Abstract

Introduction
A PubMed search yielded 20 studies involving acupuncture and anxiety published in 2013. This paper reviews these studies. A variety of methods and populations were explored. A number of methodological flaws compromised the validity of much of the research. The paper gives suggestions for improving the quality of research carried out in this area in the future.

Conclusion
There is ever more evidence that acupuncture is effective for many types of anxiety in many different populations. Research should continue to investigate this area of study carefully.

Introduction
A PubMed search of keywords "Acupuncture" and "Anxiety" yielded 42 matches. Of these, ten were literature review and did not report any new studies, three reported non-acupuncture interventions, three were editorials, four were not related to acupuncture's effect on anxiety, one was a proposed study protocol and one was a report from a placebo conference. This left 20 new studies on the topic of Acupuncture and Anxiety to review. The studies are summarized in Table 1.

Unless otherwise specified, subjects were randomized into their treatment arms; the treatment arms were statistically similar at baseline, and clinical findings were statistically significant to \( p \leq 0.05 \).

A note about placebo (sham) control groups
Many of the studies reviewed attempt to control for the effect of acupuncture by utilizing "placebo" or "sham" acupuncture. The two most common methods of sham acupuncture involve either A) inserting needles superficially into known acupuncture points, or B) inserting needles normally but into points that are not considered to be active acupuncture points. Lundeberg et al.1 demonstrated that sham acupuncture is not inert and should not be considered a valid placebo. Other studies used "No-treatment" groups as their control groups; but these are also not appropriate controls. Finnisset al. 2 have shown that extra verbal and physical contact can establish a placebo effect and affect outcomes. If one group is receiving attention once (or more) weekly and the other group is waiting at home, then any benefits may be due to the extra attention and not to the intervention that we are studying. For this reason, care should be taken to standardize the amount of physical and verbal contact with subjects between groups.

Discussion
The author has referenced one of his own studies in this review. These studies were conducted in accordance with the Declaration of Helsinki (1964) and the protocols of these studies had been approved by the relevant ethics committees related to the institution in which they were performed. All human subjects in these referenced studies gave informed consent to participate.

The ability of acupuncture to treat anxiety has been documented. It has been found effective in treating generalized anxiety, depressive anxiety, preoperative anxiety and more. Pilkington et al.3 authored an excellent review on this subject. Although anxiety is its own problem, it can also increase an individual's susceptibility to other diseases4. Much acupuncture research is now adding anxiety assessments to their protocol. These assessments are easy to administer and are useful in helping identify what sort of interventions are most effective in treating anxiety. In the past year, researchers looked at new point protocols and new populations.

Carvalho et al.5 studied the effect of acupuncture on anxiety and depression caused by premenstrual dysphoric disorder. They split 26 women into two groups (true and sham) and assessed them before and after a course of treatment with the Hamilton Rating Scale for Anxiety (HAM-A) and Hamilton Rating Scale for Depression. Both groups were treated twice weekly over two menstrual cycles (16 treatments total). The treatment group had needles inserted at Neiguan PC6, Taichong Lv3, Yanglingquan GB34, Hegu LI4, Waiguan TW5 and Sanyinjiao Sp6 retained for 30 min after obtaining deqi. In the sham group, needles were inserted shallowly at points 2 cm away from those used in the treatment group and quickly removed without the patients' knowledge. There is now sufficient evidence to show that sham acupuncture is not a true placebo because it is not inert and does have...
effects similar to true acupuncture. Even so, this study showed superiority of true acupuncture treatment. Subjects in the sham group saw their anxiety drop by 21% whereas those in the treatment group had their anxiety reduced by 59%. In addition, subjects in the sham group had depression reduced by 19% and those in the treatment group had it reduced by 52%.

Reshef et al. studied the effect of acupuncture on patients with schizophrenia in a pilot study. Their primary focus was sleep, but they also examined anxiety and depression. Twenty patients diagnosed with schizophrenia or schizoaffective disorder were evaluated at baseline and after 8 weeks of twice-weekly acupuncture. Sleep was measured by a wrist actigraph and subjective questionnaires. Anxiety was measured by the State Trait Anxiety Inventory (STAI) questionnaire, and the HAM-A. After 8 weeks, many parameters of sleep were improved and anxiety and depression levels were lessened significantly according to all measures. Two limitations of this study are that (1) there was no control group; and (2) each patient received individualized treatment and the points used were not reported.

