CLINICAL TRIAL

Patient Expectations of Acupuncture in Pregnancy

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ABSTRACT

Background: Expectations for treatment have been associated with outcomes. Expectations in acupuncture treatment have rarely been addressed, and due to the unique concerns of pregnancy and childbirth, obstetric patients merit special attention.

Primary Study Objective: Assess treatment expectations of acupuncture clinic patients treated for obstetric and related concerns.

Methods/Design: Descriptive follow-up involving a patient-completed survey; chief treatment concern and number of treatment sessions were validated against patient records.

Participants: Of 265 former clinic patients, 137 (51.7%) completed the internet survey.

Main Outcome Measures: Self-reported demographic variables; responses to open-ended questions on treatment expectations; general treatment variables.

Results: Using standard qualitative data analytic strategies, we identified five major treatment expectations, for example, affecting labor and delivery, benefiting the whole system, and treating specific symptoms.

Limitations: Retrospective method and recall bias may have influenced reported expectations.

Conclusion: Obstetric acupuncture patients' expectations overlap with other subgroups in terms of symptom treatment. They also indicate a distinct interest in taking an active role in childbirth and in replacing conventional interventions, warranting further inquiry into obstetric acupuncture effects and safety in childbearing women.

INTRODUCTION

Studies from Germany and Sweden indicate acupuncture use rates among obstetric (OB) patients in the 4% to 13% range,[1,2] and acupuncture treatment and expenditures are rising in the United States.[3,4] Acupuncture has been called a "sustainable healthcare need,"[5] and along with that need comes a corresponding need to address specific treatment subpopulations, as their treatment goals and experiences likely vary. Toward broadening the scope of variables addressed in research and clinical treatment, we focused on obstetric (OB) acupuncture patients' treatment expectations because expectations are an established factor in outcomes.[6]

UNIQUE CHARACTERISTICS OF THE OBSTETRIC ACUPUNCTURE POPULATION

US surveys on reasons for seeking complementary and alternative medical (CAM) treatments have indicated that 55% of non-pregnant populations viewed CAM as an adjunct, or enhancement, to conventional care, whereas 44% sought CAM after conventional care had failed.[7] However, factors distinguishing obstetric from non-obstetric patients could result in the former holding unique expectations of acupuncture treatment. Primarily, maternal consideration of fetal in addition to personal well-being plays an important role in approaches to maternal medical care.[8] Relatedly, concerns reported by major medical organizations surrounding birth interventions such as oxytocin administration and cesarean delivery[9,10] may lead some women to seek treatments they view as lower-risk than conventional care. This view is evidenced in one study in which pregnant patients randomly assigned to acupuncture for labor initiation reported that participating in the study of alternatives to conventional care was a personal benefit.[11]

WHY FOCUS ON EXPECTATIONS?

In a series of elegant studies involving healthy and ill participants, Benedetti et al[6] demonstrated that treatment expectations influenced patient views on and actual treatment outcomes. In acupuncture treatment specifically, one study comparing true vs. sham acupuncture for dental pain indicated that patients who *believed* they were receiving true acupuncture reported significantly more pain-free time and lower pain scores compared to patients who believed they were receiving sham.[12] In a review of studies involving assessment or manipulation of expectancy effects on acupuncture outcomes, five of nine studies found direct effects of expectancies on at least one acupuncture outcome (e.g., pain), and the others reported an interaction effect, such as more positive acupuncture outcomes when expectations were high.[13]

In general, studies with acupuncture expectation measures have relied on a single item[14,15] such as, "How effective do you consider acupuncture in general?" Multiple item measures have been developed for specific patient subpopulations. For example, a measure for oncology patients[16] focused primarily on symptom relief, and a scale for psychiatric patients[17]

included items on symptom relief and on beliefs in the scientific value of acupuncture.

Though work on defining and measuring acupuncture patient expectations in specific patient subpopulations is underway, the knowledge base stands to be strengthened with additional studies involving methodologies useful in theory building and hypothesis generation. In light of continued calls for research on OB acupuncture,[18,19] particularly that involving nonspecific treatment-related variables,[20] we focused the current study on OB acupuncture patients.

