

# Acupuncture and Schizophrenia – Effect and Acceptability:

## Preliminary results of the first UK study

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### **Introduction**

After several years of planning, we have just completed the intervention phase of a small, pre-clinical pilot study to explore the acceptability and effects of acupuncture in the treatment of schizophrenia. The study was carried out in a primary care setting in an inner city setting. It was facilitated by GPs and mental health workers, who helped recruit participants and provided rooms for the research, and highlights a successful collaboration between acupuncture practitioners and academics.

Anecdotal observations and preliminary indications from the statistical data are positive. The qualitative data have yet to be analysed and triangulated alongside the quantitative data. Additionally, these data will be compared with another mixed methods study concurrently being conducted by Peggy Bosch in Germany, and a recent service evaluation from Walsall (Rogers 2009), both of which share two of the same research tools. This article outlines the research question and methods used in this study, and offers a glimmer of the outcomes so far.

## Background Information

Schizophrenia is a severe and debilitating condition that affects around 1% of the population (McGrath, 2005). Its prevalence is set to increase, as it is associated with urbanisation and poverty (Pedersen and Mortensen, 2001; Peen and Decker, 1997). The condition leads to poverty (Lewis et al, 1992), social isolation, poor physical health (Lambert et al, 2003), self harm and suicide (Pompili et al, 2007). The onset of schizophrenia usually commences in early adult life, affecting most patients for the rest of their lives. The mainstay of treatment is antipsychotic medication, with some emerging research showing that treatment with psychological therapies may be useful in the early stages (Dyer & McGuinness, 2008; Lewis et al, 2006; Ross and Read, 2004).

Current treatment for schizophrenia is limited and unsatisfactory, and there is a demand for complementary approaches that might improve outcomes (Rampes, 2004). There is some evidence available to support the use of acupuncture in schizophrenia (see Soo Lee et al, 2009; Harbinson & Ronan, 2006; Smith, 1993; Ben et al, 1993). However, most of the research has been carried out in China and it is unknown to what extent the findings might be replicated in Western countries, including the UK. Moreover, it is unclear what effects might best be measured or how acupuncture might best be administered in the UK (Harbinson & Rona, 2006).

Acupuncture is rarely available in the NHS. People with schizophrenia can rarely afford private treatment. It is unknown whether acupuncture will be culturally acceptable in the UK for the treatment of schizophrenia (eg, Cardini et al, 2005). Encouragingly, acupuncture was recently approved as a treatment of choice for low back pain by NICE (NICE, 2009). There is clearly a need for exploration of complementary medicine to improve outcomes for people with schizophrenia who have not had satisfactory results from normal treatment because their symptoms have not fully remitted and/or because they suffer from side effects of antipsychotic medication. There are many questions raised by studies already conducted including how a large scale controlled study might best be designed in the UK. In order to achieve this, this study was designed to gain a more in-depth understanding of how acupuncture could address the problems experienced by people with schizophrenia and its acceptability, in order to inform a high quality RCT or complex intervention study. A case study approach is ideal for such an investigation and has the flexibility to address questions that have arisen in reviewing the evidence, as well as those that may arise during the study (Creswell, 2007; Yin, 2003).

## Methods

A pre-clinical pilot study examining the effect of acupuncture on eleven participants diagnosed with schizophrenia, utilising both an exploratory and an instrumental case study approach (Stake, 1995; Jones, 2004; Bergen and While, 2000) was carried out. A variety of methods were used to collect and examine in-depth information on this population, and the effect of

using acupuncture over an intervention period of ten weeks. Participants were identified, the study was explained to them and they were asked if they were willing to participate. Acupuncture treatment was provided twice a week for ten weeks on an individual basis. The study was drawn up in line with the Medical Research Council (MRC) framework for complex interventions (MRC, 2000) as a small in-depth study (pre-clinical phase) in order to identify possible outcomes and modifiers to inform future studies. Data collection methods included:

Qualitative Interviews to explore issues around their quality of life and experience of acupuncture before and after treatment; Positive and Negative Syndrome Scale (PANSS) (Kay et al, 1989 and 2000); Schizophrenia Quality of Life Questionnaire (SQLS) (Martin and Allan, 2007; Wilkinson et al, 2000); Pittsburgh Sleep Quality Index (PSQI) (Buysse, Reynolds III et al, 1989); Unstructured Observation of Acupuncture Treatment to confirm or challenge data being collected elsewhere in the study (Watson and Whyte, 2006); Examination of Mental Health and GP clinical notes; Acupuncture Notes: modified protocol, based on the Standards for Reporting Interventions in Controlled Trials of Acupuncture (STRICTA) guidelines (MacPherson et al, 2002; MacPherson et al, 2001).