McPherson and McGraw studied a multi-therapy approach to reducing anxiety. A total of 37 volunteers at a military facility received 6 weeks of acupuncture at Shenmen HT7, Zusanli ST36, Yintang EX-HN-3, Taixi KD3 and Taichong LV3. Additional points at Qihai CV6, Juque CV14, Sanyinjiao SP6 and Hegu LI4 were added according to each patient’s diagnosis (although these points and additional points were not specified in the report). Body mass index was the primary measure, but they also examined anxiety by the DASS-21 (DASS-21). and the Generalized Anxiety Disorder, 7-item scale (GAD-7). Clinical improvements were found in depression, anxiety, stress and the use of anxiolytic medication. But since the approach was multi-faceted and lacked a control group, it is impossible to evaluate how much, if at all, the acupuncture protocol contributed to the improvement.

Lu and Lu compared the effectiveness of different single acupuncture points. They studied 108 subjects with a history of panic attacks and phobias regarding medical or dental procedures and whose anxiety prevented them from hypnotic induction. Each patient received acupuncture at Hegu LI4, Shenmen HT7, Anmian EX-HN-8, Neiguan PC6, Sanyinjiao SP6 or Yintang Ex-HN-3. Anxiety was measured by pulse, blood pressure and blood oxygenation. They found that Yintang Ex-HN-3 was most effective at helping subjects enter into hypnosis; Hegu LI4 was most effective at relaxing muscles and reducing pain; and Shenmen HT7 was most effective at pulse reduction. Investigators suggest that Yintang’s Ex-HN-3 effectiveness was through improving subjects’ concentration on the instructions of the hypnotist. All of the points investigated helped some of the subjects fall into a hypnotic state and undergo procedures that they had previously been unable to tolerate.

Wang et al. examined the effect of electro-acupuncture (EA) on personality traits in depression and compared it to the effect of paroxetine HCl (Paxil, manufactured by GlaxoSmithKline, USA). They used the Minnesota Multiphasic Personality Inventory, Self-rating Anxiety Scale (SAS), Self-rating Depression Scale and the Montgomery–Asberg Depression Rating Scale. Subjects were needed at Baidhi GV20, Sishencong EX-HN-1, Shenmen HT7 and Sanyinjiao SP6 with EA at Yintang EX-HN-3 and Neiguan PC6. EA used 125 ms intermittent pulse at 40 Hz. Deqi was achieved; treatments lasted for 20 min and were administered three times per week for 24 weeks. Control group took paroxetine for 24 weeks. The authors reported that depression, paranoia and social introversion were reduced more for the acupuncture group than the paroxetine group, but the reduction in anxiety was similar in both groups.

Smith et al. compared acupuncture to acupressure control in the treatment of anorexia nervosa with 26 inpatients. They used Hegu LI4, Neiguan PC6, Yanglingquan GB34, Taichong LV3 and Zusanli ST36 in both groups, and additional points were added according to each patient’s traditional Chinese medicine (TCM) diagnosis (although these points and the criteria for determining a TCM diagnosis were not specified in the report). Body mass index was the primary measure, but they also examined anxiety by the DAS. Subjects received nine treatments during their 6-week inpatient stay. Although both groups experienced reductions in the anxiety level, the reduction in anxiety was not significant nor was the difference between the two interventions.

On the biochemical level, Zhao et al. examined the chemical changes that anxiety causes in rat’s brains and acupuncture’s effect on moderating those effects. They addicted mice to ethanol. Then they removed access to ethanol for 3 days. On each of those days, the rats received 1 minute per day of acupuncture either at Shenmen HT7 or Neiguan PC6 or a non-acupoint on the tail. Rats were observed on an elevated plus maze (EPM) test to assess anxiety before their brains were analysed. Radioimmunoassay was performed to quantify the corticotropin-releasing factor (CRF) content of the centre nucleus of the amygdala. The authors also tested plasma levels of corticosterone (CORT). Through the use of multiple control arms, they showed that...
Anxiety but those effects were independent.