STUDY AIMS

As a step towards enhancing understanding of OB acupuncture treatment expectations, our aim was to survey OB acupuncture patients for their perspectives on treatment expectations and to analyze responses for common themes and subthemes.

METHODS
Participants and Recruitment

Prospective participants were former acupuncture clinic patients seen in a Pacific Northwest metropolitan, private traditional Chinese medicine clinic specializing in pregnant women's care. Patients treated between the years 2003-2013 were invited to participate. All participants had received treatment by the second author (PH), who received her master's degree and professional license in acupuncture and traditional Chinese medicine in 1999; therefore, she had practiced for a minimum of four years prior to seeing any patients who were prospective study participants.

For purposes of understanding OB acupuncture treatment specifically, we included only patients who had been treated in pregnancy and who had a specific obstetric concern. The selection criteria excluded other clinic patients who were not pregnant at the time of treatment such as those seen for fertility support or non-reproductive related concerns. Specific treatment concerns of those contacted for inclusion were nausea, pain, breech correction/conversion, and labor facilitation. Treatment was based on the Traditional Chinese Medicine system of diagnosis and pattern differentiation. The 265 former patients were contacted by e-mail or physical address, described in the "Procedures" section.

Measures

The primary measure was a self-report questionnaire constructed by the two study authors and focused on OB acupuncture clinic patients' experiences and outcomes. The questionnaire contained the open-ended request, "Please describe what your expectations of acupuncture were. You may write as little or as much as you like." Additional questions on birth outcomes were not analyzed in the current study. Demographic questions included birth setting, maternal age, parity, work status, race, maternal education, relationship status, and insurance coverage.

Procedures
Research Procedures

Prior to its beginning, the study was reviewed for ethical treatment of human subjects through the first author's (ES) Institutional Review Board. The survey was hosted on the first author's secure university website. An office assistant extracted contact information (e-mail or physical address) from patient records the second author identified as meeting study criteria. Participants whose records contained an e-mail address (n=98) were sent an e-mail message containing a study announcement, internet link to the study, and secure access/login information. Prospective participants whose records contained only a physical address (n=167) were mailed the study announcement containing the same information as above. Participants provided a mailing address to which a $10 gift card was sent upon survey submission.

Qualitative Data Analytic Approach

A grounded theory approach[21,22] was selected to identify themes emerging from the two open ended questions on expectations and benefits. This approach allows for identification of themes that can in turn be used in theory building and hypothesis generation.

To identify, code, correct, and analyze emergent themes, strategies outlined by LaPelle[23] were used. Text subjected to analysis could have ranged from short phrases to several sentences.

LaPelle's process involves seven steps using word processing software to link text instances to thematic categories to then sort for analysis and theory building. Steps include formatting data, developing a thematic codebook, assigning thematic codes for quantification, and sorting data by relevant index keys to validate and correct codes used in thematic pattern identification and analysis. Thematic categories were intended to be discrete so that text instances fit into only one category (some connector phrases and verbs may have overlapped). Multiple data passes to refine categories were carried out to develop discrete categories and subcategories that described the data succinctly and precluded text mapping onto multiple themes.

The first author conducted initial passes of the data and identification of thematic categories. Codes and resultant themes were reviewed by the first and second author until consensus was reached.

RESULTS
Sample Description

Of 265 former acupuncture patients, 137 (51.7%) completed the survey; demographic data were available on 136. Those who completed the survey did not differ significantly from survey non-completers on the background variables age, parity, or risk status. The time lapse since last treatment ranged from two months to 10 years and averaged 26.6 months.