## Intervention

In addition to standard care, participants received individual assessment and treatment with acupuncture, using the traditional Chinese medicine approach. This included an initial assessment, followed by twice weekly treatment sessions, each lasting 45 – 60 minutes, for ten weeks. The acupuncture was administered by three trained acupuncturists, registered with the British Acupuncture Council (BACC) and all of whom had some previous experience of working within mental health. The research team made contact with the patient's treating doctor or keyworker in order to appraise them of the treatment approach, to ask them to note any significant changes, and to identify any potential risks or reasons for withdrawal from the study.

## Patient Selection

Of those who were eligible and invited to take part in the study, eleven participants agreed. All were fluent in English and literate and gave informed consent to participate. They were aged between 18 and 65 and had been diagnosed with schizophrenia (ICD10 – F20-25). They had not had complete remission of symptoms despite treatment, and/or they suffered from side-effects of antipsychotic medication. The sample was representative of the local population and gender in terms of demographics of people with this diagnosis. The study was reviewed by the Joint South London and Maudsley and The Institute of Psychiatry NHS Research Ethics Committee. Ref: 09/H0807/60

## Results

Eleven participants were recruited to the study. Eight participants completed the treatment phase as well as all sets of data collection. One completed the treatment phase, but was lost to

follow up. One withdrew after six treatments because he found the needles too painful. One relapsed near the completion of the treatment phase and, although he agreed to complete a final interview, he was not well enough to do so. There are eight complete sets of data. Incomplete sets of data are included in the qualitative analysis. This may provide clues as to potential reasons for drop out and, for those participants who did not complete the study, indications as to whether acupuncture helped at all, if it was acceptable as a treatment and whether there were any common features in their experience.

**Figure 1: Flow chart to illustrate the participant experience of this study**

<b>Recruitment and Preparation</b>					
Information to clinicians and patients	Clinicians approach patients	Patients meet with researcher	Further information given to patient		Time to consent (min.1 week)
<b>Data Collection Phase 1 – Week 1 (1st Baseline)</b>					
PANSS Interview Carer/Clinician	PANSS Examination of MH Case Notes	Qualitative interview	SQLS	PSQI	PANSS Interview
<b>Data Collection Phase 1 – Week 5 (2nd Baseline)</b>					
PANSS Interview Carer/Clinician	PANSS Examination of MH Case Notes	Qualitative interview	SQLS	PSQI	PANSS Interview
<b>Data Collection Phase 2 – Weeks 6-16</b>					
Acupuncture Assessment	First Acupuncture Treatment	Acupuncture treatment twice weekly	Researcher observes => 2 treatments randomly selected		
<b>Data Collection Phase 3 – Week 17</b>					
PANSS Interview Carer/Clinician	PANSS Examination of MH Case Notes	Qualitative interview	SQLS	PSQI	PANSS Interview

**Inclusion Criteria:**

- 18-65 years
- Diagnosis of schizophrenia
- Able to provide:
  - informed consent
  - understand, read and write English
  - articulate own perceptions of symptoms and side-effects

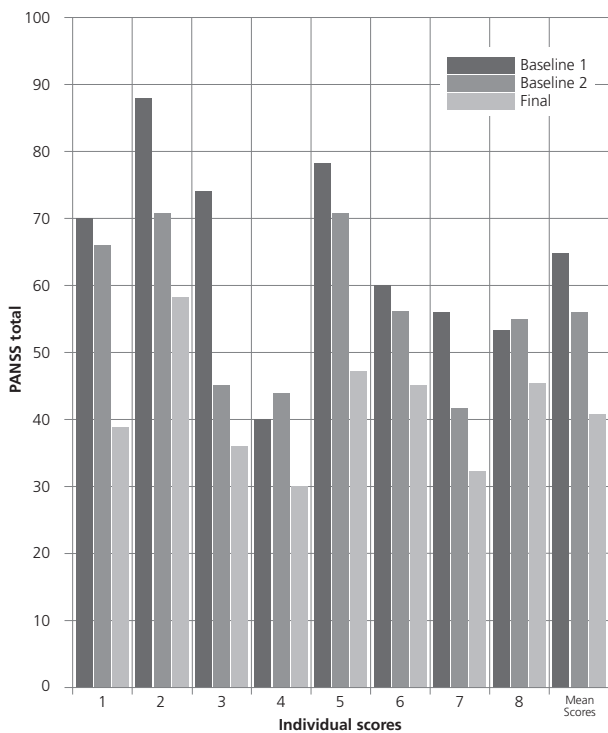
**Exclusion Criteria:**

- Schizophrenia = secondary diagnosis
- Acutely psychotic
- Concerns about needles/Needle phobia
- Learning disabilities