Arvidsdotter et al.13 studied 120 subjects who were seeking treatment for psychological distress. Forty subjects were assigned to each group: Conventional Therapy (CT), Traditional Acupuncture (TA) and Integrative Treatment (IT). All subjects were treated once a week for 8 weeks. CT included psychotherapy or watchful waiting. TA used Baihui GV20, Qihai CV6, Neiguan PC6, Shenmen Ht7, Hegu Li4, Taichong Lv3, Sanyinjiao Sp6, Zusanli St36 and additional ashi points, with deqi, retained for 20–30 min. IT group received TA and salutogenic therapy. Anxiety and depression levels were measured by the Hospital Anxiety and Depression Scale (HADS) at baseline; and after 4 and 8 weeks of treatment. There was improvement in both IT and TA groups compared to CT group at 4 and 8 weeks, but there was no difference between the two groups.

Clima et al.14 examined the effect of acupuncture on 30 subjects with dyspepsia, but they also used the HADS to evaluate their protocols’ effects on anxiety and depression. Group 1 received acupuncture at points believed to help ease dyspepsia: Neiguan PC6, Hegu Li4, Neiting St44, Zusanli St36, Taichong Lv3 and Zhongwan CV12. Group 2 received acupuncture on the same meridians, but on points not specific to dyspepsia: Jianshu PC5, Sanjian Li13, Xianggu St43, Dubi St35, Xingjian Lv2 and Jianli CV11. Acupuncture was administered three times per week over 4 weeks (12 treatments total). After 4 weeks, group 1 experienced significantly greater reduction in the levels of dyspepsia, anxiety and depression compared to group 2.

Haddad-Rodrigues et al.15 studied the effect of auricular acupuncture to ease anxiety in lactating mothers of preterm infants. A total of 29 subjects were split into two groups: true and sham acupuncture. True group received retention needles unilaterally at: ear Shenmen, tension, muscle relaxation, and anxiety points 1 and 2. Sham group had a simulated needling sensation at the same points, but no needle penetrated the skin and a dull point was kept in place by adhesive tape. Both groups were treated once weekly, and the true and sham needles were kept in place from one treatment to the next. Subjects received between 2 and 12 acupuncture treatments. The STAI was used to assess anxiety at baseline and after the course of treatment. Salivary cortisol levels were also measured and analysed as a secondary measure. The authors found that this protocol did not produce a significant change in anxiety. They also found that the salivary cortisol levels did not correlate with STAI scores.

Bao et al.16 examined the effect of acupuncture on post-menopausal women with breast cancer taking aromatase inhibitors that cause muscaric symptoms as a side effect. They looked at a number of quality-of-life-related factors including sleep, hot flashes and anxiety as measured by the HADS. They split 47 subjects into a Real Acupuncture (RA) group and a Sham Acupuncture (SA) group. The RA group received acupuncture at Guanyuan CV4, Qihai CV6, Zhongwan CV12, Hegu Li4, Neiguan PC6, Taixi Kd3, Zusanli St36, Yanglingquan GB34 and Shugu UB65. The SA group received non-penetrating, retractable needles at 14 non-acupuncture points. Both groups were treated once weekly for 20 min. Data were collected at baseline and after 4 and 8 weeks of treatment. RA protocol was more effective in treating hot flashes and other menopausal symptoms than SA, but neither protocol was effective in treating anxiety or depression.

Couilliot et al.17 studied the use of acupuncture for relief of chronic pain in geriatric patients living in a care facility. Sixty patients received

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All authors abide by the Association for Medical Ethics (AME) ethical rules of disclosure.
individualized acupuncture, using between 5 and 11 needles, for eight sessions over 6 weeks. The needles were retained for 10 min. After two sessions, 32% participants reported a subjective lowering of anxiety. But as this drop in anxiety was not quantified, there was no control group, and the points were not standardized, this study does not help guide practitioners in treatment. This was a pilot study though, and its main focus was whether or not the acupuncture would be desired by the patient population. The authors found that it was.

Kasymjanova et al. examined acupuncture’s effect on quality of life in patients with lung cancer, using the Edmonton Symptom Assessment System (ESAS). Thirty-three subjects received acupuncture twice weekly at Hegu LI4, Neiguan PC6, Taichong LV3, Sanyinjiao Sp6 and Zusanli St36 and at the auricular points: Shenmen, subcortex and point zero. Deqi was obtained and the needles were retained for 30 min. Subjects had between 4 and 26 weeks of treatment. ESAS was administered at baseline and at the end of treatment. Comparing baseline to the end of treatment, improvements were found in nausea, appetite, pain, nervousness and well-being. The authors pointed out that the lack of control group limited the conclusions that can be drawn from this one-sample study.