As shown in the Table, more than 95% of participants identified as white Americans, and at the time of

Table Sample Characteristics (N=136)

Variable	Mean or Frequency
Maternal age (mean, SD)	34.4 (3.9)
Education (y; *M, SD*)	17.4 (2.5)
Total Tx sessions (*M, SD)*	5.4 (5.9)
Primiparous (n, %)	67 (49.3)
Low risk (n, %)	105 (82.7)
Non-white (n, %)	6 (4.5)
Out-of-hospital birth (n, %)	38 (27.9)
Primary treatment focus[a] (n, %)	
Labor facilitation	124 (91.2)
Breech correction/conversion	12 (8.8)

[a] Treatment may have addressed more than one concern; see Results section. Birth setting was not reported by 5 participants.

treatment, their average age was in the mid-30s, and most had some college education. Most (n=105, 82.7%) were low risk. Slightly more than a quarter had planned out-of-hospital birth. Nearly half were pregnant with their first child at the time of acupuncture treatment.

Most (n=124, 91.2%) participants reported having been treated chiefly for labor facilitation, and the remainder (n=12, 8.8%) were treated for breech correction/conversion. Some were seen for additional symptoms: 33 (24.3%) received additional treatment for back, pelvic, head, or neck pain; 24 (17.6%) received treatment for breech conversion/correction (prior to labor facilitation); 15 (11.0%) received treatment for nausea or heartburn. Seven (5.11%) had received earlier treatment for conception and pregnancy maintenance.

QUALITATIVE RESULTS ON ACUPUNCTURE TREATMENT EXPECTATIONS

Of the 137 participants, 135 responded to the treatment expectation question, which yielded 326 total text instances for coding. The 326 instances fell into five theoretically distinct categories. Categories were named to reflect text content, and, in order of the number of text instances described, were: *affect pregnancy and birth processes* (137 instances; 42.02% of total coded), *treat maternal-fetal symptom or condition* (98 instances, 30.06% of total), *benefit whole system, including relaxation* (66 instances, 20.25% of total), *replace conventional care* (13 instances; 3.99% of total), and *held no expectation* (12 instances, 3.68% of total). Categories and representative responses are presented below.

Category I: Affect pregnancy and birth processes. This category's instances reflected maternal interest in influencing or assuming an active role in the birth process. The category mapped onto 137 (42.02%) text instances, and its three subcategories generally aligned with the chief treatment concern.

Consistent with having sought acupuncture treatment to induce labor, which 56 of our sample had, 61 text instances reflected an expectation that acupunc-

ture would *induce labor*. The expectation of acupuncture-induced labor did not necessarily correspond to an expressed *medical* reason for labor induction. In fact, only six of the total 61 instances in this subcategory contained specific reference to a medical need, ranging from, "I was overdue" to the more specific, "I hoped acupuncture would . . . induce labor after water had broken without any signs of active labor for 24 hours," and "I was a week overdue and my doctor had scheduled an induction."

More commonly, respondents expressed interest in having labor start by the due date, seen in 49 of the 61 *labor induction* subcategory instances. Examples included, "Help increase my chances of an on-time birth," and "I wanted to stick close to my due date." One text instance reflected an expectation that acupuncture might help the mother "go into labor before due date."

A sizable number of instances (46; 33.6% of category) indicated an expectation that acupuncture would help in *labor and delivery*, and this expectation corresponded to "labor preparation" as the stated primary reason for treatment in all but two instances. Approximately half (22) the statements in this subcategory reflected the expectation that acupuncture would provide general preparation, as in, "prepare my body for labor," and "prepare my mind for childbirth." The remainder included mention of specific childbirth concerns for which the respondent expected an acupuncture treatment effect in labor and delivery: "keep the baby in the right position," and "help me have a VBAC instead of another c-section."

The remaining text instances (16) in the *affect pregnancy and birth processes* category reflected expectation that acupuncture treatment would *promote labor progress*. Statements ranged from expressions of a general effect, as in, "get into an active labor pattern," or "get labor to progress rather than stall." More specific references were made to helping dilate the cervix and reducing labor time, as in, "A faster and more flowing labor."

