

**IMPACT OF RELAXATION TRAINING
ACCORDING TO YOGA IN DAILY LIFE®
SYSTEM ON MENTAL HEALTH IN
WOMEN AFTER BREAST CANCER
SURGERY: PILOT STUDY USING
EXPERIMENTAL DESIGN**

MSc. Tine Kovačič, BSc. Physiotherapy

BREAST CANCER DISCOURSES

- 1. BIOMEDICAL DISCOURSE**
- 2. BREAST CANCER ACTIVISTS' DISCOURSE**
- 3. FEMINISTS' DISCOURSE**

METHODOLOGICAL PROBLEMS IN RESEARCH ON COMPLEMENTARY INTERVENTIONS FOR BREAST CANCER PATIENTS

Variations in sample characteristics

**After-only studies with non-randomised
control grup**

Quasi/Non-experimental designs

Threats to internal/external validity

Structured interventions

**Non-sensitive, unreliable and non-valid
outcome measures**

AIMS, OBJECTIVES AND HYPOTHESES

- 1. To examine the effects on psychological well being in BC patients**
- 2. To test the short-term effects of relaxation training on stress, self-esteem, mental health and anxiety**
- 3. To determine the feasibility of conducting a clinical trial of relaxation training in a clinical care setting**
- 4. To examine the potential role of this specific relaxation on mental health and quality of life**

HYPOTHESIS

- Ha1** The experimental group mean scores of psychological distress at 1 week and 4 weeks post-attendance, and at 4 weeks post-attendance will be lower than the controls.
- Ha2** The experimental group mean scores of state and trait anxiety level at post test and at 1 week and 4 weeks post-attendance will be lower than the controls.
- Ha3** The experimental mean scores of self-esteem at 1 week and 4 weeks post-attendance will be higher (indicating higher self-esteem) than the controls.
- Ha0** Any differences in the data between both experimental and control group will be just due to chance.

METHODS

Research design; pilot study using standard randomised clinical trial methodology

Sample; 40 women from accesible population at the Institute for Oncology of Ljubljana

INCLUSION CRITERIA

- 1. Initial diagnosis: breast cancer**
- 2. Stage I & II breast cancer**
- 3. Postoperative hospitalisation: 1 week**
- 4. 40 years of age or older**
- 5. Surgical options: breast conserving surgery (BCS) or radical modified mastectomy (MRM)**
- 6. Patients who were willing to accept the randomisation to any group**
- 7. Multimodal therapy (surgery, radiotherapy, chemotherapy)**

EXCLUSION CRITERIA

- 1. Known and documented psychiatric disorders**
- 2. Active substance abuse (a history of dependence on alcohol or drugs, taking psychotropic drugs)**
- 3. Stage III & IV breast cancer**
- 4. Patients with seriously impaired hearing**
- 5. Patients with seriously reduced cognitive capacity**
- 6. Patients that have received psychotherapy**

STRATIFIED RANDOMISATION PROCEDURES

CONTROL GROUP (n=16): standard physiotherapy

**EXPERIMENTAL GROUP (n=16): standard
physiotherapy + relaxation training**

OUTCOME MEASURES

- 1. At baseline (after the surgery)**
- 2. At 1 week (at discharge)**
- 3. At 4 weeks (prior the commencement of chemotherapy/radiation)**

Outcome measures were obtained by blinded investigators using standardised questionnaires.