**Quantitative Data**

**Positive and Negative Syndrome Scale (PANSS)**

**Figure 1**



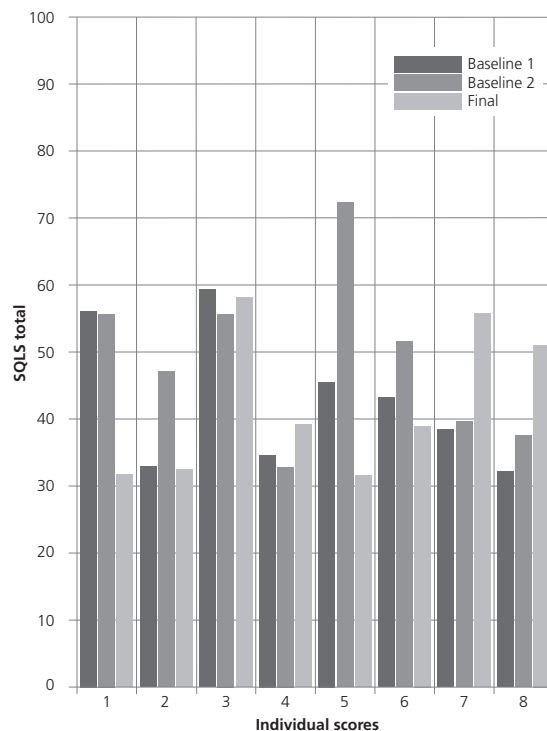
PANSS is an assessment process that includes examination of mental health case notes and structured interviews with the participant and an identified carer or clinician in order to identify and measure symptom severity and quality of life. Findings are matched to identified criteria and definitions according to a 7-point scale, 1 being equal to 'absent' and 7 being equal to extreme. It has well established reliability and validity (Kay et al, 1989 and 2000).

The PANSS Institute advise that the Total Score (or T-scores) are the most helpful when comparing a small number of participants. This is an overall indication of the extent of a patient's symptoms in comparison to 240 medicated patients with a diagnosis of schizophrenia. A guide is that the average T-score is 50, with a standard deviation of 10. Scores above 70 are very much above average (worse off in terms of symptoms); scores between 66-70 are much above average; between 61-65 above average; 56-61 slightly above average; and so on. This is not a definitive guide and the Institute advises that individual scores are also examined (Kay et al, 2000). This will be carried out as part of the analysis. Figure 1 above, indicates that the average Baseline PANSS T- score for the eight participants who completed the study was 68.

This fell to a final average score of 38, representing a mean fall of 44% to a below average score. These scores need further statistical testing and triangulation with the qualitative data. Initial testing of significance in terms of Probability or P values is positive.

**Schizophrenia Quality of Life Questionnaire (SQLS)**

**Figure 2**

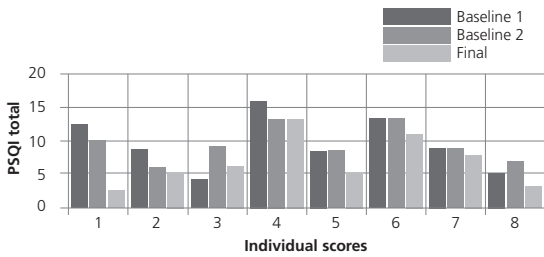


The SQLS is a self-reporting questionnaire that employs a 5-point Likert Scale (Never, Rarely, Sometimes, Often, Always) to obtain answers to 30 short questions about the side effects experienced from antipsychotic medication and quality of life issues such as smoking, exercise and levels of motivation. It has been shown to have good reliability and validity in a number of studies (Martin and Allan, 2007; Wilkinson et al, 2000).

Figure 2 illustrates the individual overall scores for SQLS. The total score is out of 100, with a high score representing a poor quality of life and vice versa. The mean score was 56.25 falling to 51.67, representing an average improvement of 8% for participants. This suggests that there was no significant change in terms of quality of life or side effects of antipsychotic medication, although the qualitative data appear to indicate otherwise (see below). These scores also need further testing and will be included in triangulation.

**Pittsburgh Sleep Quality Index (PSQI)**

**Figure 3**



The PSQI is a self-rated questionnaire that assesses sleep quality, latency (the amount of time it takes to go to sleep), duration, habitual efficiency, disturbance, medication use and daytime dysfunction resulting from poor sleep over the previous month. It takes 5-10 minutes to complete and asks respondents to quantify various aspects of their sleep, such as the number of minutes it takes to fall asleep at night (Buysse, Reynolds III et al, 1989). It has been shown to have good reliability and validity in a number of studies (Buysse et al, 1989; Grandner et al, 2006; Carpenter & Andrykowski, 1998; Gentili et al, 1995).

Figure 3 shows that the average baseline T-score for the PSQI was 9.44, and the final score was 6.88, indicating a mean improvement of 27% in sleep for all participants. Preliminary statistical examination of these scores indicates some significance in terms of P values, but further work needs to be carried out.