Stenor-Victorin et al. examined the effect of acupuncture on depression and anxiety on women with polycystic ovarian syndrome (PCOS). The women filled out a variety of questionnaires at baseline, after 16 weeks of treatment and 16 weeks after completion of treatment. Anxiety level was measured with the Brief Scale for Anxiety (BSA). Seventy-two women were divided into Acupuncture, Exercise and Control groups. Women in the Acupuncture group received 14 treatments over 16 weeks. The points used were Zhongji CV3, Qihai CV6, Guilai ST29, Sanyinjiao Sp6 and Yinlingquan Sp9 with EA at 2 Hz; and Hegu LI4 and Neiguan PC6 with manual stimulation every 10 min. The Exercise group was instructed to perform aerobic exercise for at least 30 min, three times per week. The Control group was advised that exercise could help, but were given no specific instructions to exercise. Women in the Control and Exercise groups did not meet personally with researchers after the initial contact. After 16 weeks, no differences were found in BSA scores between groups or within groups. At the 32-week follow-up, Acupuncture group had lower BSA score than the Exercise group but not than Control. This protocol does not appear to be especially effective in treating anxiety in this population.

Bastos et al. investigated patients with fibromyalgia. The primary focus was pain, but secondary measures were quality of life. Eight women were treated once weekly for 2 months with acupuncture at ash points on the occiput, trapezius, upper chest and lateral epicondyle. The Beck Anxiety Inventory (BAI) was administered at baseline and at the end of treatment. BAI scores were significantly lower after the treatment, and patients' tolerance to pressure at the ash points was greater. But again there was no control group, so it is unclear how much of this effect was due to the needling.

Anxiety is often treated with antidepressants that can cause sexual dysfunction. Khamba et al. examined the effect of acupuncture on this side effect in 35 subjects, but they also investigated anxiety and depression. Subjects who were receiving treatment for anxiety received weekly, 15-min acupuncture with tonifying method at Taixi Kd3, Mingmen GV4 and Shenhu UB23; and Shenmen Ht7 and Neiguan PC6 with even movement. Subjects completed the BAI, BDI and two sexual function questionnaires weekly. The researchers found after 12 weeks that this protocol improved anxiety, depression and sexual function scores for men but not for women. This study lacked a control group.

Zhou et al. published a report comparing acupuncture on all 12 meridians with clonazepam for reducing anxiety in patients diagnosed with generalized anxiety disorder. Unfortunately, only the abstract of the study was available. The authors split 80 patients with anxiety into an acupuncture or a medication group. Anxiety was measured with HAM-A and brain waves. Subjects were treated over 6 weeks. The acupuncture protocol included points such as Hegu LI4, Lieque Lu7 and Shenmen Ht7, but the other points were not specified in the abstract. After 6 weeks, HAM-A scores were lower in the acupuncture group than the medication group. Brain waves were found improved in both groups, with alpha waves increasing and theta waves decreasing. The improvement in brain waves was similar between both groups. The authors concluded that acupuncture was as effective as medication at calming brain waves and more effective than medication at improving patients’ subjective experience of anxiety.

Deng et al. worked with patients with chronic fatigue after chemotherapy. Their primary focus was fatigue, but they also investigated anxiety by the HADS. They split 98 subjects into true and sham acupuncture groups and treated them weekly for 6 weeks. True group received acupuncture at Taixi Kd3, Qihai CV6, Guanyuan CV4, Zusanli St36, Sanyinjiao Sp6, Quchi LI11 and Yinxi Ht6; and deqi was obtained. Sham acupuncture group had retractable, blunt needles placed slightly away from the same acupuncture points. Both protocols were found ineffective for treating fatigue and anxiety.

