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Running title: Acupuncture and fertility

Title Page

The extent of acupuncture practice for infertility in the UK: experiences and perceptions of the practitioners

Mark Bovey, MSc ^a

Ava Lorenc, PhD*^b

Nicola Robinson, PhD^b

Where the work was done:

Thames Valley University, Paragon House, Boston Manor Road, Brentford, Middlesex, TW8 9GA, UK

Department affiliations:

a. Centre for Complementary Healthcare and Integrated Medicine

b. Acupuncture Research Resource Centre

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Reprint requests:

Reprint requests: Ava Lorenc, Centre for Complementary healthcare and integrated medicine, Thames Valley University, Paragon House, Boston Manor Road, Brentford, Middlesex, TW8 9GA, UK (email: ava.lorenc@tvu.ac.uk)

Capsule

Acupuncture practitioners frequently see fertility related issues. Perceived main benefits of acupuncture are stress reduction and its holistic approach. Specific protocols do not conform with this holistic view.

Abstract

Objective: To investigate acupuncture practitioners' experience and perceptions of supporting patients presenting with fertility issues.

Design: Questionnaire survey

Setting: British Acupuncture Council

Patients: British Acupuncture Council acupuncture practitioners.

Intervention: Questionnaire designed for the study, by post and online

Main outcome measure: Questions on education/training, size and nature of practice, liaison with conventional care and perceptions about use of acupuncture for fertility issues

Results: Questionnaires were sent to 2580 practitioners. Of 861 responses, for 15% of practitioners supporting fertility issues constituted a large proportion of their case load. 80% of practitioners reported most fertility work was related to assisted conception. Over 60% had specialist training. Practitioners' perceived benefits included stress reduction, relaxation, regulation of menstrual cycle and emotional support. Emotional burden on both patients and practitioners was recognised as well as the limits of the therapy. Point specific acupuncture protocols were common (70%). Only 13% reported problems working with doctors. Use of acupuncture for male fertility issues was uncommon.

Conclusions: A minority of acupuncturists have become specialists in supporting fertility issues. The use of an acupuncture protocol is common but does not conform to traditional acupuncture as it is taught and also as it is practised for other conditions.

Key words

Acupuncture; practitioners; patient expectations; fertility; survey

Introduction

Acupuncture is commonly used in China as part of the treatment for male and female fertility and gynaecological conditions such as menstrual disorders (1). In Western countries gynaecological and andrological complaints are less prominent in national acupuncture patient profiles compared with musculoskeletal pain (2). This changed markedly after a publication which demonstrated that Chinese acupuncture added to Assisted Reproductive Therapy (in vitro fertilisation (IVF) or intracytoplasmic sperm injection (ICSI)) significantly improved pregnancy rates (3).

Meta-analysis of seven clinical trials on acupuncture used to support IVF concluded that it improved rates of pregnancy (4). These trials, published since 2002 included data on 1366 women. Acupuncture given within one day of embryo transfer was compared either with sham acupuncture or no additional treatment. Women having acupuncture were 65% more likely to have a successful embryo transfer procedure and 91% more likely to have a live birth.

Cheong et al's (5) systematic review (SR) determined that acupuncture (given on the day of embryo transfer) may be beneficial for live birth rate (odds ratio 1.89) whereas El-Toukhy et al (6) concluded that there was insufficient evidence. A study from Hong Kong (7) reported sham outperformed verum but there was no non-acupuncture group and the sham itself appeared to be an active intervention.

Observational studies in China indicated acupuncture may help to normalise menstrual cycles and stimulate ovulation (8-15). In the West there have been similar results for women with polycystic ovarian syndrome (PCOS) and amen-/oligomenorrhoea (16). Several studies have

also recorded changes in hormone profiles and suggested possible physiological mechanisms (10,16-20).

There are few controlled trials on the use of acupuncture to improve natural fertility. Gerhard and Postneek (21) found similar pregnancy rates for acupuncture compared with best orthodox treatment, but with significantly fewer side-effects in the former. Acupuncture has delivered significantly better pregnancy outcomes than Western drugs in Chinese studies (22-25).

