Available online at www.sciencedirect.com

Integrative Medicine Research

journal homepage: www.imr-journal.com

Commentary

How do psychological factors influence autonomic responses to acupuncture?

*Jungtae Leem**

Korean Medicine Clinical Trial Center, Kyung Hee University Korean Medicine Hospital, Seoul, Korea

ARTICLE INFO

Article history:
Received 25 November 2014
Received in revised form
18 December 2014
Accepted 21 December 2014
Available online 3 January 2015

1. Focal Article

Chang DS, Kim YJ, Lee SH, Lee H, Lee IS, Park HJ, Wallraven C, Chae Y. Modifying Bodily Self-Awareness during Acupuncture Needle Stimulation Using the Rubber Hand Illusion. Evid Based Complement Alternat Med 2013; 2013:849602.

2. Aim

To investigate whether modifying bodily self-awareness by manipulation of body ownership and visual expectation would change the subjective perception of pain and autonomic response to acupuncture stimulation.

3. Design

The study used a randomized, two-arm, crossover design. Two experiments were designed, with and without visual expectation conditions.

In each experiment, participants experienced synchronous and asynchronous brush stroking sessions in random order.

4. Setting

The study was conducted at the Acupuncture and Meridian Science Research Center, Kyung Hee University, 1 Hoegi-dong, Dongdaemun-gu, Seoul 130-701, Republic of Korea.

5. Participants

Thirty-one participants (19–29 years of age; 16 males and 15 females) were recruited from the general population through advertisement.

Experiment 1 included 19 participants (M: 9, F: 10); Experiment 2 included 12 participants (M: 7 F: 5).

* Corresponding author. Korean Medicine Clinical Trial Center, Kyung Hee University Korean Medicine Hospital, 1 Hoegi-dong, Dongdaemun-gu, Seoul, Korea.
E-mail address: julcho@naver.com
http://dx.doi.org/10.1016/j.imr.2014.12.003

6. Intervention

Experiment 1: Acupuncture needle stimulation was applied to the real hand. Participants saw the acupuncture needle stimulation applied to the rubber hand in a synchronized and colocalized manner as it was applied to the real hand (visual expectation condition). Participants were told to fixate on the rubber hand and not to look elsewhere.

As seen in Fig. 1, two small paintbrushes stroked the rubber hand and the participant's hidden real left hand as synchronously as possible (synchronous condition) and asynchronously (asynchronous condition).

During the synchronous session the rubber hands illusion (RHI) was successfully evoked and implied disruption of body ownership (disembodiment). During the asynchronous session, participants had a normal sense of body ownership (embodiment).

After 300 seconds of brush stroking, an acupuncture needle was applied to the real hand by inserting the needle into the skin using the small tube. The order of synchronous brush stroking and asynchronous brush stroking was randomized. The participants had to wait 10–15 minutes between the two sessions.

Experiment 2: The design was almost identical except that participants received no visual feedback (no visual expectation), meaning that they did not know when or where the acupuncture needle would penetrate their real hand.

The participants were told that they would randomly receive either real acupuncture treatment (with needle penetration of the skin) or sham acupuncture treatment (without needle penetration) for each trial.

7. Main outcome measures

(1) Skin conductance response (SCR): Two electrodes were placed on the second and third digits of the left hand on the medial side of the phalanges. Skin conductance was recorded using a galvanic skin response amplifier (GSR Amp ML116; AD Instruments, Bella Vista, Australia) and a high-performance data acquisition PowerLab 8/30 system (ML870; AD Instruments). We assessed score changes that reflected increments or reductions from baseline after acupuncture treatment.

(2) Rubber Hand Illusion Perception Scale (RHIS)[1]: After finishing each session, participants reported their perception of RHI using RHIS, which includes nine questions.