RESEARCH INSTRUMENTS

1. PSYCHOLOGICAL DISTRESS

General Health Questionnaire-12

Rotterdam Symptom Checklist

Perceived Stress Scale

2. ANXIETY

Self-evaluation questionnaire

The STAI State-Anxiety Scale

The STAI Trait-Anxiety Scale

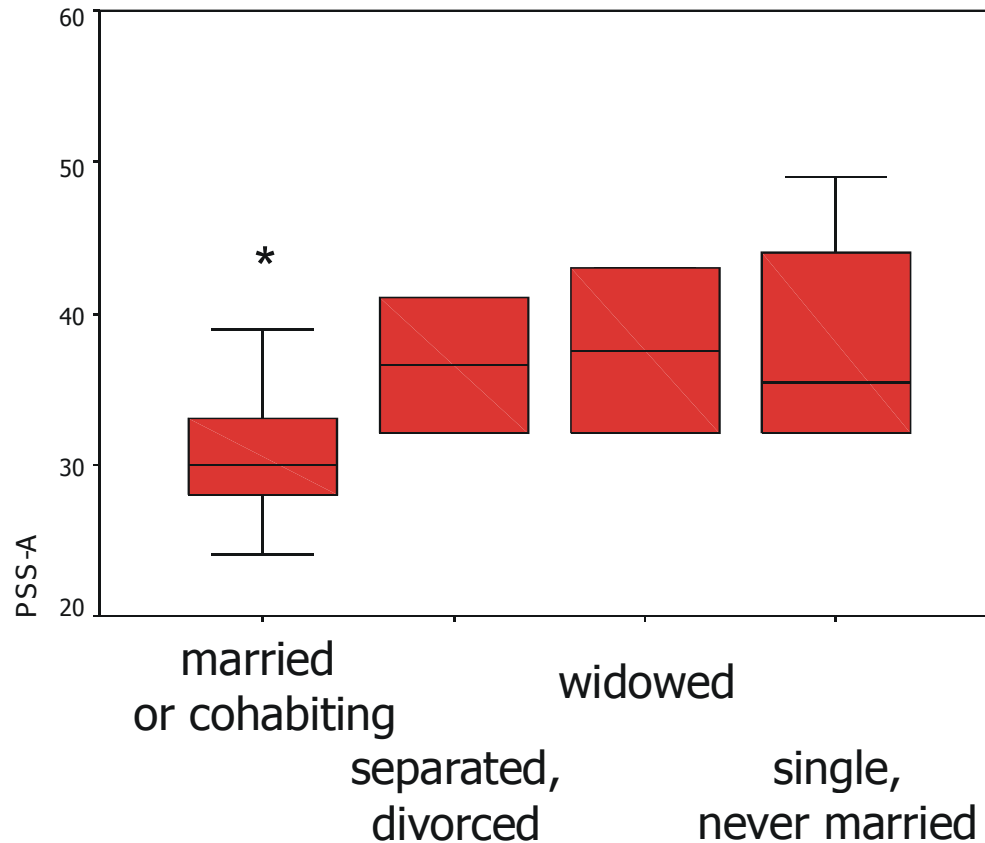
3. SELF ESTEEM

Rosenberg Self-Esteem Scale

RESULTS

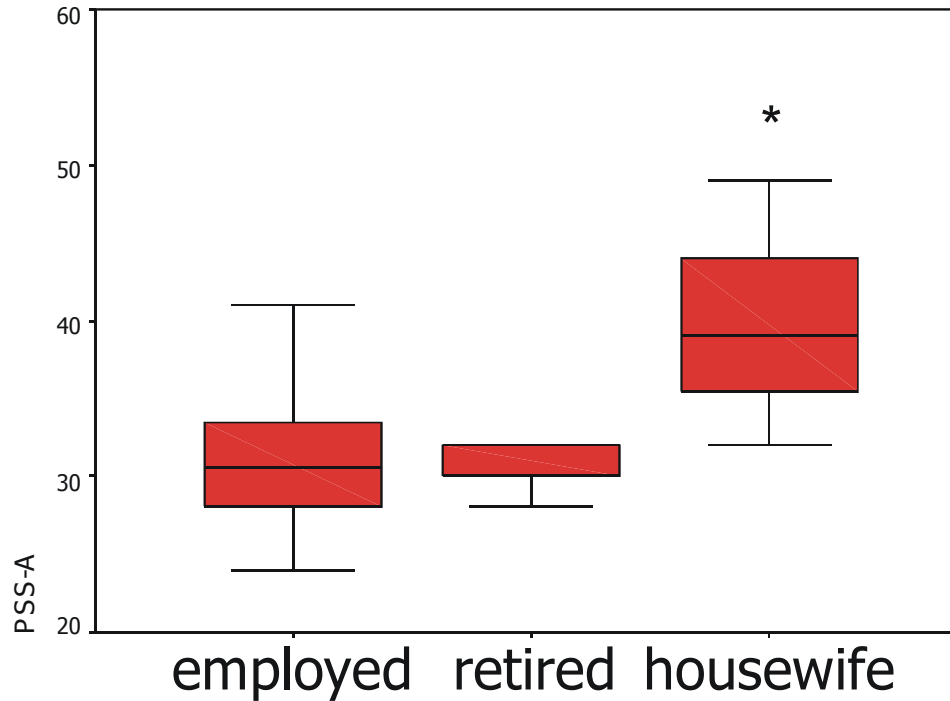
- 1. AGE (t-test, $p=0.893$)**
- 2. MARITAL STATUS (χ^2 , $p=0.713$)**
- 3. EMPLOYMENT STATUS (χ^2 , $p=0.317$)**
- 4. EDUCATION (χ^2 , $p=1.000$)**

Baseline outcome measures' values regarding marital status



(t-test, p=0.028)