Acupuncture research on male factor infertility has focused almost entirely on sperm abnormalities. Improvements in sperm quality after using acupuncture have been noted in several controlled trials (26-28), though sample sizes are small. Recently acupuncture was found to increase sperm output in individuals with inflamed genital tracts and high scrotal temperatures (29).

There are two small qualitative accounts of patients' experience of acupuncture as a therapy for fertility, one of which also included practitioner feedback (30,31). Increasing demand for acupuncture treatment for fertility-related issues (31), the evidence of increasing specialisation of acupuncturists in gynaecology and obstetrics, and the efficacy from existing studies, the British Acupuncture Council (BAcC) decided to fund a project in this area. The BAcC is a professional register of traditional acupuncturists mainly in the UK. Entry to the register is determined by completion of a course of study approved by an independent body, the British Acupuncture Accreditation board. The aim of this study was to explore acupuncturists' experience of treating fertility and their related issues within clinical practice.

Materials and Methods

With the approval of BAAC, all BAAC members (n= 2580) were asked to complete a questionnaire on their education/training, size and nature of practice, liaison with conventional care and perceptions about use of acupuncture for fertility issues. Open questions allowed the collection of qualitative data. The questionnaire was inserted into the June 2007 edition of the Acupuncturist (a journal sent to all members). The pack contained a pre paid envelope. Instructions were also provided for those members who wished to complete the survey on line using Survey Monkey, an electronic data collection tool. All postal questionnaire replies were added to the database. Reminders were sent in August 2007 and October 2007. The survey was closed at the end of December 2007.

Quantitative data were analysed using SPSS. Univariate descriptive statistics were calculated for interval/ratio variables and frequencies and percentages for categorical data. Bivariate analyses were used to examine the effects of other variables on the numbers of new fertility patients recruited in the previous year. Spearman correlation coefficients were calculated for interval/ratio variables and either Student's t-test or a one-way analysis of variance used for categorical variables. The diverse qualitative data obtained from practitioners' responses to 11 questions were content analysed and grouped into themes for further analysis. Atlas.ti software was used to facilitate the labelling and retrieval of quotes.

Results

Respondents' characteristics

A total of 861 acupuncturists replied, a response rate of 33%. Of the respondents, 73% were female with an average of 11 years in practice . The mean number of patients per week for any condition was 20.5, but 85% of practitioners saw between 1-20 patients per week and only 15% more than 20. A variety of different traditional styles of acupuncture were represented; Traditional Chinese Medicine (TCM), Five Element predominated, 32% also prescribed herbs.

The size and nature of fertility-related practice

The mean numbers of new infertility patients per practitioner per year were 15 women and 2 men, (median values were 6 and 0 respectively). Distributions were highly skewed: 17 practitioners (2.0%) treated more than 100 new infertility patients per year, 3 practitioners saw in excess of 750. For 71% of respondents, fertility patients constituted a small or insignificant part of their practice, for 15% they were a large proportion or most of their practice. Sixty (7.2%) practitioners reported that 50 or more new fertility patients were treated in the previous year with 17 (2.0%) treating more than 100. Three practitioners saw in excess of 750 such patients per year.

TCM-style practitioners saw significantly ($p=0.033$) larger numbers of female fertility patients than practitioners using other acupuncture styles; there was no such difference for male patients. There were no significant differences in numbers of fertility patients (male or female) in respect of practitioner gender or practice location .

The most common symptoms and medical conditions related to infertility were irregular cycles, polycystic ovaries and endometriosis (for women) and abnormal sperm (for men). Medically unexplained infertility was high for both men and women. Practitioners felt acupuncture was most suitable for problematic menstrual cycles (25.1%), unexplained infertility (21.2%), stress (16.2%) and IVF (15.4%), but 26.4% felt it was suitable for most fertility issues. Nearly 80% of practitioners reported that a substantial proportion of their fertility work was related to assisted conception. A set protocol with predetermined points around the time period of egg collection and/or embryo transfer was used by 70% (419/596). The Paulus protocol was most popular (3).

