

**Title of Intervention:** Relaxation and management of stress for hypertension

**Intervention Strategies:** Group Education

**Purpose of the Intervention:** To reduce hypertension through training in relaxation and stress management

**Population:** Employees with heart disease risk factors, but not taking antihypertensive medication

**Setting:** Large manufacturing firm; worksite-based

**Partners:** None mentioned

**Intervention Description:** An 8-week program

- Group Education: Participants in the intervention group attended 1-hour relaxation and stress education trainings in groups of 6 to 8. The training included breathing exercises, deep-muscle relaxation and meditation. Subjects were asked to practice relaxation twice a day and were lent the instructional tape for home practice. Participants were given health education literature on modification of dietary fats, smoking cessation and high blood pressure and an individual explanation about heart disease risk factors.

**Theory:** None mentioned

**Resources Required:**

- Staff/Volunteers: Trained nurse
- Training: Not mentioned
- Technology: Audiovisual equipment
- Space: Room for group sessions
- Budget: Not mentioned
- Intervention: Cassettes with breathing/relaxation/meditation instructions, skin resistance feedback machine, "Stresses and Strains" video, health education literature
- Evaluation: Questionnaires, blood pressure measurement tools, electrocardiogram, blood draw tools, dietary recall diaries

**Evaluation:**

- Design: Randomized controlled trial
- Methods and Measures:
  - Screening included questionnaires, blood pressure measurements, electrocardiogram, blood samples
  - Three 24-hour dietary recall diaries were completed before each follow up examination
  - The survey included questions regarding medical history and current medical treatment

**Outcomes:**

- Short term Impact: Blood pressure was significantly lower in the intervention group at both 2 and 8 months and remained somewhat lower at 4 years. The serum cholesterol was significantly more reduced in the intervention group at 2 months but not 8 months or 4 years. No significant differences were found in fat intake. Heart rate reduction was higher in the intervention group at 2 months and 8 months. The intervention group had significantly higher smoking reduction than the control group at 2 and 8 months but not 4 years.
- Long Term Impact: Blood pressure was significantly more reduced at 4 years in people who said they were still using the relaxation exercises than in those who said they were not. New ischemic events were significantly more common in the control rather than the treatment group. At 4 years, the intervention group had a lower number of subjects with self-reported angina, treatment for angina, heart attack, heart failure, treatment for heart failure, kidney damage, thrombosis of retinal vessels and treatment of thrombosis. The intervention group also had lower numbers of people with established probable myocardial infarction, possible myocardial infarction and fatal myocardial infarction

**Maintenance:** The subjects in the intervention group were given advice on how to implement relaxation exercises into their everyday life and were given the cassettes for home practice.

**Lessons Learned:** Results from studies using volunteers should not be expected in a study with non-volunteers. The changes in blood pressure in the control group underlined the crucial importance of having a control group in a study of this nature and not relying on before and after comparisons.

**Citation(s):**

Patel, C., M. G. Marmot, et al. (1981). "Controlled trial of biofeedback-aided behavioural methods in reducing mild hypertension." *Br Med J (Clin Res Ed)* 282(6281): 2005-8.

Patel, C., M. G. Marmot, et al. (1985). "Trial of relaxation in reducing coronary risk: four year follow up." *Br Med J (Clin Res Ed)* 290(6475): 1103-6.