Baseline outcome measures' values regarding employment status



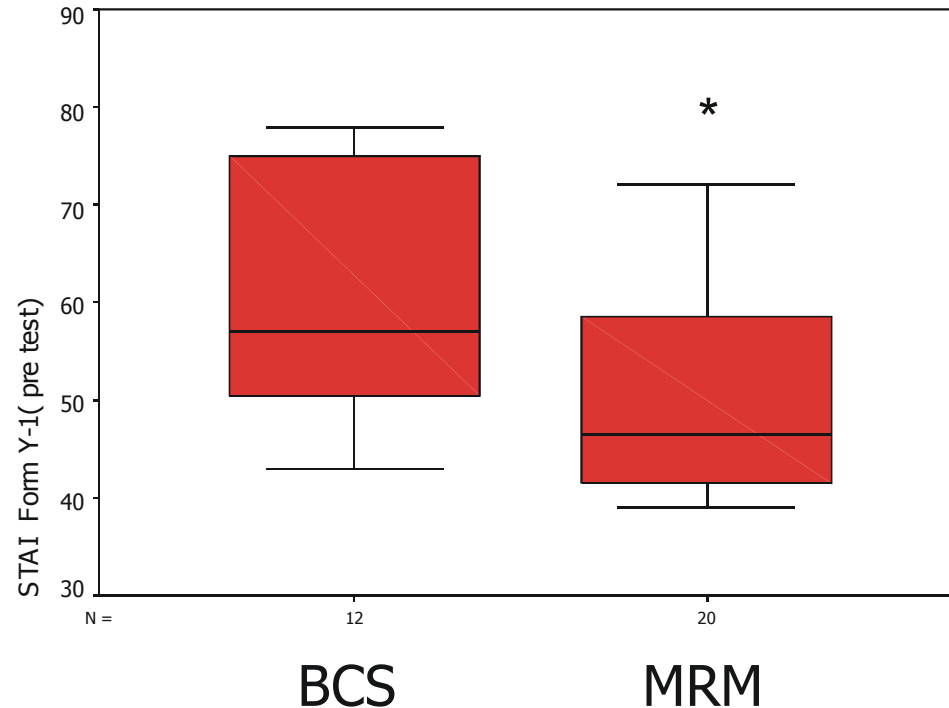
(χ^2 , p=0.05)

Baseline outcome measures' values regarding employment status



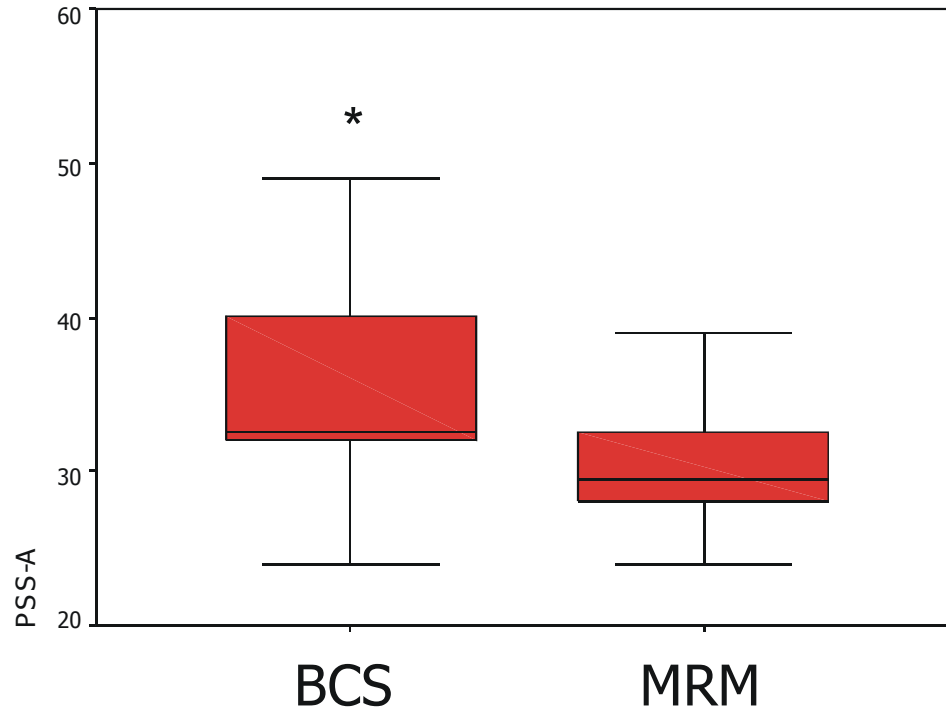
(KW test, $p=0.021$)

Baseline outcome measures' values regarding type of surgery



(t-test, p=0.022)