Perceived advantages and benefits of using acupuncture for fertility problems

Content analysis of qualitative responses on the benefits and advantages of using acupuncture for fertility issues identified various main themes (Table 1). A total of 683 (79%) practitioners answered this question, some providing more than one answer.

Stress and relaxation

Nearly a fifth of practitioners perceived that acupuncture helped by reducing stress levels and inducing relaxation.

‘Acupuncture by its very nature will help patients to relax and stabilize their emotional state – which can be an underlying cause in fertility’

‘Western fertility treatment is a stressful period, which may reduce the likelihood of conception. Acupuncture can help to manage the anxiety, get the body and mind more receptive to conception’

Holistic

The holistic nature of the approach was emphasised by 17% of respondents, reporting physical, mental and emotional aspects, treated underlying causes, balanced energy and improved general health as well as fertility.

'A therapeutic relationship in the context of fertility and a holistic approach. It[fertility] is an area where most biomedical care is very production line oriented, and not attuned to any nuance in what couples might want help with'

'[acupuncture] Can be used as a natural method of increasing fertility through strengthening meridian and energy movement, balancing the whole body before pregnancy'

Acupuncture perceived as effective

For 12% of practitioners a major advantage of acupuncture was its effectiveness for fertility, particularly 'unexplained' fertility, and maximizing IVF success.

'It gives women the extra % of success that they need in an area where results are not always easy to achieve with a medically assisted approach alone'

'It can work when other therapies have not'

'It can be highly effective especially in treating medically unexplained cases of infertility'

'I think bringing stress levels down and giving them space to talk is half the battle – the main benefit though is the high success rate'

Menstrual regulation

Acupuncture was seen as effective for menstrual cycle/hormonal regulation in women with or without infertility.

'Increase follicle stimulation/ovulation, regulate cycle, reduce dysmenorrhoea, promote period'

'Return to healthier uterus/ovary/cycle and support better hormonal balance.'

Support for patients

Nearly 10% of acupuncturists reported that patients were emotionally supported by acupuncture , perhaps related to patient-practitioner relationship .

'Emotionally supportive especially if undergoing IVF'

'Dealing with the emotional stress caused by fertility issues'

'Recent feedback (in my practice) indicated ALL find emotional support invaluable and the talking aspect'

Patient empowerment was highlighted by 8.2% of practitioners, who considered it an essential part of the therapy in addition to establishing a good rapport with the patient.

'Empowerment of the patient is central; by dialogue, keeping temperature charts, doing self-examination, etc.'

'Helps them to relax and feel able to cope with everything'

Reduced side effects

Eight percent of practitioners said acupuncture was regarded by patients as natural, safe and with few/no side effects.

'Main advantage is the lack of side effects that accompany western drugs'

'Safe and natural option for people to enhance their fertility or to support assisted conception'

Works alongside conventional medicine

Some practitioners (5.6%) noted that acupuncture is successfully used in parallel with conventional medicine.

'Can help where sometimes orthodox treatments have been unsuccessful. Works alongside orthodox treatments'

'Acupuncture can also be used effectively alongside conventional medical interventions e.g. clomid for ovulatory stimulation or IVF cycles to help women balance their bodies'

Perceived concerns about acupuncture treatment for fertility

In an open ended question about concerns regarding acupuncture for fertility, over a quarter of 617 respondents reported not experiencing a problem. The remainder described various issues (Table 2).

High expectations

The most commonly perceived problem was high patient expectation, which was sometimes felt to be *'unrealistic'*, patients putting too much hope on acupuncture as *'magic'* or a

'miracle'. Many described 'false hopes', where in this 'culture of prolonged fertility, patients expect to be able to conceive regardless of age or other health issues.'