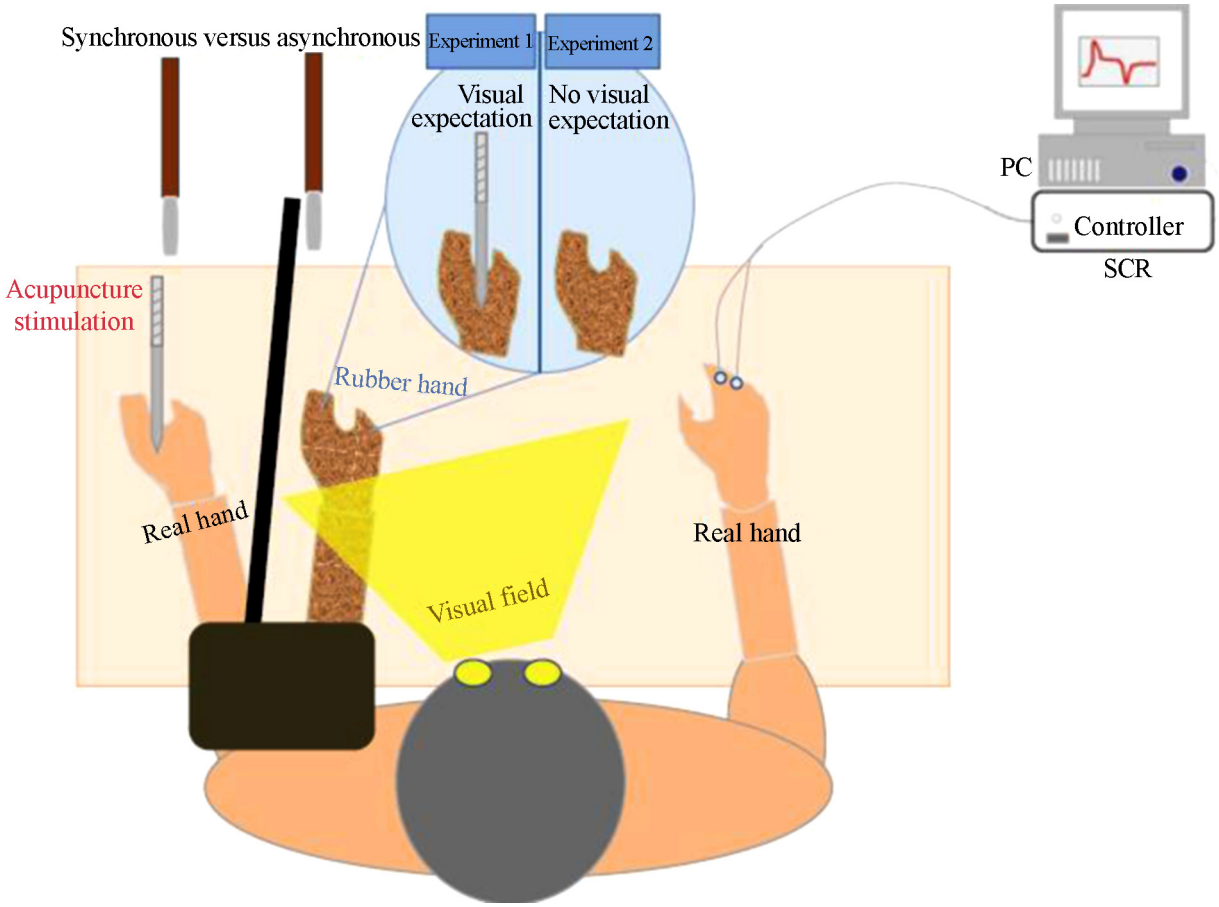

Fig. 1 – (from the focal article) Schematic drawing of the experimental setup illustrating the rubber hand illusion with (Experiment 1) and without (Experiment 2) the visual expectation when participants received acupuncture stimulation on their real hand. Two small paintbrushes stroked the rubber hand and the participant's hidden real left hand as synchronously as possible under one condition (synchronous condition) and asynchronously under the other (asynchronous condition). PC, personal computer; SCR, skin conductance response.