**Figure 4**

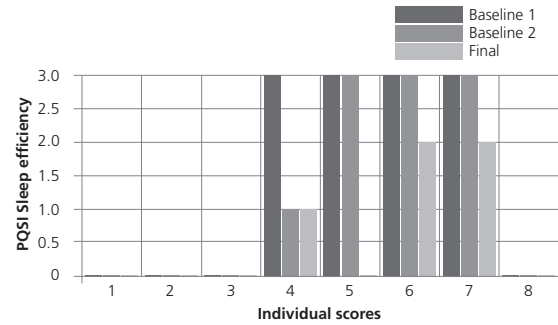


Figure 4 represents data on Sleep Efficiency for all participants. Where there appears to be no data for some participants, their score for sleep efficiency was above 85%. This means that they were asleep for more than 85% of the time they were in bed. Four of the participants had problems with sleep efficiency, spending up to 17 hours a day in bed. The average baseline score for these participants was 2.75. This fell to 1.25, representing a mean fall of 55% for these four participants. Most notably, participant no. 5's score fell from 3 (sleep efficiency of less than 65%) to 0. This participant was unable to get up because he was so distracted by his voices. Again, these scores are subject to further statistical analysis.

All participants reported improvements in sleep and less fatigue, including those who did not complete the final interviews.

It is interesting that the participant who withdrew from the study because of needle pain called several weeks later to say that he noticed he was feeling increasingly tired since the acupuncture stopped, and was sleeping again in the afternoon. He reported that these symptoms had been present before the treatment began and had disappeared during the intervention phase. At the time, he had been sceptical about acupuncture and did not think it was having any effect. Only when these symptoms recurred did he realise that treatment had helped with his tiredness.

**Acupuncture Treatment**

None of the three acupuncturists who delivered treatment for the study were specialists in the mental health field, nor were we familiar with the assessment tools that were being applied. We were to all intents and purposes ‘common or garden acupuncturists’ confronted in a modern health centre with a youngish client group who received treatment for free twice a week. Attendance was far better than we had initially expected, and it was a real delight to be able to give treatment so frequently and for free.

We set out to offer individualised treatment, as is our normal practice, and it was interesting that the participants were clear from the outset what they wanted treatment for, even though many of them knew little about acupuncture or how it could help. Anxiety was what featured most strongly, followed by pain of various sorts, and then (in no particular order) concerns about sleep, tiredness, lack of motivation, hallucinations, and weight gain. We were free to respond to changes in a patient’s presentation or priorities, so that they got the benefit of having old injuries, acute conditions (colds and flu mostly) or newly emerging problems treated. So for example, if a patient who initially declared that she wanted treatment for anxiety and stress, arrived complaining of abdominal pain and tightness at the shoulders, we would tend to treat the presenting complaint on the understanding that it was, to some extent at least, a manifestation of the constant anxiety and stress she experienced and that relieving it would contribute to a lessening of those non-physical symptoms. It was not rocket science, just normal practice.

The table below shows the syndromes which we diagnosed following the initial consultation with the patients who had been allocated to us (6 in column A, 5 in B). The researcher likes this table because it shows such disparate views of people who in Western medicine share the same diagnosis. We suspect, however, that for acupuncturists it will be less startling – these are not diagnoses of the same people after all. It is interesting to note the participants who were most afflicted by hallucination were all in the column B cohort (hence the strong showing for phlegm-fire harassing the mind). When, at the midpoint of the intervention phase, we had a meeting to discuss progress and share thoughts, it was clear how much convergence there was in terms of the type of treatment we were giving, and the points we were using.

**Table 1: TCM diagnosis**

Syndrome	D	W
Liver Depression <i>Qi</i> Stagnation	6	1
Heart Fire	1	
Heart-Kidney not Harmonised	2	
Stomach <i>Yin</i> & Spleen <i>Qi</i> Deficiency	1	
Spleen <i>Qi</i> Deficiency generating Dampness	2	1
Kidney Deficiency/Kidney <i>Qi</i> not Firm	1	1
Phlegm-Fire Harassing the Mind		4
Liver & Heart Blood Deficiency	2	1
Liver <i>Yang</i> Rising		2
Liver & Kidney <i>Yin</i> Deficiency		2
Kidney Failing to Receive <i>Qi</i>		1
Lung & Kidney Deficiency leading to Phlegm in the Lung		1
Local Stagnation of <i>Qi</i> & Blood	3	1

Each participant often had a number of co-existing syndromes and therefore a number of diagnoses that needed to be recorded alongside each other. Typically these included excess and deficient symptoms. Many of the participants were openly concerned about the voices that harassed them and expressed their dismay, frustration, etc. about having to cope with them on a regular basis. For this reason a diagnosis of phlegm – fire harassing the mind could easily coexist with mental-emotional symptoms – which manifested with symptoms of depletion or deficiency – and/or physiologically deficient conditions such as lung or kidney deficiency. This duality was also evident in the tongue and pulse analysis. Tongues often displayed signs of heat or stagnation, and yet pulses were frequently weak. Clearly medication has to be factored in here and it is difficult to accurately assess how much it affects tongue and pulse analysis. Side effects from medication were also included in the symptoms that participants reported as problems.