Baseline outcome measures' values regarding type of surgery



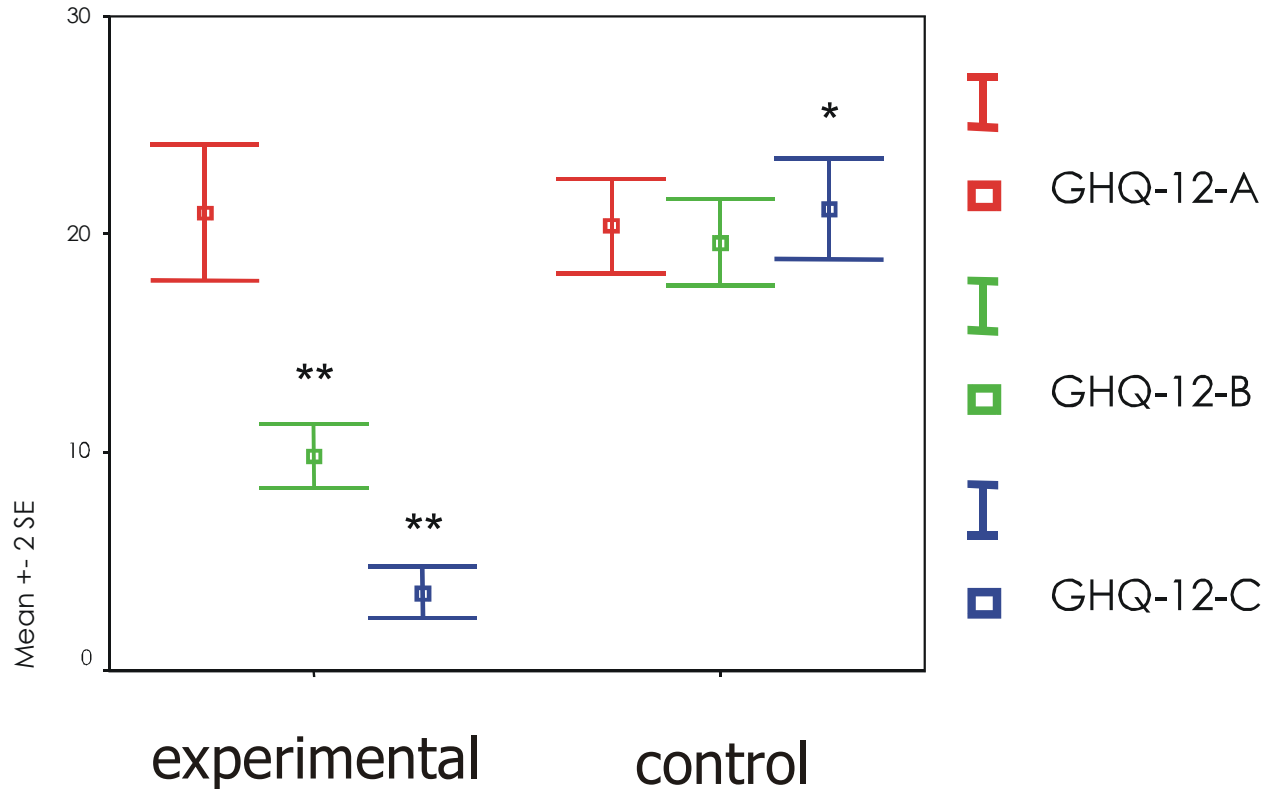
(t-test, $p=0.022$)

Psychological distress GHQ-12

Repeated measures analysis of variance

ANOVA (F=113.8887, $p < 0.0005$)