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Table 1  Summary of studies for OA Acupuncture

<table>
<thead>
<tr>
<th>Author</th>
<th>Population</th>
<th>Intervention</th>
<th>Control</th>
<th>Measures</th>
<th>Outcome</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carvalho et al.</td>
<td>26 women with PMDD</td>
<td>PC6, Lv3, GB34, Li4, TW5, Sp5. Twice weekly over 8 weeks</td>
<td>Sham:</td>
<td>HAM-A</td>
<td>59% drop in anxiety vs. 21% drop in sham</td>
</tr>
<tr>
<td>Reshef et al.</td>
<td>20 patients with schizophrenia</td>
<td>8 weeks of individualized treatment</td>
<td>None</td>
<td>STAI, HAM-A</td>
<td>Reduction in anxiety</td>
</tr>
<tr>
<td>McPherson and</td>
<td>37 military personnel</td>
<td>6 weeks of weekly H7, St36, Yintang, Kd3, Lv3, CV4, CV6, Sp6, Li4 plus many other CAM therapies</td>
<td>None</td>
<td>DASS-21, GAD-7</td>
<td>Reduction in anxiety, depression and use of anxiolytic medication</td>
</tr>
<tr>
<td>Lu and Lu</td>
<td>108 subjects with history dental/medical anxiety and inability to be hypnotized</td>
<td>Compared one treatment of Li4, H7, PC6 or Yintang</td>
<td>Historical control</td>
<td>Ability to be hypnotized, pulse, BP, blood oxygenation</td>
<td>Yintang most effective for hypnosis; Li4 most effective for muscle relaxation; H7 best for pulse reduction</td>
</tr>
<tr>
<td>Wang et al.</td>
<td>48 patients with depression</td>
<td>24 weeks of weekly treatment at GV20, Sishencong, PC6, and EA at Yintang and PC6</td>
<td>Compared to paroxetine</td>
<td>SAS</td>
<td>Reduction in anxiety similar between both groups</td>
</tr>
<tr>
<td>Smith et al.</td>
<td>26 inpatients with anorexia nervosa</td>
<td>Li4, PC6, GB34, Lv3, St36 and individualized points, 9 treatments over 6 weeks</td>
<td>Compared to acupressure at same points</td>
<td>DAS</td>
<td>No change in anxiety in either group; no difference between groups</td>
</tr>
<tr>
<td>Zhao et al.</td>
<td>Rats in ETOH withdrawal</td>
<td>3 one-minute treatments at H7 or PC6, or non-acupoint sham</td>
<td>Non-addicted rats, non-acupoint</td>
<td>EPM behaviour, plasma CORT, CRF in amygdala</td>
<td>H7 moderates biochemical and behavioural expression or ETOH withdrawal, PC6 and sham point do not</td>
</tr>
<tr>
<td>Bussell</td>
<td>90 healthy undergraduate students</td>
<td>One 20-min tx at Sishencong, Yintang, Du24, PC6, H7, Kd3</td>
<td>Same verbal and physical contact, no needle insertion</td>
<td>STAI</td>
<td>State anxiety lower in acupuncture group</td>
</tr>
<tr>
<td>Arvidsdotter et al.</td>
<td>120 psychiatric patients</td>
<td>8 weeks of treatment at GV20, CV6, PC6, H7, Li4, Lv3, Sp6, St36 and ashi points</td>
<td>Conventional treatment arm, integrative tx arm that included acupuncture and psychotherapy</td>
<td>HADS</td>
<td>Acupuncture and integrative arms had less anxiety than conventional</td>
</tr>
<tr>
<td>Lima et al.</td>
<td>30 subjects with dyspepsia</td>
<td>PC6, Li4, St44, St36, Lv3, CV12 3×/week over 4 weeks</td>
<td>Compared to same frequency of acupuncture at PC5, Li3, ST43, St35, Lv2, CV11</td>
<td>HADS</td>
<td>Group 1 (correct acupuncture points) had less anxiety</td>
</tr>
<tr>
<td>Haddad-Rodrigues et al.</td>
<td>29 lactating mothers of preterm infants</td>
<td>Auricular Shenmen, tension, muscle relaxation and anxiety 1 and 2, treated weekly with retention needles</td>
<td>Sham: simulated, non-penetrating acupressure</td>
<td>STAI and salivary cortisol level</td>
<td>Both groups reduced anxiety, but no difference between groups</td>
</tr>
</tbody>
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Acar et al.\textsuperscript{24} examined the effectiveness of a press-needle at Yintang Ex-HN-3 for preoperative anxiety. Fifty-two subjects received a press-needle at either Yintang Ex-HN-3 or a non-acupuncture point lateral to the eyebrow for 20 min before surgery. Anxiety level was measured with the STAI and a bispectral index (BIS) electrode and monitor. After treatment, the Yintang group’s STAI state anxiety score and BIS level were found lower than baseline scores, but those of the sham group’s were not.

