

The Effect of Electroacupuncture (EA) Training or Percutaneous Electrical Nerve Stimulation (PENS) on Student Confidence, Skills and Satisfaction

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There is a desire and need for more training in Percutaneous Electrical Nerve Stimulation (PENS) among licensed practitioners of acupuncture and Oriental Medicine. Surveys were conducted using structured interviews, large group forums and email inquiry via the Internet. Of sixty-three interviewees, only two indicated that they received training in PENS methods that they thought was sufficient. Those with an interest pursued postgraduate training in PENS. Additionally, surveys were conducted with acupuncture schools. Surveys were conducted with fifty accredited institutions with twenty-seven respondents. Eight of the schools offer less than five hours training, fifteen schools offer between five and ten hours in basic training, four schools offer no training at all, and the others did not respond.

There were two primary impediments to adequate training in PENS according to the surveys. First, some institutions have a philosophical bias against the use of electrical stimulation. Second, there is a low level of perceived benefit for more in depth PENS training. Of the twenty-seven schools that responded, only one had a twenty-hour training program in PENS methods as part of the core curriculum.

It should be made clear that the lower levels of training in PENS are not a safety risk according to malpractice actuarials. This study examined learner confidence and satisfaction. The suggestion is that practitioners would prefer more training in PENS in general. Furthermore, It is important to note that PENS is neither different in principle nor in practice than electro-acupuncture.¹ For the purposes of this paper, PENS will be used as an acronym for the terms “percutaneous electrical nerve stimulation” as well as

“electro-acupuncture.” This procedure is the attachment of electrodes through the surface of the skin and application of electrical current to achieve therapeutic benefit.

Rationale

Because of the general dissatisfaction among practitioners and students regarding sufficient content and detail regarding basic training in PENS, It is important to investigate the impact of PENS training at schools of Oriental Medicine. Additionally, there are studies that suggest that PENS may provide better clinical outcomes than manual acupuncture for certain conditions such as pain management. 2-4 This pilot study is non-randomized because of the funding limitations for providing such a course in an elective format.

Purpose

This is a pilot study for the purpose of determining whether there is a difference in learner satisfaction and confidence when provided an average of 14 hours of additional training. It examines the impact of PENS training on student self-perceived knowledge, skills and confidence. At the end of the training, learners should have improved skills related to their ability to explain when the use of PENS should be considered; correct placement of the electrodes; attach electrodes to the needle; select an appropriate frequency and operating mode; explain the reason for selecting the frequency and mode; correctly adjust the amplitude; and explain cautions and risks related to amplitude. Learners should be able to describe appropriate treatments for: sciatica, smoking cessation, shoulder pain, impotence and facial paralysis. They should be able to describe to the patient in terms the patient can understand, the

cautions involved with PENS; describe the likely sensations a patient will experience, cite evidence for the use of PENS in terms both a colleague and a patient can understand; explain how PENS works; Perform PENS/EA with confidence.

Methods

The PENS training is conducted primarily with discussion, demonstration and guided practice. It includes historical development, technical basis and theoretical background, neurophysiology and electrodynamics, electrode placement, safety, contraindications, review of literature and patient management issues with PENS procedures.

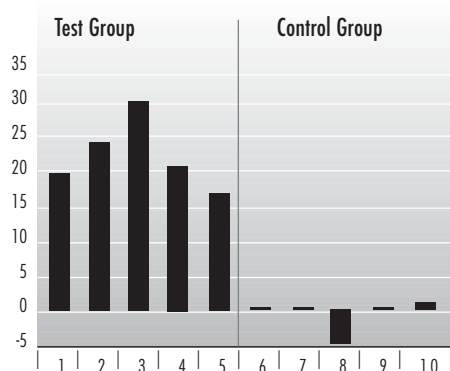
Study Design

The course will consist of 20 hours additional training focused on objectives that are detailed under purpose. Additional qualifications for participation in the study include coursework in OSHA and Clean Needle Technique with two quarters of techniques training. The learners are students with little (four hours) or no exposure to PENS training. The study design uses a pre and post self-evaluation instrument that is used with a test group and a control group. The groups are pseudo-randomized through registration.

Assessment of the trainees was performed prior to and after training. The same procedures were performed with control group who had no training. It is hoped that this study will be performed at multiple sites and longitudinally for purposes of increasing internal validity due to the quasi-experimental nature of this project. The instrument was based on a straight-line response form which has been shown to have empirical validity for clinical evaluation.⁶⁻⁷

PENS training content:

1. Historic development.
2. Technical basis and theoretical background.
3. Neurophysiology and electrodynamics.
4. Electrode placement, safety, contraindications.
5. Review of literature, meta-analyses, evidence based practices.
6. Microcurrent, interferential and TENS.
7. Evidenced based medicine.
8. Practicum.
9. Electro should include with and without needles, and galvanic, and ultrasound. In addition, CPT coding will be taught.
10. Estimated enrollment 12-20 students.
11. 20 hours training in a weekend intensive format.



Conclusion

There are few subjects in this study (n=10) so the margin of error in the confidence interval is large. However, the intervention effect is significant between the two groups with a change difference of more than 200% with $p=0.0002$. This suggests that the education increases knowledge and confidence of PENS with an additional 20 hours of training.

The large mean difference and low intra-group variation suggests the effectiveness of the course. However, the pseudo-randomization design reduces the study's generalizability. It is likely that only students with an interest in PENS attended the course. One way to further examine the effectiveness of the course would be to include learners into the course who have a low interest in the content. Lastly, these studies can be randomized providing greater confidence and reliability. Please contact the author at will@emperors.edu for electronic copies of the instruments and consent forms.

Instrument: Self-Rating Scale for Pre and Post Training in Percutaneous Electrical Nerve Stimulation(PENS)/Electro-Acupuncture (EA)

Date _____ Faculty _____

Age ____ Gender ____ Licensed practitioner _____ Student ____ State ____

(office use) Form Number _____ I have had advanced techniques yes no

The learners include anyone who has taken the Clean Needle Technique course. This assessment will take place in the classroom before and after training. The purpose of the assessment is to determine efficacy of additional training in PENS/EA methods for increased learner satisfaction and confidence. In addition, it will be used for assessing the learner's acquisition of knowledge, skills, and abilities related to PENS/EA practices. This form will be kept strictly confidential and has no bearing on scores. Consider each of the statements below. Then select from the scale the description that most closely fits, then write the numbers clearly in the response column.

1. Very adequately 2. Adequately 3. Not very adequately 4. Not at all

#	I can:	Response
1	explain when the use of PENS should be considered	
2	explain the reason for selecting the frequency and mode	
3	explain the reason for electrode placement	
4	explain cautions and risks related to amplitude	
5	select an appropriate frequency and operating mode	
6	attach electrodes to the needle	
7	correctly adjust the amplitude	
8	place the electrodes correctly	
9	describe appropriate treatments for:	
9a	Sciatica	
9b	Stop smoking	
9c	Shoulder Pain	
9d	Impotence	
9e	Facial Paralysis	
10	describe to the patient the cautions involved with PENS	
11	describe the likely sensations a patient will experience	
12	cite evidence for the use of PENS	
13	This item is different than the above items – rate your confidence in PENS according to the scale in the column to the right 1 confident 2 moderately confident 3 not very confident 4 No confidence at all	
14	Comment about your current level of satisfaction with PENS/EA training	

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