Psychological distress GHQ-12



*** statistically significant ($p < 0.05$)**

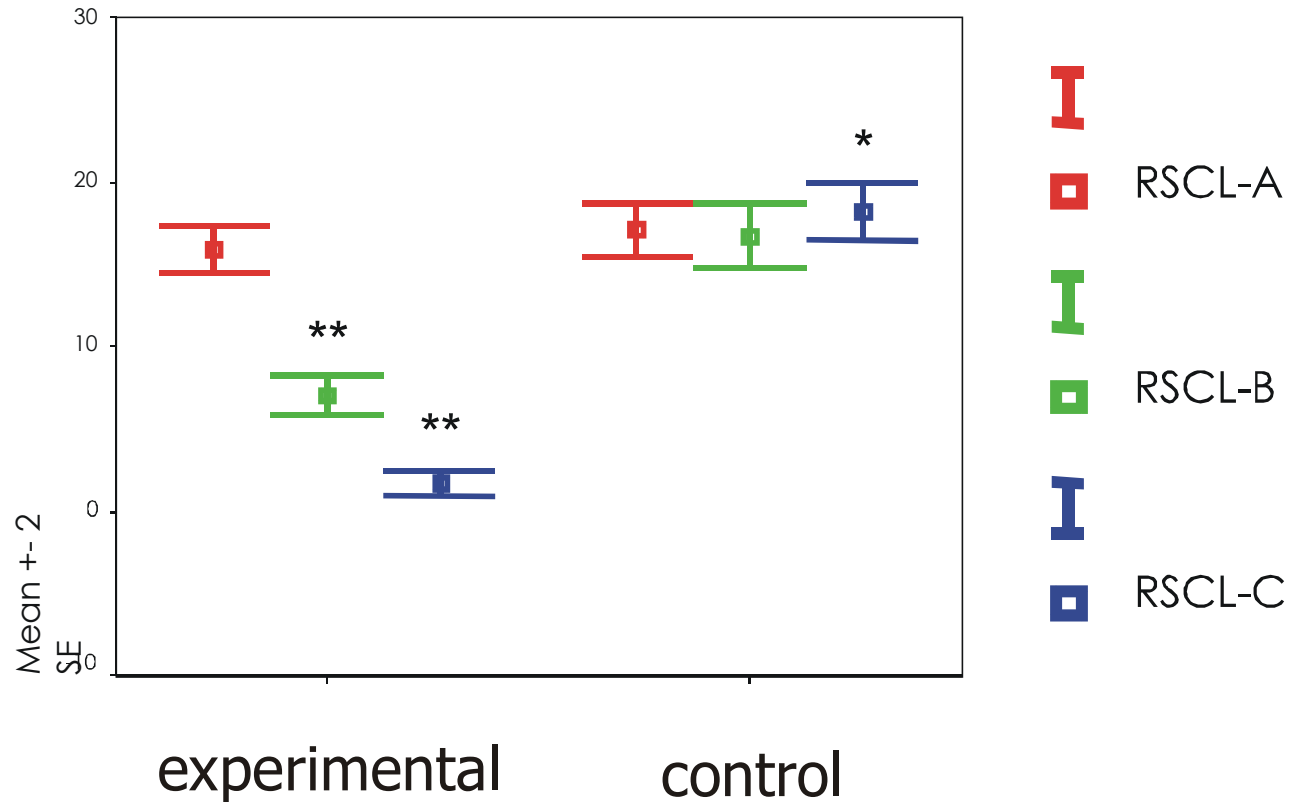
**** statistically significant ($p < 0.0005$)**

Psychological distress RSCCL

Repeated measures analysis of variance

ANOVA (F=288.389, $p < 0.0005$)

Psychological distress RSCCL



*** statistically significant (p<0.05)**

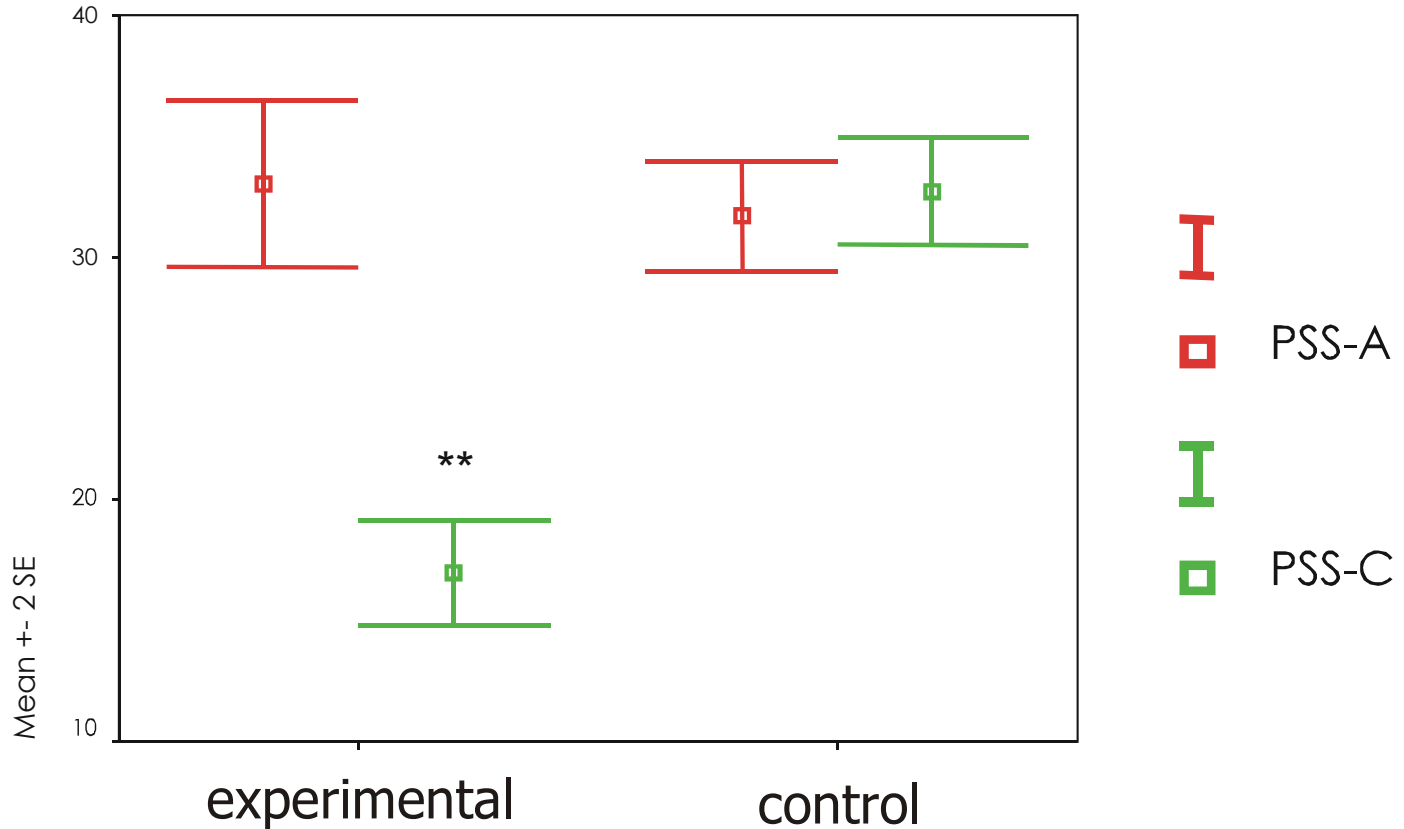
**** statistically significant (p<0.0005)**

