a patient/carer (39%) and insufficient evidence of efficacy (23%). No one raised safety as an issue. Physiotherapists and nurses were more likely to say that they felt acupuncture would be a useful addition to post-acute stroke care (Table 5).

**Survey 3 – Stroke club co-ordinators’ views**

A total of 89 responses were obtained from individual Stroke Club co-ordinators and an additional 10 from coordinators who attended the conference and completed the same survey. The following analysis includes data from 99 respondents. Of emails sent, 187 were opened, 69 unopened and 11 bounced. Fifteen individuals opted out and 10 surveys were excluded because they were incomplete or respondents did not treat stroke patients. The survey data represented approximately 20% of conference attendees. Table 5 compares the professional groupings of the conference attendees, published in the conference statistics (Stroke Association), with those who participated in the acupuncture survey. The data shows that the proportion of doctors, nurses, physiotherapists and speech/language therapists who completed the survey had a similar profile to conference attendees. Proportions of delegates attending the 2016 conference were also similar, so this survey was considered to capture a fairly representative sample of attendees involved in the stroke care pathway.

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about having acupuncture as part of their stroke care. Of the 89 respondents who answered this particular question, 65 (73%) felt that their members would be interested in finding out more about acupuncture with 87 respondents (96%) believing that contacting stroke co-ordinators would be a good way to access stroke survivors’ views on acupuncture and future research.

Discussion

Positive interest in acupuncture from all three stakeholder surveys (NHS stroke care professionals, acupuncturists and Stroke Club coordinators) suggested that there may be some real multi-professional opportunities to explore its use in post-acute stroke and rehabilitation care. Acupuncture is increasingly accepted and used in other countries\textsuperscript{20,21} but international clinical guidelines provide different recommendations for different symptoms (N.R., unpublished data).

The symptoms most commonly treated by acupuncturists that have considerable systematic review evidence, such as pain and depression,\textsuperscript{22,23} are similar to some symptoms resulting from stroke. For other stroke symptoms, the effectiveness of acupuncture is less clear cut. A recent 2019 overview of systematic reviews and meta-analyses of acupuncture for dysphagia\textsuperscript{24} suggests that evidence may still be insufficient to produce conclusive evidence, though some symptoms associated with dysphagia may improve.

A recent overview of systematic reviews of acupuncture for stroke showed statistically significant improvements in depression compared with cognitive rehabilitation after 2 weeks of treatment with no increased risk of adverse effects.\textsuperscript{25} In a randomised study comparing cerebral activity in stroke patients receiving acupuncture compared with those receiving conventional treatment, using resting-state functional magnetic resonance imaging (fMRI), acupuncture elicited different brain responses and appeared to significantly improve symptoms with changes in sensory, emotional and motor areas.\textsuperscript{26} A 2017 literature review suggested that five mechanisms may be operating in ischaemic stroke rehabilitation\textsuperscript{27} and, as stroke patients may exhibit a cluster of symptoms, acupuncture may be a useful intervention as part of an integrated approach to care.

The BAcC acupuncturist survey suggested that there was interest in and enthusiasm for treating this group of patients, with some acupuncturists already having positive treatment experiences for a range of symptoms. Cost of paying for private treatment, NHS patients’ access to care and timing of treatment were key barriers identified and the need for some specialist training was identified. Although currently patients tend to pay for acupuncture themselves, it is a potentially low-cost intervention to administer. As yet, there have been no cost-effectiveness studies to

| Table 4. Breakdown of National Health Service respondents by professional grouping (Survey 2). |
|---|
| **Attendees completing the survey (n=278)** | **2017 conference attendees (n=1450)** | **2016 conference attendees (n=1500)** |
| Doctors | 31% (86) | 26% | 22% |
| Nurses | 22% (61) | 20% | 23% |
| Physiotherapists | 11% (30) | 10% | 4% |
| Occupational therapists | 8% (22) | 7% | 7% |
| Speech therapists | 4% (12) | 6% | Not available |
| Researchers | 5% (15) | 8% | Not available |
| Trainees/students | | 8% | Not available |
| Psychologists | 2% (5) | Not available | Not available |
| Orthoptists | 2% (6) | Not available | Not available |
| Social workers | 2% (5) | Not available | Not available |
| Healthcare managers | 1% (3) | Not available | Not available |
| Dieticians | <1% (1) | Not available | Not available |
| Stroke co-ordinators | >4% (10) | 4% | Not available |
| Stroke survivors | 4% (10) | Not available | Not available |
| Carers | | (1) | |
| Other professionals (e.g. commissioners, trial managers, researchers) | 4% (12) | | |
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Table 5. Attitudes of National Health Service respondents to acupuncture (Survey 2).