'some put a lot more hope into acupuncture than they really should'

'Unrealistic expectations of patients, or treating absolutely desperate people who are terribly anxious. You can be made into a god !'

'Patients might look on acupuncture as their 'saviour' therefore acupuncturists need to be realistic in helping their patients'

Acupuncturists felt that such high expectations may originate from promises of IVF, as well as the desperation of patients for whom *'all hopes are pinned'* on acupuncture.

Acupuncturists reported having to be able to: *'manage'* the high expectations and be clear and realistic; explain and educate; not to offer *'false hope'* nor *'to give them unrealistic expectation'* in guaranteeing pregnancy and recognise certain people/conditions cannot be treated. *'They [acupuncturists] need to act responsibly, because these patients are very vulnerable and need to know the truth about treatment'*.

Working with conventional medicine

Problems working alongside conventional medicine were identified by 81 respondents (Table 2). This included lack of support or approval from healthcare practitioners, who were described as *'cynical', 'hostile', 'apathetic'* and *'disapproving'*, with a *'lack of understanding of, or interest in acupuncture'* and that *'they don't recommend acupuncture enough'*. They experienced *'Negative reactions from closed minded medics committed to high tech/invasive treatments'*

Lack of communication and liaison with conventional medical practitioners was also reported, though some reported dialogue.

'Some GP are responsive to feedback about their patients receiving acupuncture treatment. Most are not accessible. The nurses in the fertility centre near my practice are responsive but the consultants are not.'

'I have referred patients for ultrasound or a screened cycle with -----, who are used to working with complementary therapists. Then I have had useful communication. I routinely write to patients' GPs, or their consultants if appropriate.'

Some practitioners appeared to inform the doctor or midwife about patients' acupuncture treatment or encouraged the patient to do so, or left it to the patient's discretion.

'After discussing it with the patient at some length I communicate with medical colleagues if the patient wishes me to do that'

'I ask the patient to inform their consultant/clinic that they are having acupuncture. I am starting to routinely write to the GP but haven't always done so in the past.'

'I always suggest to the patient that they inform their GP/specialist/midwife and also enquire of the patient if they would like me to get in touch myself. All have said the doctor generally encourages them to "try it", so it's an open forum at any rate.'

'I ask the client to inform the clinic re: acupuncture. I always keep abreast of the treatment the client is receiving. Patients have come in confidence and don't wish treatment to be divulged.'

Acupuncturists recognised the need to understand conventional treatment, keep up with the latest procedures and use diagnostic results. *‘Important for practitioners to understand the benefits of biomedical investigations – and the importance of having some data perhaps before beginning – is it ethical to treat a woman week after week if she has an FSH of 16 or 17’*. Some were concerned about the effects of strong fertility drugs and how they could best support patients *‘fighting against the cold and stagnation of the drugs and hormones given by Western doctors’*.

They feared that working with conventional medicine could lead traditional acupuncture into a standardised, subsidiary role. *‘Western medical paradigm is so dominant here that acupuncture can get hemmed in – becoming just an adjunct to it and the acupuncturist seen as a technician’*; *‘acupuncture could get watered down to standardised prescriptions for all IVF protocols’*.

Of 733 acupuncturists 4 % worked in fertility clinics, 5 % regularly informed health care practitioners about acupuncture treatment, 16 % had tried to work with medical colleagues but had had no response and 28 % had received some response. 56% had not tried to liaise at all.

Emotional issues

Infertility treatment was perceived as highly emotional for patients: acupuncturists needed counselling and support skills:

The emotional burden and the possibility of burn-out could be reduced by practitioners *‘keeping their emotional boundaries’* and *‘not getting emotionally involved’*.

“highly charged emotional patients to support”

“emotional roller coaster, needs careful support”

“it is an emotional journey for patient and practitioner – feeling secure our decisions regarding treatment really help”

Education

Acupuncturists recognized the need for specialist up-to-date knowledge, on both conventional and Chinese medicine, psychological issues/counselling skills and awareness of research.