A small number (7; 5.11%) of participants had previously sought acupuncture to enhance fertility or to maintain pregnancy. Text instances from those individuals referred to an expectation that acupuncture would *enhance fertility/maintain pregnancy,* as in, "get pregnant easier," or "help me be able to conceive."

Category 2: Treat maternal-fetal symptom or condition. This category contained 98 text instances (30.1% of total). In this category, the only subcategory that clearly corresponded to the expressed reason for having sought treatment was the expectation that acupuncture would correct breech or malpresentation (sought by 12 participants and referred to in 19 text instances). Mothers worded this expectation variously, as in, for example, "help my baby turn to correct position," and "help correct sideways positioning."

The remainder of text instances in the *treat maternal-fetal symptom or condition* category were not tied to the mother's primary reason for treatment but may have related to a secondary reason. Most (38) reflected

expectation of acupuncture to treat *pain,* either general (eg, "discomfort," "aches and pains") or specific, such as for back, joint, and pelvic pain.

Aside from correcting breech and treating pain, the remaining eight instances in this category reflected an expectation that acupuncture would address specific symptoms or conditions that did not directly correspond to expressed reasons for having sought treatment. Examples included blood pressure treatment ("lower my blood pressure," reason for treatment: labor preparation and induction), helping to control false labor contractions, "ease heartburn" (reason for treatment: labor preparation), and placental issues, as in "help ensure that my borderline placenta previa self-corrected" (reason for treatment: correct breech).

Category 3: Benefit whole system, including relaxation. This category contained 66 text instances (20.25% of total). Text in this category referred to holistic or full body effects of acupuncture treatment, and they occurred irrespective of the primary or secondary reason for treatment.

The most frequent subtheme in this category was *relaxation/reducing anxiety and stress,* with 35 text instances. Statements came from those who had sought acupuncture for all expressed reasons (eg, labor preparation, correct breech position). For example, two respondents expected that acupuncture would "help relax." One was treated for breech correction, and the other, to stimulate labor. Reference to "stress" or "reduce stress" came from one treated for labor preparation and pain and another treated only for labor preparation. Further emphasizing expected relaxation were these examples: "Give me time to be quiet and think about labor," and "Provide peaceful mind space."

Other text instances referred to balancing energy, such as, "balance out my system," or "ease of energy flow throughout my system." Further reference to holistic benefits was contained in four statements pertaining to expected acupuncture benefits on sleep, as in, "get better sleep . . . acupuncture is like a nap on steroids." Finally, slightly over half (35) of this category's text instances referred to a general effect of acupuncture in supporting healthy pregnancy and overall well-being, captured here: "Help support a healthy pregnancy," "Increase a feeling of well-being," and "general health maintenance/self-care."

Category 4: Replace conventional care. Contained in this category were 13 text instances (3.99% of total), and they clearly indicated an expectation that acupuncture treatment would allow the respondent to either avoid or replace some aspect of conventional care. The expressed reason for having sought treatment generally corresponded to the conventional care procedure or approach the mother expected to substitute with acupuncture. For example, nine respondents expected acupuncture to replace medical labor induction: "I hoped that it would . . . give me a little jump start so that labor would start naturally before I was induced," and "[I] didn't want to be induced with drugs

and hoped that the acupuncture would stimulate labor." Others sought acupuncture treatment to correct breech position so that they could, for example, "avoid [a] c-section," "deliver with my midwives instead of being transferred . . . to a physician's care" to have home rather than hospital birth.

Category 5: Held no expectation. This category contained the fewest text instances (12, 3.68% of total), and statements came from those who had sought acupuncture for any of the three primary reasons. Just over half (7) were direct though nonspecific statements indicating no treatment expectation, as in, "I had no expectations," or "I didn't expect anything would happen." The remaining instances referred to expecting acupuncture *not* to treat a particular symptom or condition, as in, "I didn't really believe it would stimulate labor," or "Expect[ed] would be untrue, but I hoped that acupuncture would turn my baby."