Fortunately because we were able to treat participants twice a week it did mean that points could be alternate. For instance, points on the front one day and points on the back later in the same week. This approach allowed us to treat the participants in a more comprehensive way than in the typical private arrangement which tends to allow for just once per week.

Because all of the participants had a considerable number of symptoms it was necessary to ask participants to focus on the areas that they found the most pressing, so that those symptoms could be addressed directly. As time progressed and it became evident that some symptoms were beginning to improve we could adjust our point selection accordingly.

Not being specialists, we have no special ‘tricks’ to report – the points we used and the treatments given were similar to those we use every day in our regular practices. Additional skills/ techniques were used where and when relevant. Apart from body acupuncture, other techniques used included: ear acupuncture, cupping, TDP lamp, relaxation tapes, and ear seeds – usually on the *shen men* and sympathetic points. After experiencing the ear seeds two of the participants requested them in subsequent treatments. One of the acupuncturists regularly played music or relaxation tapes during the treatments because it was felt this induced relaxation. Music was only played with consent; if participants preferred not to listen to anything, or if they preferred to talk then these requests were accommodated.

Nutritional advice was given where it was felt appropriate. One participant was drinking two litres of coke per day (and three coffees) at the start of the study. It was suggested that substituting water for some of the cola would be a worthwhile aim given that this participant had particular urinary problems. A compromise was reached and the urinary situation improved. In another case a salt pipe and lung tea were recommended for a participant who had severe lung problems.

Herbal teas of various sorts were dispensed occasionally (and met with some enthusiasm in most cases, even encouraging a couple of participants to begin exploring this concept as an alternative to the usual ‘English’ teabags).

Advice was also given, when we thought appropriate, in other areas, such as exercise, mental attitudes, breathing techniques, and even on dating (not that we are experts in that particular field!).



## Qualitative Data

### Emerging themes – Table 2: Preliminary analysis of the qualitative data reveals the following:

Before	After
<b>Energy</b>	
All of the participants reported feeling tired most or all of the time.	Increase in energy was reported by and/or noticeable in 8 of the 11 participants.
<b>Exercise</b>	
7 participants took little or no exercise.	9 participants increased the amount of exercise they took during the study.
<b>Diet and weight</b>	
Poor diet: * fast food takeaways and ready meals * fizzy drinks of various sorts * highly-sugared tea and/or coffee.	Reduced consumption of sweets, cakes, and sugary drinks.  2 participants began to cook for themselves.
<b>Weight</b>	
All unhappy about their weight. 10 wanted to lose weight. 1 wanted to gain weight.	Data for weight loss is not yet available. Some participants did lose weight, but for most it remained the same.
<b>Addictions</b>	
8 of the 11 participants smoked. 4 regularly drank heavily.	4 reduced their smoking significantly. 3 participants dramatically reduced their alcohol consumption.
<b>Social Engagement</b>	
Few social contacts. For most, social contact was limited to immediate family or a friend or two, or contact with psychiatric services.	Improvements in social engagement reported or noted in 8 of the 11 participants: * 7 increased informal social contacts, * 5 increased engagement in organised group activities * 4 applied for work training schemes * 9 reported reduction in social anxiety and/or increased confidence in social situations.
<b>Sex Drive</b>	
Only 1 participant has a partner. The remaining 10 appeared resigned to being single, or had lost confidence and/or their sex drive.	5 expressed an increased interest in having a relationship with the opposite sex, and more confidence in this respect, exploring methods of attracting a partner. 1 stopped having hallucinations about being raped. The participant who has a partner reported an increased sex drive and enjoyment of sex.
<b>Anxiety and paranoia</b>	
10 out of 11 reported feeling anxious. 10 out of 11 reported paranoia about people (aggression, being laughed at), limiting their social contact and the amount of friends that they had.	9 participants reported feeling less anxious (no follow-up data available on the other 2). Significant reductions in paranoia might be found for 3 participants but the data has yet to be confirmed.
<b>Hallucinations</b>	
6 participants reported auditory hallucinations, and 1 also reported visual hallucinations. For 4 of them this severely interfered with their daily life.	5 experienced significant reductions in hallucinations (1 was lost to follow-up). For 2 participants, the voices disappeared completely.
<b>Side effects of antipsychotic medication</b>	
Participants seemed to be reasonably well controlled on antipsychotic medication, but reported side-effects including tiredness, drooling, staring, grimacing, shaking or jerking, night time frequency of micturition, constipation, indigestion and vertigo.	Although the results from the SQLS are poor, in qualitative interviews, observations and to the acupuncturists all of the participants reported improvement or complete remission of side effects.