Postgraduate training for 62% was through courses run by practitioners perceived as experts in the field.

‘steep learning curve in different techniques of fertility medicine’

‘lack of proper training in this area and lack of recognition of specialisation equals danger and misleading to public’

‘need to have a general knowledge of western diagnoses and physiology’

‘Limited knowledge of western “IVF process” and other western medical procedures that the patient may be undergoing’

IVF

Compared with natural fertility treatment, acupuncture was seen to emphasise the difficulties specialist training needs: *‘patients tend to be very clued up on their assisted conception treatments and so acupuncturists in this area need to have in depth specialist knowledge to gain credibility and trust’*.

IVF posed particular problems - the practitioner has to be available , flexible and aware of drug-acupuncture-herb interactions.

'can't tell whether it's acupuncture or IVF, or both is having an effect'

'having to be careful not to affect the success of IVF'.

'I am concerned with unknown reactions between fertility drugs and herbs with acupuncture'

'I have heard of the possibility of over-stimulating the ovaries during assisted conception treatments'

Some viewed assisted conception as unnatural and unethical and pushing acupuncture away from traditional, holistic practice: *'I think down-regulation by drugs contradicts the acupuncture role of enhancing homeostasis.'* Formulaic practice was opposed: *'If we are to be successful in our treatment of fertility then we should strive to maintain individuality of treatment, which is an integral part of Chinese medicine, and defend the importance of this treatment method in our reasoning'.*

Possible blame and even litigation in the event of conception failure were also an issue: *'if IVF goes badly they worry it was the "fault" of acupuncture'*

Time and money

Many recognized that the time required for acupuncture was a problem Some patients cannot afford to continue, or have insufficient time for acupuncture before starting IVF.

'[patients get] frustrated/disheartened/don't trust the acupuncturist'

'Older patients (over 40) have limited time for treatment'

'Often patients will enquire about acupuncture intervention with only 2 -3 weeks before they embark on conventional fertility treatment....insufficient time really.'

'Patients [have] to have treatment months before trying to conceive in order to restore their energy to the maximum before conception'.

Limitations/Acupuncture not enough by itself

Practitioners commented on the need to recognise the limits of therapy, inform patients, refer on/ stop treatment if appropriate. Medical intervention was mentioned, especially for PCOS, abortion damage, endometriosis or blocked tubes.

'need to be aware of our limitations especially regarding women over 40 to know when to stop treatment and not offer false hope'

'I find it much more effective when combined with Chinese herbs; worried that acupuncture alone not enough for these people'

'depending on the patient's age I'm careful to refer on for conventional treatment after 6 months (responsibility)'

However, it is not always clear to practitioners when to stop/ refer on: *'when do we call it a day?', 'don't always know when it's not working'*.

Practitioners (74%) felt that patients need to change their diet, alcohol and weight, and 30% stressed the importance of advising on methods to reduce stress, drugs and smoking.

'It's very individual. It depends on so many factors such as timing, age, rapport, ability to take on board lifestyle and nutritional changes, ability to pay for enough sessions to get results'

All-or-none outcomes

The main focus is usually on pregnancy and there may be no ongoing indication of progress.

'Positive changes occur in fertility treatment but difficult to get focus away from pregnant/not pregnant in some people'.

No pregnancy easily leads to a label of failure, termination of treatment and possible blame.

Patient information

Practitioners found patients were knowledgeable about conventional fertility treatment but often lacked understanding about important aspects of acupuncture, especially the length of the course of treatments needed and the benefits of using acupuncture alone, without IVF.

Discussion

This is the first large survey of acupuncturists' views on treating fertility problems, comprising a third of the membership BAcC traditional UK acupuncturists. The sample reflects the preponderance of female members in the BAcC (73%vs 66% respectively) and average years in practice (11 vs 12) (33). It is likely that response was higher from members with a particular interest in fertility .