DISCUSSION

US acupuncture practice and expenditures are increasing; therefore, understanding treatment experiences of acupuncture subpopulations becomes important to researchers, clinicians, and patients. Our qualitative methodology allowed us to identify a core similarity between OB acupuncture and other subgroups' expectations—that is, patients expected outcomes consistent with the primary reason for having sought treatment. Our analysis of an open-ended question also revealed expectations unique to OB patients.

This study's participants were treated for various obstetric concerns tied to an overarching interest in influencing the labor and delivery process through labor preparation, labor induction, or breech conversion/correction (participants also reported secondary treatment aims, such as pain or insomnia treatment). The two expectation categories representing more than 61% of the coded text (affect pregnancy and birth processes, 42.0%; treat specific maternal-fetal symptom/condition, 19.4%) aligned with the recorded chief concern in treatment.

Beyond expected treatment for the chief concern, 66 (20.3%) text instances indicated expected holistic benefit, for example, relaxation or balancing energy. We propose that before or during treatment, patients became familiar with traditional Chinese medicine's theoretical mechanisms of effect such as balancing Qi energy, which strengthens and relaxes the body in preparation for birth, and they in turn came to expect holistic benefit. Related to an expected holistic benefit, a percentage (4.0%) of text instances reflected expectation that OB acupuncture would replace conventional care. However, seeking acupuncture treatment during pregnancy may reflect an implicit interest in avoiding or replacing conventional care. Statements such as, "make natural childbirth easier," and "help me have a VBAC [vaginal birth after cesarean] instead of a c-section," coded in the *affect pregnancy and birth processes* category, support that contention.

Clinical and Research Implications

Of clinical relevance, our respondents indicated clear and specific expectations of treatment, particularly in terms of affecting the labor and delivery process and in addressing symptoms. The benefits of fulfilling an acupuncture treatment expectation are obvious, whereas the consequences of obstetric acupuncture that falls short of delivering an expected outcome are unknown. Until more is known, we would suggest that OB acupuncture patients be counseled to expect the best and prepare for the worst. This would be particularly critical in cases where patients had expected acupuncture to replace conventional care as in, for example, women who expected acupuncture effects to thwart medical induction or cesarean birth.

Of related clinical relevance is whether patients and acupuncturists communicate directly on the sorts of expectations respondents expressed in this study. For example, one respondent wrote that she had expected acupuncture would help her go into labor *before* her due date. To achieve a satisfactory outcome in such a case, the clinician would first need to know of this expectation and second to discuss with this patient how realistic such an expectation was. Along similar lines, for patients who expect acupuncture to replace conventional care, it would be especially critical that they, their acupuncturists, and their obstetric providers communicate their interests and the roles of their respective professional protocols in treatment recommendations. Also related to patient-clinician communication, some respondents reported treatment expectations that were not tied to their recorded chief concern, such as relaxation or pain relief. Again, to ensure satisfactory outcomes, it is imperative that patients and providers have a clear idea of what the patient expects to gain from the acupuncture experience.

As well as clinical implications, our qualitative method generated results with research implications. Certainly, the dimensions identified in this study could serve as a starting point for developing a quantitative measure of OB patients' treatment expectations. In addition, based on responses indicating treatment expectations that directly and indirectly related to the chief treatment concern, we propose that beyond treating specific symptoms or conditions, obstetric acupuncture provides an important support function to maternal care patients. With pregnancy and childbirth transformative experiences, it is unsurprising that women might expect a range of benefits from any of their professional providers. However, to better delineate obstetric acupuncture's mechanisms of effect, teasing apart treatment specific vs nonspecific effects is essential, and identifying expectations such as those that emerged in our results is an important first step.