Psychological distress PSS

Repeated measures analysis of variance

ANOVA (F=80.801, $p < 0.0005$)

Psychological distress PSS



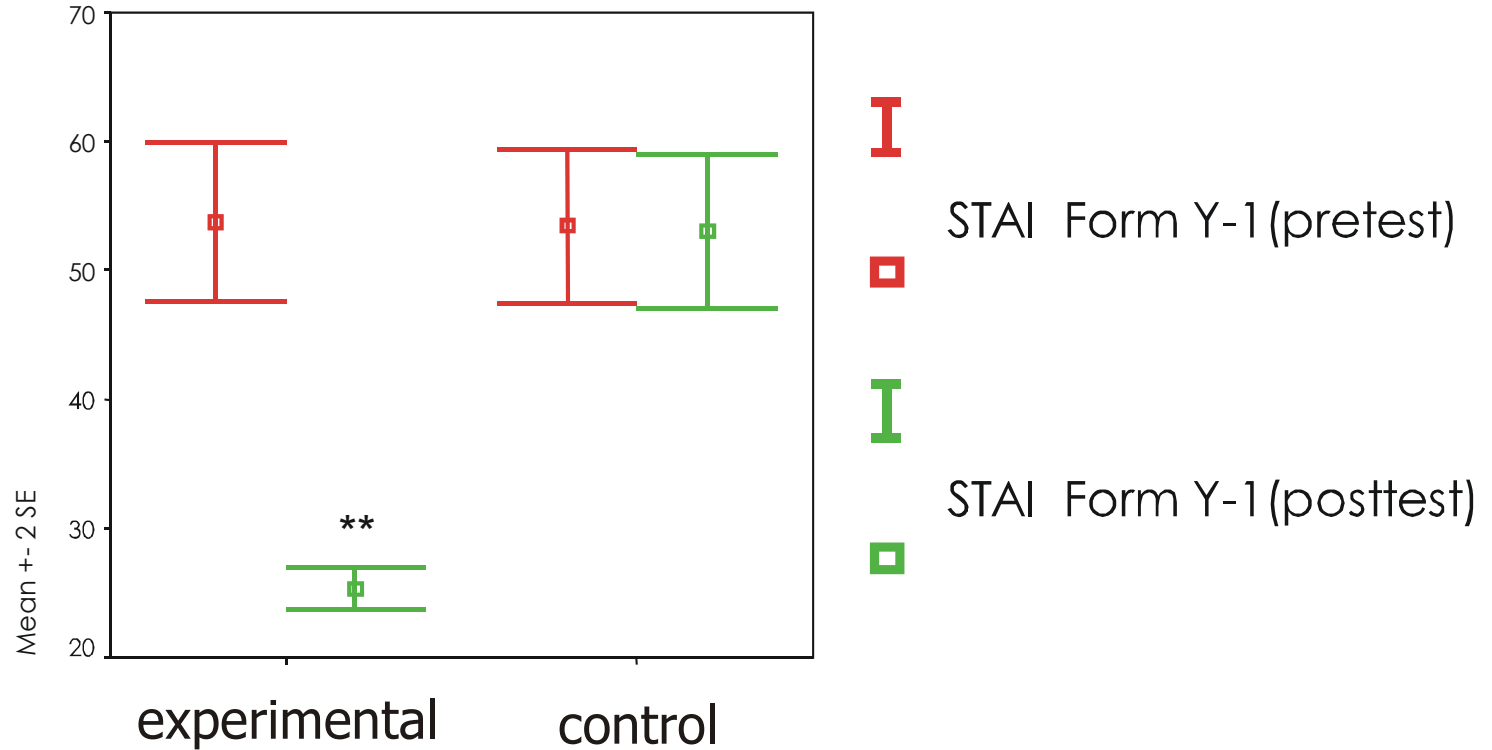
**** statistically significant (p<0.0005)**