Most practitioners saw only a few fertility patients as part of their regular caseload. For a minority these patients had become a speciality, and were a substantial proportion of their practice. This is a new development for a UK profession with no formal system of specialist postgraduate training/certification . Most acupuncturists in Western countries are general practitioners. Hence there is a debate within the profession about the extent, nature and provision of specialist fertility training, and under what circumstances it may become a formal requirement for practice.

More than 60% of respondents had post-qualification acupuncture and fertility training, but opinion varied whether this was essential. Some questioned whether practitioners without such training should work in this area at all; others believed that over-specialisation could detract from the holistic nature and longer-term effectiveness of the treatment. There are increasing numbers of courses and some networks of special-interest practitioners in the UK. North America has an organisation that approves training courses and examines and registers practitioners as specialists in oriental reproductive medicine (34).

Education was perceived as necessary to keep up to date with the latest medical interventions and Chinese medicine approaches for fertility in more depth than in undergraduate courses.. Counselling and interpersonal skills were largely seen as part of the normal competencies of traditional acupuncturists. Large numbers of practitioners did not consider that treating infertile patients posed any particular problems (over and above those with any other presenting condition). A few said that it was a happy and rewarding experience; others confessed the emotional and expectational burden was overwhelming.

The bulk of patients presenting for fertility treatment combine acupuncture with conventional assisted conception. Interestingly, the IVF: Paulus protocol was used by many practitioners despite their traditional background and the lack of evidence to support this approach over and above others (3). This protocol is based in Traditional Chinese Medicine practices but employs a fixed formula of points rather than an individualised approach. Some practitioners used it as a starting point, to be amended as suited each patient. Those working in conventional fertility centres may have to use a fixed protocol, to meet patient throughput quotas or as specified in their contract.

Practitioners commonly believed that acupuncture promotes relaxation and reduces stress and that these are major benefits for all types of infertile patients, enhancing their quality of life and encouraging a normalisation of reproductive physiological processes. This was seen as part of a holistic picture where acupuncture promotes natural healing, addresses physical and mental/emotional levels together and diagnoses and treats underlying patterns of ill health as well as specific symptoms. They also considered the therapeutic relationship as crucial for promoting self-confidence, self-help and empowerment, identified as characteristic of traditional acupuncture (34).

Acupuncture was regarded by some as a particularly good choice to use alongside conventional medicine, but also as stand-alone therapy option, allowing patients to avoid conventional treatments. Most practitioners recognised that Western scientific knowledge and procedures may impinge on traditionally-based approaches, possibly to enhance them but possibly to complicate them or diminish their effectiveness. Few had established working relationships with doctors; their experience of trying to liaise with conventional medical

services was generally negative. The extent and nature of communication between complementary and orthodox medical providers has rarely been investigated (36, 37).

Most practitioners considered acupuncture to be effective and well suited to treating fertility-related issues but were aware of limitations and situations for referral to conventional treatment or other alternatives. Although acupuncture is cheaper than most conventional approaches, practitioners felt that women perceived a potentially long course of private treatment as too expensive.

Many of the benefits identified (effectiveness, safety, support for emotional stress, balancing action, adding to orthodox treatment) have also been emphasised by patients receiving acupuncture adjunctive to IVF (30).

IVF is attractive to acupuncture researchers because the intervention can be standardised and delivered over a very short timescale. Other areas of fertility have attracted less research and acupuncture could potentially make the greatest contribution, particularly if a proportion of the countless couples with unexplained infertility could be helped to conceive naturally before they embark on the assisted conception route. Acupuncture complementing orthodox medicine and integrated services could be attractive to patients and the NHS. It is ironic then that acupuncture is used most frequently as an adjunct to Assisted Reproductive Therapy, where its scope is limited. The use of fixed protocols saves treatment time and money and may encourage orthodox health service providers to consider training existing staff rather than using professional acupuncturists (38). Traditional approaches may provide more sustained and wide-ranging benefits which would be adaptable to a greater range of patients. Further research is required to evaluate the relative benefits of these two approaches.

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