Data from the interviews and observations have yet to be analysed. However, there were some notable features and changes for participants that will need closer exploration during the analysis phase.

**Energy:** At the outset, all of the participants reported feeling tired most or all of the time. Increased energy levels were reported by and/or noticeable in eight of the eleven participants. Many started to get up earlier and began taking up new activities. For example, instead of staying in bed almost all day, they began to be up and about, visiting friends, taking part in classes, starting exercise programmes, etc. One participant's key worker reported how his punctuality and contribution to the groups he was attending had noticeably improved. He was now turning up on time and becoming an active contributor to group discussions and activities. Another participant, who reported that treatment had made no difference to her energy levels, started going to the gym three times a week. It could be seen that her complexion changed from being quite grey and wan to being more rosy and glowing; her posture improved and she walked with more spring in her step.

**Exercise:** At the outset, all but four of the participants reported that they took little or no exercise. Some were trying to exercise, but finding it difficult to motivate themselves and carrying out a minimal amount. During the intervention phase, all except two of the participants increased the amount of exercise they took. One began cycling to work every day, another going to the gym, another took up dance. Of those who did not increase their exercise, one was already exercising daily, but did report more energy. The other simply did not increase her activity because she was too busy with other things but she did report improved energy levels.

**Diet:** Almost without exception, participants subsisted on what can only be described as a poor diet, largely built around fast food takeaways and ready meals washed down with fizzy drinks of various sorts and/or highly-sugared tea and/or coffee (some reported drinking as many as 15 cups a day). Very few of them cooked at all. They often described eating only two small meals a day, but it was apparent that snacking on cakes and other sugary delights was rife, if considerably understated (by no means an unusual phenomenon).

Many of them made some dietary improvements during the study – eating fewer sweets or cakes, or drinking fewer sugary drinks. Two participants began to cook for themselves, using fresh ingredients, rather than heating things up in a microwave. In their final interviews, people talked about how much they had reduced their sugar intake, and said that they had been too embarrassed to admit at first how much they had been consuming; this was also true of alcohol and cigarettes (see below).

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**Weight:** Many of the participants reported feeling unhappy about their weight. All except one (who was trying to increase his weight after an illness) wanted to lose weight and get fit again. The data for weight loss is not yet available but although at least four participants did lose weight, for most it remained the same. Addictions: Smoking was clearly a deeply ingrained habit - all but three of the participants smoked. Four managed to reduce their smoking significantly; for one participant, consumption fell from 40 a day to three.

Four participants also regularly drank heavily during the week. Two of these admitted to smoking cannabis as well. One initially admitted to drinking eight cans of strong lager or cider (8.5%) a day, four days of the week. He stopped drinking almost completely during the study and in his final interview said that, prior to the acupuncture, he had actually been drinking in excess of eight cans of lager every day, starting first thing in the morning. A similar pattern – serious levels of intake every day – was true for the other three ‘drinkers’ in the cohort. Two dramatically reduced their consumption during the study, but unfortunately they both relapsed later following a heavy drinking session, and (for one of them) the use of hard drugs as well.

**Social Engagement:** Six of the eleven participants live alone, and many have few social contacts or engagements. Of the five who don’t live alone, only one has a partner; the other four (only one of whom was under 30 years of age) were still living with their parents.

With regards to employment, only one participant has a job, but he said he did not socialise with colleagues and tended to isolate himself at work. Two go to college; of these, one reported being quite sociable, the other preferred not to socialise at college or elsewhere. Two do volunteer work once a week and have occasional meals with friends. For the others, social contact was limited to immediate family or a friend or two, or contact with psychiatric services. One man limited his contact to his immediate family, and stayed in bed for most of the day. He would try and engage in activity groups organised by mental health services, but rarely managed to get there, and then would be late and find it hard to concentrate.

Eight of the eleven participants improved their social contacts, began to engage more actively in work or training, became less socially anxious, less worried about what others might think of them and more inclined to make social engagements and see them through (e.g. arranging to go out with friends for cocktails).

They increased activity and interest in work or training, with some beginning to plan how they might get back into work even on a voluntary basis. The man who works full-time is now applying for further training. The man who stayed in bed all day now gets up

by 10.30 am and is actively engaged in at least three groups as well as CBT. He has started playing football and his social anxiety has decreased.

**Sex Drive:** Only one participant has a partner. The remaining ten are single. Some of them expressed a wish to make a relationship at the beginning of the study. Over the course of treatment, this is a theme that emerged for many of them. One had already begun to join an internet dating site before treatment began. She began to talk to the acupuncturist about this and seemed a little more confident about her efforts during treatment. Others became more interested in sex, having a relationship and exploring methods of attracting a partner. It seemed that all of them wanted to be in a relationship, but had resigned themselves to being single, or had lost confidence and/or their sex drive. The participant who has a partner reported an increased sex drive and enjoyment of sex. This surprised her as she had never initiated sex before or enjoyed it. One participant had reported hallucinations of being raped every night. These disappeared by about Week 5 of the study.