Anxiety STAI-Y1

Repeated measures analysis of variance

ANOVA (F=137.361, $p < 0.0005$)

Anxiety STAI-Y1



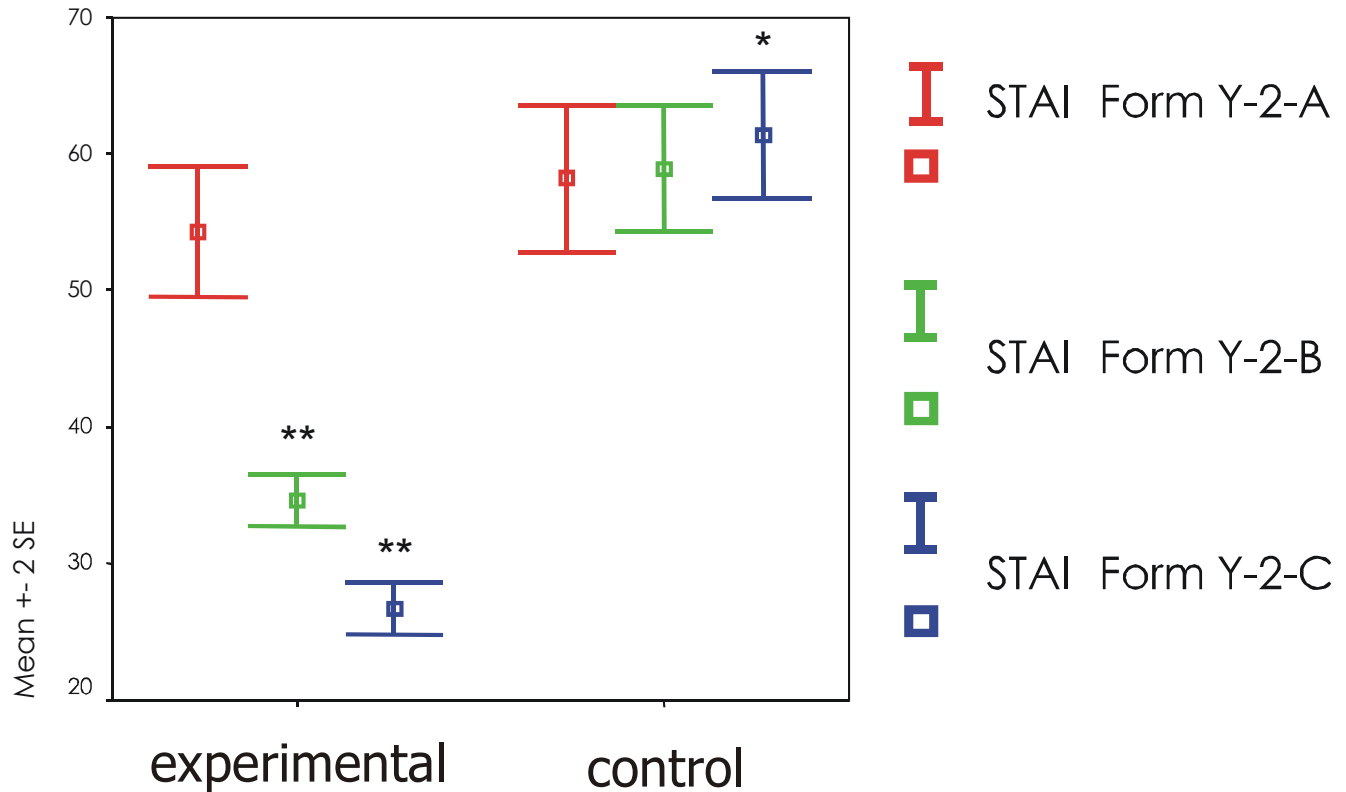
**** statistically significant ($p < 0.0005$)**

