

# THE EFFECTS OF ACUPRESSURE ON STRESS A SELF HELP APPROACH

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## ABSTRACT

Acupressure may be an effective self-help tool for stress reduction and prevention of stress related disease. 81 volunteers (71 females, 10 males), at Towson University, (18 + years) began a 4 week study to ascertain the effects of a specific, self administered, acupressure protocol on stress. The initial sample identified themselves as 79% Caucasian, 4.9% African American, 7.4% Hispanic American, 2.5% Asian, and 6.2% other. Participants were randomly assigned to an acupressure intervention protocol or a control group. Physiological stress measurements (pulse rate, blood pressure, and respiration rate) and psychological stress measurement (self-report, participant's perception of pain, anxiety, mental fatigue, and body tension using a Visual Analog Scale) were measured and recorded before and after a 10 minute interval.

The protocol used was an adaptation of the SEVA/Stress Release protocol, based on Process Acupressure. As part of the SEVA/stress release protocol, participants are asked to apply a special touch known as *interface* to a specific series of acupressure points on their own body. Independent sample t-tests demonstrated significantly reduced psychological stress measures for the intervention group. No statistically significant differences were found for physiological stress measures. Findings suggest that SEVA/stress release can be viewed as a valuable self-help tool in the reduction of psychological stress and therefore, in prevention of disease.

## INTRODUCTION

- Stress is a fact of modern day life which presents itself in many forms internal, external, physical, psychological, or emotional. Uncontrolled, stress can lead to disease (Gilbert, 2003; Selhub, 2002).
- Distress, an overwhelming stress level, arises due to an overload of simple stressors. "Current research shows that the average American experiences 50 brief stress response episodes a day" (Selhub, 2002, p.185).
- A self-limiting "fight or flight" response is initiated for each stressor. This hormonal hyper-arousal occurs to meet the stressor's demands and then by way of hormonal feedback loops, subsides. However, human emotional and physical perception alters or inhibits this self-limiting mechanism and the hormonal arousal often continues to depletion (Elbert and Rockstroh, 2003). Many factors such as social, cultural or religious beliefs, genetics, previous trauma, age, duration, as well as others, all affect perception and the ability to suppress the response (Selhub, 2002).
- If the mind can cause malfunction of the stress response, and lead to disease, then it is possible for the mind to recondition the stress response in order to create health (Selhub, 2002). Mind-body medicine does not just treat symptoms, but rather the goal is to improve coping abilities and improve stress-response reactivity (Jacob, 2001).

- A maladaptive process of stress response and suppression, or too many stressors may lead to disease (Jacobs, 2001). According to Traditional Chinese Medicine, stimulation of specific acupoints along the meridian lines allows energy to flow evenly, becoming more balanced. This can release muscle tension, increase circulation and alleviating pain, or can be used to treat disease” (Lee, 2002, p.12).
- A restful, balanced, state of being, associated with decreased hyper-arousal of the nervous system and related systems is often associated with the term *relaxation response* coined by Benson in the 70’s.
- Research studies have confirmed the physical and psychological benefits of the *relaxation response* when used on a daily basis. It decreased CNS (central nervous system) hyper-arousal as well as down-regulated adrenergic receptors. In short, it took more stressors to become more stressed (Selhub, 2002).
- Self-administered acupressure allowed for a greater sense of control, easing hopelessness, and initiating a relaxing effect which supported the body. By activating acupoints with finger pressure, elderly clients were able to ease body tension which had a calming effect (Barrett, 1993).
- Acupressure promoted mind awareness, supported the body, and reduced anxiety in patients and reached beneath the “fight or flight” response when exploring deep emotional issues in therapeutic settings (LaTorre, 2000).
- In a pain management study, it was concluded that acupressure was effective in the reduction of pain. Acupressure was non-invasive, simple to learn, and patients were able to administer the acupressure on themselves (Lee, 2002).
- The current study investigated acupressure as a self-help tool and its ability to reduce levels of stress in daily life in a generalized population by measuring pre and post-protocol stress levels and ascertain the efficacy of the SEVA protocol to reduce stress.

## PARTICIPANTS

- Participants of the study were adults, age recruited from the student population of Towson University, MD. 81 volunteers began the 4-week study, 71 completed 2 weeks, 30 completed 3 weeks, and 25 completed all four weeks of the protocol.
- The initial sample was comprised of 71 females and 10 males.
- The sample identified themselves as 79% Caucasian, 4.9% African American, 7.4% Hispanic American, 2.5% Asian, and 6.2% other.
- Participants were randomly assigned to control and intervention conditions.
  - Control condition – 10 minute rest period
  - Intervention condition – completed the protocol

## THE PROTOCOL

- A self-administered acupressure protocol adapted from the SEVA/Stress Release based on the work of Aminah Raheem PhD, originator of mind-body-spirit modality known as Process Acupressure®.

- SEVA originated as a protocol for relieving shock and stress in emergencies, and has since evolved into a modality for stress release in general. It is based on the 5-element theory of Chinese medicine that uses the meridian system of energy flows (Raheem, 1987).
- Acupressure locations – see location on chart.
- A specific style of touch known as *interface* was taught to the intervention group. This type of touch contacts both the energy and the structure of the body (Raheem, 1987), and involves placing a gentle curve or stretch into the tissue (at a point) while applying light pressure. The students were also taught two stretches: a leg release and neck release.
- The SEVA protocol was chosen for its simplicity, adaptability to a self-help approach, and its mind-body-spirit focus.