**Anxiety, Hallucinations and Paranoia:** It was clear at the outset that anxiety features very largely in the lives of the participants, making it something of an ordeal for many to venture outside. Many cited it as a priority when asked how they would like the acupuncture to help. Most participants identified benefits in terms of feeling more relaxed and less anxious generally. For example, one participant who had identified anxiety as his priority for treatment said at the beginning of Week 3 of the study’s intervention phase ‘Anxiety? I haven’t got none.’ He said he used to need his friend to take him to the bus because he was too anxious to go on his own, but now he was fine going by himself. Though his anxiety was not magically made to vanish, it definitely seemed to have less hold over him, and at the beginning of Week 6 he reported that he was feeling ‘a warm glow of contentment, a feeling of content, of peace; no tension or anxiety.’ (It is also interesting to note that the two participants who were concomitantly undergoing CBT for anxiety both reported that the acupuncture had helped reinforce the CBT.)

At the outset, five participants reported hearing voices, which for four of them severely interfered with their daily life. One participant, for example, used to stay in bed arguing with the voices all the time. All of these participants reported having fewer or no hallucinations as a result of the acupuncture. The PANSS scores bear this out.

All participants tended to be mistrustful of people generally, with many reporting worries about being attacked in the street or robbed, but they live in a rough inner city area where such things are not inconceivable. (Interestingly, schizophrenia is associated with urbanisation (Pedersen & Mortensen, 2001).) However, for

many of them the main anxiety was about letting people get close to them. They seem to worry that if people got close to them they would be bullied, abused, jeered at or betrayed in some way.

As the study progressed we began to realise that most if not all of the participants (seven of the eleven at this preliminary stage of analysis) had suffered some violation or trauma during their childhood or early adulthood (e.g. violence in the home, rape, severe bullying at school etc.). In the light of this, we begin to question the extent to which the participants' presentations of anxiety and paranoia are rooted in childhood/adolescent experiences and reinforced by their every day living environment. If this is the case, how realistic is it to expect significant change? That said, the study does reveal some hopeful signs; it is worth noting that one participant, for example, who had been traumatised as a kid by bullying reported a definite reduction in anxiety and had even found the confidence to go and join a football club.

**Side Effects of Antipsychotic Medication:** All of the participants seemed to be reasonably well controlled on antipsychotic medication. Although the results from the SQLS are poor, many participants reported having fewer side effects, such as tiredness, drooling, staring, grimacing, shaking or jerking, constipation, indigestion and frequent nocturia.

## Discussion

**The Joys of Triangulation:** The study approach includes a myriad of ways to gather similar kinds of evidence. When it was designed, to a large extent, we thought we were gathering different kinds of evidence through the use of different methods. For example, the quantitative tools were included to find out about symptoms and side effects of schizophrenia and associated treatments, whilst the qualitative tools were designed to find out how people were living their lives and what was important to them or what might change in terms of their quality of life, diet, exercise and so on. The acupuncture tools (STRICTA) mixed both quantitative and qualitative methods for the purpose of conveying specific detail about TCM diagnosis and treatment. In fact our experience is that participants have told us similar or the same things through the use of each of the tools.

For example, participants have told us that they feel anxious a lot of the time, have not a lot of self-confidence, worry about their weight etc., and they've told us when these things have improved. They've told the researcher (a nurse), and the acupuncturists, the same things. And moreover they have tended to blur information and to be specific about information at similar time points in the study. So at the beginning they have been more vague and hidden more detail than they have at the end once they have become more comfortable with both the acupuncturists and the researcher.

The major strength of the research approach has to be our ability to confirm our findings because we are asking the same questions in different ways or participants are able to tell us things we're not asking about and we have been able to record it and compare. The downside is that there is a huge amount of data yet to be transcribed and fully analysed.

This triangulation also proved advantageous for the people carrying out the intervention as well as for the researcher. For example, the researcher would very often confirm, having observed a treatment, the acupuncturists' impressions of changes in the patient's bearing or presentation or symptoms. For people working on their own, and plagued by the perennial 'Am I making it all up?' doubt, these small reassurances can be very encouraging.