Anxiety STAI-Y2

Repeated measures analysis of variance

ANOVA (F=77.055, $p < 0.0005$)

Anxiety STAI-Y2



*** statistically significant (p<0.05)**

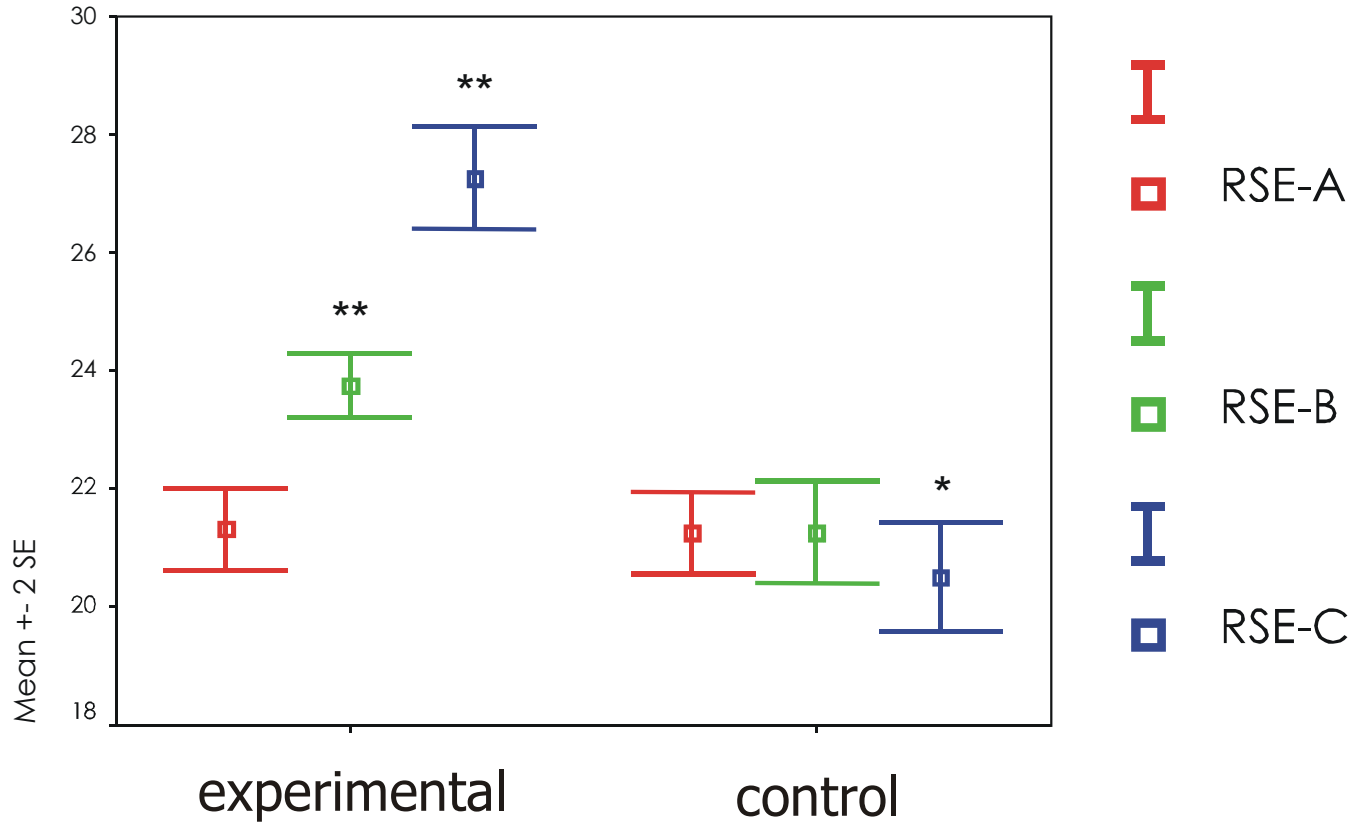
**** statistically significant (p<0.0005)**

Self-esteem RSE

Repeated measures analysis of variance

ANOVA (F=131.150, $p < 0.0005$)

Self-esteem RSE



*** statistically significant ($p < 0.05$)**

**** statistically significant ($p < 0.0005$)**

POSSIBLE MECHANISMS FOR EFFECTIVENESS OF RELAXATION

- 1. A patient expectation**
- 2. An attentional diversion**
- 3. An induction of a state of deep relaxation**
- 4. An inspiring hope**
- 5. A sense of control**

LIMITATIONS OF THE STUDY

Statistical significance vs. clinical significance

Short-term effectiveness vs. long-term

Small sample-size

Psychological evaluation vs. immunological markers