| Do you think acupuncture would be a useful addition to post-stroke care? | 46% (101) |
|-----------------------------------------------------------------------|-----------|
| Yes                                                                  | 46% (101) |
| Unsure                                                                | 50% (112) |
| No                                                                   | 4% (9)    |

| Have you ever referred a stroke survivor for acupuncture? | 88% (197) |
|----------------------------------------------------------|-----------|
| No                                                       | 88% (197) |
| Once                                                     | 4% (9)    |
| Regularly refer                                          | 2% (4)    |
| Provided in Trust                                        | 5% (10)   |
| Provided by GP                                           | 1% (3)    |

| Why did you refer? Reasons? | (19) 73% |
|-----------------------------|----------|
| Neurological pain           |          |
| Dysphagia                   | (2) 8%   |
| Depression/anxiety          | (1) 4%   |
| Motor impairment            | (9) 35%  |
| Sensory impairment          | (4) 15%  |
| Cognition/memory loss       | (1) 4%   |
| Sleep                       | (3) 12%  |
| Quality of life             | (4) 15%  |

| If you did not refer, what was the reason?² | 4% (7) |
|-------------------------------------------|-------|
| Do not believe acupuncture is a useful approach | 4% (7) |
| Do not know enough about acupuncture     | 52% (97) |
| Do not think there is strong enough evidence for its use | 23% (44) |
| Do not know how to refer to an acupuncturist | 21% (39) |
| Do not think it is safe                   | 0      |
| Never been asked by patients or carers about provision of acupuncture | 39% (74) |
| Otherb                                   | 17% (9) |

GP: general practitioner.

²Individual could give more than one response.

bOther included: service not available; not in scope of practice; do not know about evidence; do not know how to contact; not able to refer.

substantiate whether the integration of acupuncture into mainstream care would provide any cost savings to health service provision. The importance of timing and frequency of providing acupuncture has been highlighted in a recent review.²⁸ This is an area of practice that may benefit from expansion and support from professional associations to develop information and specialist training, as suggested by Yam and Wilkinson.²⁹ The positive interest from NHS respondents working in post-stroke and rehabilitation care at the Stroke Forum conference demonstrated enthusiasm to learn more about the use of acupuncture and its evidence base. Some Stroke Club co-ordinators were keen to have acupuncturists to come to talk to their group, subsequently emailing to request an acupuncturist to talk to them. Using Stroke Clubs could be a feasible recruitment strategy for future research.

Potentially interested groups, the barriers to using acupuncture as a treatment approach and a lack of knowledge about acupuncture research have been identified. This study could help to inform strategies for traditional acupuncturists working with post-acute stroke patients. Key priorities have been identified specifically for acupuncture provision in post-acute stroke rehabilitation, though the use of acupuncture in the future for acute stroke may be a possibility, as is the case in China and as has been suggested by the recent Cochrane review.
Knowledge of this current appetite for the use of acupuncture in post-acute stroke care in the United Kingdom, as evidenced by the positive responses from NHS stroke care professionals, could be used to enable clinicians, acupuncturists and policy makers explore potential treatment options. Further research should explore whether patients find acupuncture acceptable. A Canadian survey reported that 98% of stroke patients in rehabilitation wanted more knowledge and 87% were willing to consider acupuncture as part of their rehabilitation; lack of knowledge about the treatment was not a barrier to use. Education, training, research and collaboration between multidisciplinary groups should be strengthened to enable better and more patient focussed responses for stroke rehabilitation.

Undoubtedly more well designed, high quality RCTs are needed to demonstrate cost effectiveness before integrating acupuncture into routine medical care can become a reality.

Study limitations

This study has various limitations. First, the response rate to the surveys was low, but data suggested that the populations surveyed were representative and the findings were generalizable. Second, experience and attitudes of stroke patients and carers were not addressed, and may have provided a different view on the stroke care pathway and the problematic areas for patients that need to be addressed.

Conclusion

The three scoping surveys have provided information on the range of stakeholders, their attitudes to and perceptions of acupuncture, and how it is used for specific symptoms experienced by stroke survivors. There was interest in incorporating the use of acupuncture in post-stroke care, and it could be feasible to recruit to and carry out further studies in this area through the Stroke Association network, which could provide opportunities to carry out a future RCT in stroke rehabilitation.

As there is some research evidence underpinning the use of acupuncture for the treatment of stroke, and given that both acupuncturists and healthcare professionals surveyed in this study had some level of enthusiasm about the use of acupuncture, further research should be carried out in different clinical environments, and patients’ views regarding acceptability and effectiveness assessed. Acupuncture may have additional benefits for patients by providing a more personalised intervention. The opportunity for multidisciplinary team working should be facilitated.

Contributors

N.R. and D.S. conceptualised the project. N.R., D.S. and P.E.G. designed the study questions. T.Y. developed the survey interface and collated the data. N.R., P.R. and D.S. were involved in data collection. T.Y. and P.R. were involved in data analysis. All authors were involved in drafting the article, approved the final version of the manuscript accepted for publication and have agreed to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

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