**Quantitative Tools:** The quantitative tools (PANSS, SQLS and PSQI) used presented their own quandaries.

The PANSS requires an interview with the participant's main carer or keyworker (someone with whom they have frequent contact and who can give an account of their presentation in the past week or fortnight). However, the majority of the participants lived on their own, shared minimal information with those with whom they did live, or who were close to them, and had quite infrequent contact with primary care of mental health services. Some carers refused to take part in the study, or simply did not return calls. The researcher managed to interview one keyworker who was responsible for four of the study's participants. This keyworker only had regular contact with one of the four; the other three were thought to be stable and neither asked for nor needed much input. This changed as the study proceeded and participants' motivation increased. They began to request support from her in terms of group, gym and training referrals, and to have more contact as their attendance improved.

Three participants had relatives who were happy to take part, albeit a little anxious about the effect that acupuncture might have. They were able to give general comments about the behaviour of the participants, (sleeping, lack of motivation and so on), but seemed to think that their relatives were functioning at a reasonable level. They seemed unaware of any anxiety, depression or hallucinations being present – symptoms the participants openly talked about in interviews. Advice was sought from the PANSS Institute, who could only advise us to get as much information from as many sources as possible, and to ensure, as we had planned, that the interviews were moderated.

The SQLS was chosen for its ability to give a quantitative indication of any changes in the quality of life and side effects of antipsychotic medication experienced by participants. Results from their scores indicate no significant changes in either of these domains. However, all other interviews and observations indicate otherwise. Further analysis will need to explore whether these

results need to be seen as a moderator for the positive outcomes found through other tools in the study, or whether the SQLS asked the wrong questions for this group.

The PSQI measures length and quality of sleep. Although the results of the PSQI are significant, the answers given on participants' questionnaires do not always reflect their true sleeping patterns. For example, one participant wrote that he went to bed at 4am, got up at 12noon and had nine hours sleep. This indicates a sleep efficiency of 112.5%! Moreover, on interview, the same participant said that he went to bed around 11pm, and did not get up until 4-6pm, sleeping until at least 2pm. In terms of PSQI, this indicates a sleep efficiency of 50%.

Needless to say, the analysis needs to be completed and participants will be asked to confirm the correct interpretation of their data as part of the process. Findings such as these bring into question the usefulness of questionnaires, and reinforce the utility of recorded interviews, where the researcher can make a more thorough exploration of what is actually happening.

**Relapses:** Unfortunately, one participant relapsed towards the end of the acupuncture treatment and another soon after its conclusion. Both participants had experienced remarkable improvements during the course of treatment. Both had significantly reduced their alcohol intake and the amount of time spent in bed, their sleep had improved, they had increased participation in activities, one had applied for training, both had increased their exercise, and one had managed to move house. It is not clear why they relapsed, however, one of them had been prescribed a reduced dose of antipsychotic medication and the other arbitrarily stopped taking it. Both were found to have been drinking heavily prior to the relapse, one had also taken drugs. Both became really paranoid about the acupuncture, expressing concerns that the acupuncture or the acupuncturist was in some way responsible for their relapse, and maybe to some extent that is true.

Both had suffered sexual trauma of some sort in the past and for one of them being treated by an acupuncturist of the opposite sex became an issue. Both are still recovering from the relapse and we hope, once their recovery is complete, to endeavour to find out what they think could have been done to support them better.

It is hard to find an account of people suffering a relapse during or after acupuncture treatment. Kane & DiScipio (1979) had one out of three cases who withdrew early in the study and was clearly unwell. Smith et al (1993) had enormous success, with only one participant being admitted to hospital for three days over seven years. The Chinese studies appear to be conducted in hospitals and report 'no response' but not 'relapse' during or subsequent to treatment (see Soo Lee et al, 2009). Our colleague, Neil Quinton, in Walsall, often talks about patients needing more

emotional support at some point during treatment, and suggests that it may on occasion be a positive or cathartic response (see Quinton et al, 2007). Some of the participants in our study, including one of those who relapsed, did talk about being more aware of their feelings and described this as a positive effect. Further analysis and confirmation may reveal more about this phenomenon.

### Conclusion

The analysis for our study has yet to be completed, but early indications are positive. Moreover, the intention of our work was not only to discover whether acupuncture might be helpful for schizophrenia, but how acceptable it is. Although the number of participants is small, the outcomes so far are telling us much about what is helpful to measure, what tools are useful and, where participants have problems with acupuncture, what these are. There are positive indications for improvements in quality of life, symptoms of schizophrenia and side effects of anti-psychotic medication (although not those measured by the SQLS). Of particular note are motivational and physical health improvements, especially tiredness, sleep and energy. What was surprising was the sudden increase in interest in being involved with normal activities of life, especially in relationships.

There are more questions to be addressed in the analysis, including acceptability, knowledge about acupuncture generally, and pain or fear of pain associated with the treatment. Future studies might consider alternatives to needles, such as cupping and moxibustion. Some of the participants began to investigate the possibilities of TCM during the study and requested such treatments, believing they might help improve the effect of the acupuncture, or serve as an alternative.

**The data for this study is presently undergoing analysis and will be made available in the coming year.**

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