Of both clinical and research importance, one expectation implied but never made explicit in our respondents' reports was that of expecting safety in obstetric acupuncture. Whereas one may assume that respondents who expect acupuncture to influence the birth process or to replace a conventional care procedure believe that acupuncture is safer for themselves or their offspring, the matter remains to be formally examined. Addressing maternal perceptions in the relative safety of obstetric procedures—in this case, acupuncture—is central to developing effective care and supports. In addition, building on existing studies of OB acupuncture safety[24-27] and addressing safety in the context of outcomes may aid in more widespread acceptance of obstetric acupuncture in maternal care.[19]

Study Limitations

Though our study provides valuable insights into obstetric acupuncture patients' treatment expectations, we should address its limitations. First is the study's retrospective design, which introduced several sources of bias. In particular, patients were asked to report on their treatment expectations after they had undergone treatment, years later in some cases, after which they had experienced the treatment itself and its outcomes. It is possible that when treatment outcomes either exceeded or failed to meet patients' expectations, their post-treatment reports of pre-treatment expectations were influenced accordingly. Also, information gained during the course of treatment, such as that related to acupuncture's goal of balancing Qi energy, may have influenced expressed expectations such as those in the "benefit the whole system" category.

Along similar lines, as a retrospective study, participants' reports were subject to recall bias. Again, memories of expectations among patients who had been treated at some earlier time could have been influenced by any number of intervening events, including the quality of treatment outcomes they perceived. This and other concerns related to the retrospective methodology would be best addressed in further prospective research.

Other study limitations relate to the site from which the sample was drawn. Patients came from one region and were recruited through one clinic, resulting in a homogenous sample. Patients may have narrowed their expectations based on practitioner/clinic reputation for treating specific concerns. In addition, in the recruiting process, we informed patients that their former acupuncturist was a co-investigator, which was required by ethical standards and which we believed would help in recruitment. With this knowledge, however, former clinic patients may have tempered their reported expectations or skewed them positively, particularly if they intended to seek treatment in the future. A social desirability measure would help address this concern in future studies.

CONCLUSION

Obstetric acupuncture patients are similar to other acupuncture patients in expecting treatment of their chief concerns. They are distinct from other acupuncture patients because of their expressed interest in avoiding conventional care as evidenced in direct statements to that effect; however, such statements occurred with relatively low frequency. Our study is useful in that it represents a step forward in understanding and defining treatment expectations in an understudied acupuncture patient subpopulation.

REFERENCES

1. Mårtensson L, Kvist L, Hermansson E. A national survey of how acupuncture is currently used in midwifery care at Swedish maternity units. Midwifery. 2011;27(1):87-92.

2. Münstedt K, Thienel J, Hrogovic I, Hackethal A, Kalder M, Misselwitz B. Use of acupuncture and other CAM methods in obstetrics: an analysis of 409,413 deliveries from Hesse, Germany. J Altern Complement Med. 2011;17(5):421-26.

3. Barnes PM, Bloom B, Nahin RL. Complementary and alternative medicine use among adults and children: United States, 2007. Natl Health Stat Rep. 2008;10(12):1-23. www.nccam.nih.gov/sites/nccam.nih.gov/files/news/nhsr12.pdf Accessed July 1, 2012)

4. Nahin RL, Barnes PM, Stussman BJ, Bloom B. Costs of complementary and alternative medicine CAM and frequency of visits to CAM practitioners: United States, 2007. Natl Health Stat Rep. 2009;18:1-14. www.nccam.nih.gov/sites/nccam.nih.gov/files/nhsrn18.pdf. Accessed May 18, 2012.

5. Frass M, Strassl R, Friehs H, Müllner M, Kundi M, Kaye A. Use and acceptance of complementary and alternative medicine among the general population and medical personnel: a systematic review. Ochsner J. 2012;12(1):45-56.

6. Benedetti F, Maggi G, Lopiano L et al. Open versus hidden medical treatments: the patient's knowledge about a therapy affects the therapy outcome. Prev Treat. 2003; doi: 10.1037/1522-3736.6.1.61a

7. Barnes PM, Powell GE, McFann K, Nahin RL. Complementary and alternative medicine use among adults: United States, 2002. Adv Data. 2004;(343):1-19.