## MEASUREMENTS

- Pre and post-protocol data collection
- Physiological Stress - objective
  - Pulse rate, blood pressure, and respiration
- Psychological stress - subjective
  - Self-report data using a Visual Analog Scale was collected for anxiety, body tension, mental fatigue, and pain.

## RESULTS

- Using an independent sample t-tests, the mean differences (change) between the pre and post scores was compared for control group (n=37) and the intervention group (n=44). Changes in stress levels were computed by subtracting the post score from the pre score (hence, a higher mean score indicated greater change in direction of reduced stress level).
- As shown in Table 1, at week 1 and week 2, measures of psychological stress showed significant reductions in the intervention group compared to the control group. On average, participants assessed their level of pain, mental fatigue, body tension and anxiety to be at lower levels after the protocol than they had assessed before completing the protocol. Although results were less consistent for the smaller number of participants who completed weeks 3 and 4 of the protocol, results were still in the same direction, and relatively robust, as shown by the r-effect size.
- As seen in Table 2, there were no statistically significant differences between the control group and the intervention groups in measures of physiological levels, such as blood pressure, pulse, and respiration rates.

## CONCLUSIONS

- SEVA as a self-help approach was effective in reducing psychological stress.
- Additional measures are needed to assess physiological stress levels.
- Future longitudinal studies are needed to assess the ability of a self-help protocol used on a daily basis, over time, and its ability to prevent disease by lowering stress levels.

TABLE 1

		<u>Intervention</u>		<u>Control</u>		<u>SIG</u>	<u>r<sub>effect size</sub></u>
	<u>df</u>	<u>Mean</u>	<u>SD</u>	<u>Mean</u>	<u>SD</u>		
Week 1 – Decrease in Anxiety level	79	4.659	4.570	1.162	6.366	.005*	.31
Week 1 – Decrease in Body Tension level	79	4.546	6.628	1.378	5.534	.024*	.25
Week 1 – Decrease in Mental Fatigue level	79	4.159	5.067	1.460	3.445	.007*	.30
Week 1 – Decrease in Pain level	79	1.818	4.857	-.297	2.634	.020*	.26
Week 2 – Decrease in Anxiety level	71	4.300	5.548	.485	3.768	.001**	.37
Week 2 – Decrease in Body Tension level	71	4.400	5.969	.788	3.471	.003*	.34
Week 2 – Decrease in Mental fatigue level	71	5.675	5.061	.818	3.441	.0001**	.49
Week 2 – Decrease in Pain level	71	1.900	2.907	-.273	3.448	.005*	.33
Week 3 – Decrease in Anxiety level	30	4.625	5.667	1.169	3.737	.094	.30
Week 3 – Decrease in Body Tension level	30	6.625	6.076	-.2500	4.266	.001**	.56
Week 3 – Decrease in Mental Fatigue level	30	3.500	4.619	.688	2.359	.038*	.37
Week 3 – Decrease in Pain level	30	1.438	3.558	.000	3.386	.251	.21
Week 4 – Decrease in Anxiety level	25	2.000	2.699	.417	4.542	.098	.33
Week 4 – Decrease in Body tension level	25	4.067	4.114	.417	5.680	.064	.36
Week 4 – Decrease in Mental Fatigue level	25	6.133	6.435	1.083	8.174	.084	.34
Week 4 – Decrease in Pain level	25	2.667	2.554	2.667	7.315	1.00	.00

\*  $p < .05$     \*\*  $p < .001$

TABLE 2

	<i>df</i>	<u>Intervention</u>		<u>Control</u>		<u>SIG</u>
		<u>Mean</u>	<u>SD</u>	<u>Mean</u>	<u>SD</u>	
Week 1 – Decrease in Diastolic reading	79	2.886	8.697	.8649	8.750	.302
Week 1 – Decrease Systolic reading	79	4.068	12.237	6.919	15.256	.354
Week 1 – Decrease in Respiration	79	.5000	.7625	.5162	.8375	.928
Week 1 – Decrease in Pulse reading	79	1.909	7.745	3.973	11.273	.334
Week 2 – Decrease in Diastolic reading	71	3.350	10.719	3.576	11.416	.931
Week 2 – Decrease Systolic reading	71	3.375	9.100	4.546	13.449	.660
Week 2 – Decrease in Respiration	71	.6938	.7172	.0758	.9447	.002**
Week 2 – Decrease in Pulse reading	71	3.650	12.497	3.212	8.950	.867
Week 3 – Decrease in Diastolic reading	30	5.125	16.844	-1.563	10.366	.186
Week 3 – Decrease Systolic reading	30	6.250	16.711	3.000	19.983	.621
Week 3 – Decrease in Respiration	30	.1563	1.150	.0625	2.359	.770
Week 3 – Decrease in Pulse reading	30	2.063	9.497	4.625	9.135	.443
Week 4 – Decrease in Diastolic reading	25	-1.200	7.627	-1.667	3.725	.848
Week 4 – Decrease Systolic reading	25	-1.400	12.704	2.333	9.866	.412
Week 4 – Decrease in Respiration	25	.0000	.0000	.0000	.0000	0
Week 4 – Decrease in Pulse reading	25	3.800	11.534	1.333	6.035	.509

\*  $p < .05$     \*\*  $p < .001$