**Conclusion**

There are many limitations several studies reported here. First, many studies lack an appropriate control group. A second problem in many of these studies is the lack of standardization of points used. Research studies must be reproducible, and this is not possible when practitioners are allowed to use their own judgement in selecting points. A good study is not about evaluating the ability of “acupuncture” to do anything specific, it is about evaluating the ability of a particular point

**Table 1 Continued**

<table>
<thead>
<tr>
<th>Author</th>
<th>Population</th>
<th>Intervention</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bao et al.\textsuperscript{15}</td>
<td>47 post-menopausal women with breast cancer taking aromatase inhibitors experiencing muscular symptoms</td>
<td>Weekly tx at CV4, CV6, CV12, LI4, PC6, Kd3, St36, GB34, UB65, Sham: non-penetrating needles at 14 non-acupuncture points</td>
</tr>
<tr>
<td>Couillet et al.\textsuperscript{16}</td>
<td>60 geriatric patients in assisted living</td>
<td>Individualized treatments, 8 sessions over 6 weeks</td>
</tr>
<tr>
<td>Kasymjanova et al.\textsuperscript{17}</td>
<td>33 lung cancer patients</td>
<td>Twice weekly tx at LI4, PC6, LV3, Sp6, St36, Ear Shenmen, subcortex, point zero. Treated between 4 and 26 weeks</td>
</tr>
<tr>
<td>Stenor-Victorin et al.\textsuperscript{18}</td>
<td>72 women with PCOS</td>
<td>PC6, LI4 and EA at CV3, CV6, St29, Sp6, Sp9, weekly for 16 weeks</td>
</tr>
<tr>
<td>Bastos et al.\textsuperscript{19}</td>
<td>8 women with fibromyalgia</td>
<td>Weekly tx for 2 months at ashi points on occiput, trapezius, upper chest and lateral epicodyle</td>
</tr>
<tr>
<td>Khamba et al.\textsuperscript{20}</td>
<td>35 patients with sexual dysfunction secondary to antidepressant medications</td>
<td>Weekly tx at Kd3, GV4, UB23, H7 PC6 for 12 weeks</td>
</tr>
<tr>
<td>Zhou et al.\textsuperscript{21}</td>
<td>80 patients with generalized anxiety disorder</td>
<td>6 weeks of treatment with acupuncture on 12 meridians (points not specified)</td>
</tr>
<tr>
<td>Deng et al.\textsuperscript{22}</td>
<td>98 subjects with chronic fatigue after chemotherapy</td>
<td>Kd3, CV6, CV4, St36, Sp6, LI11, H6, Sham: non-penetrating, retractable needles slightly off the same points</td>
</tr>
<tr>
<td>Acar et al.\textsuperscript{23}</td>
<td>52 subjects with preoperative anxiety</td>
<td>Press-needle at Yintang, Sham: press-needle at non-acupoint</td>
</tr>
</tbody>
</table>

protocol. For this reason, the points used and the number of treatments should be consistent between all members of a treatment arm. A third problem is that some of these point protocols reported in this study should not be expected to reduce anxiety. If a researcher is going to add an anxiety measure to his or her study, there should be reason to assume that the point protocol used will have an impact on anxiety.

There is ever more evidence that acupuncture is effective for many types of anxiety in many different populations. Research should continue to investigate this area of study carefully.

Abbreviations list
AOSPAN, Automated Operation Span; BAI, Beck Anxiety Inventory; BIS, Bispectral Index; BSA, Brief Scale for Anxiety; COR, corticosterone; CRF, corticotropin-releasing factor; CT, Conventional Therapy; DAS-21, Depression Anxiety Stress Scale-21; EA, electro-acupuncture; ESAS, Edmonton Symptom Assessment System; EPM, elevated plus maze; GAD-7, Generalized Anxiety Disorder-7; HADS, Hospital Anxiety and Depression Scale; HAM-A, Hamilton Rating Scale for Anxiety; HAM-D, Hamilton Rating Scale for Depression; IT, Integrative Treatment; PCOS, polycystic ovarian syndrome; RA, Real Acupuncture; SA, Sham Acupuncture; SAS, Self-rating Anxiety Scale; STAI, State Trait Anxiety Inventory; TA, Traditional Acupuncture; TCM, traditional Chinese medicine; WM, working memory.

References