8. Soliday E. Childbirth in a technocratic age. Amherst, NY: Cambria; 2012.

9. American College of Obstetricians and Gynecologists Office of Communications. OB-Gyns Issue Less Restrictive VBAC Guidelines. 2010. www.acog.org/About_ACOG/News_Room/News_Releases/2010/Ob_Gyns_Issue_Less_Restrictive_VBAC_Guidelines. Accessed March 13, 2012.

10. American College of Obstetricians and Gynecologists, Office of Communications. Study finds adverse effects of Pitocin in newborns. 2013. www.acog.org/About_ACOG/News_Room/News_Releases/2013/Study_Finds_Adverse_Effects_of_Pitocin_in_Newborns. Accessed July 21, 2013.

11. Modlock J, Nielsen B, Uldbjerg N. Acupuncture for the induction of labour: a double-blind randomised controlled study. BJOG. 2010;117(10):1255e61.

12. Bausell R, Lao L, Bergman S, Lee W, Berman B. Is acupuncture analgesia an expectancy effect? Preliminary evidence based on participants' perceived assignments in two placebo-controlled trials. Eval Health Prof. 2005;28(1):9-26.

13. Colagiuri B, Smith C. A systematic review of the effect of expectancy on treatment responses to acupuncture. Evidence Based Complement Altern Med.

http://www.hindawi.com/journals/ecam/2012/857804/. Accessed May 8, 2014.

14. Linde K, Witt C, Melchart D, et al. The impact of patient expectations on outcomes in four randomized controlled trials of acupuncture in patients with chronic pain. Pain. 2007;128(3):264-71.

15. Sherman K, Cherkin D, Deyo R, et al. Treatment expectations and preferences as predictors of outcome of acupuncture for chronic back pain. Spine. 2010;35(15):1471-7.

16. Mao J, Xie S, Bowman M. Uncovering the expectancy effect: the validation of the acupuncture expectancy scale. Altern Ther Health Med. 2010;16(6):22-7.

17. Dennehy E, Webb A, Suppes T. Assessment of beliefs in the effectiveness of acupuncture for treatment of psychiatric symptoms. J Altern Complement Med. 2002;8(4):421-5.

18. Smith C, Cochrane S. Does acupuncture have a place as an adjunct treatment during pregnancy? A review of randomized controlled trials and systematic reviews. Birth. 2009;36(3):246-53.

19. Soliday E, Hapke P. Research on acupuncture in pregnancy and childbirth: the US contribution. Med Acupunct. 2013;25(4):252-60.

20. Adams J, Lui C-W, Sibbritt D, et al. Women's use of complementary and alternative medicine during pregnancy: a critical review of the literature. Birth. 2009;36(3):237-45.

21. Holloway I. A–Z of Qualitative Research in Healthcare (2nd ed.). Oxford UK: Blackwell; 2008.

22. Strauss A, Corbin J. Basics of qualitative research: grounded theory procedures and techniques. Newbury Park, CA: Sage; 1990.

23. LaPelle N. Simplifying qualitative data analysis with general purpose software tools. Field Methods. 2004;16(1):85-108.

24. Smith C, Crowther C, Beilby J. Pregnancy outcome following women's participation in a randomised controlled trial of acupuncture to treat nausea and vomiting in early pregnancy. Complement Ther Med. 2002;10(2):78-83.

25. Elden H, Ostgaard HC, Fagevik-Olsen M, Ladfors L, Hagberg H. Treatments of pelvic girdle pain in pregnant women: adverse effects of standard treatment, acupuncture and stabilising exercises on the pregnancy, mother, delivery and the fetus/neonate. BMC Complement Altern Med. 2008;8(Jun):34.

26. Smith C, Crowther C, Beilby J. Pregnancy outcome following women's participation in a randomised controlled trial of acupuncture to treat nausea and vomiting in early pregnancy. Complement Ther Med. 2002;10(2):78-83.

27. Guittier M, Klein T, Dong H, Andreoli N, Irion O, Boulvain M. Side-effects of moxibustion for cephalic version of breech presentation. J Altern Complement Med. 2008;14(10);1231-3.