**Topic:** Mindfulness-Based Stress Reduction (MBSR) mechanism -neural or heart rate variability or psychological

**Question:** Does MBSR have an effect on cardiovascular response?

**Article Citation:**

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**Study Level of Evidence, What Type of Study?**

Level I: _X_RCT
Level II: ___Cohort trial ___Case control trial ___Nonrandomized control trial
Level III: ___Case control ___no pre/posttest
Level IV: ___Single case study ___Case series ___No comparison group
Level V: ___Descriptive study ___Narrative review ___Expert opinion

**Purpose of Study: Is purpose clear?** _X__yes ___no

**Describe researchers question/purpose:**

The purpose of the study is to examine the effects of Mindfulness-Based Stress Reduction intervention on cardiovascular and cortisol activity during acute stress.

**METHODS**

**Were there any biases or ethical concerns in the study design?**

The participants were self selected which may be a bias of the study. The control group was a "wait-list" group of participants. Because they are waiting to undergo MBSR the control group may be biased with a preset mindset about mindfulness, its benefits, and "getting into the flow".

**POPULATION**

**Who was the sample, how many subjects?**

- The sample consisted of community residents who were recruited by advertisements. People interested were offered participation in the stress reduction program, free of charge in exchange for participation in the study.
- N= 88 healthy community dwelling individuals who reported feelings of elevated stress
- N=85 (d/t 3 drop-outs),researches did not indicate which group N # dropped out of, unknown N= MBSR, N= wait-list
- n= 60 females, n= 25 males
- M age= 46.1 years

**Inclusion Criteria:**

During the telephone intake, potential participants were eligible if they answered with regularly or often to the question "how often would you say you feel depressed?"

**Exclusion Criteria:**

- serious psychopathology or a serious
- cardiovascular disease

**What was the intervention? Frequency, setting?**

The intervention consisted of 8-weekly 159-minute group sessions and 45 minutes of practice at

home. The training used a standard protocol (Mindful-Based Stress Reduction) MBSR. Topics in the sessions included mindfulness psychoeducation, practice, and sharing.

| **Relevant outcomes to OT?** | **How measured?** |
|---|---|
| 1.) Daily life stress | Perceived Stress Scale |
| 2.) Acute stress | Negative Affect Scale |
| 3.) Blood pressure | Blood pressure instrument |
| 4.) Heart Rate Variability | ECG |

(indicates psychological and physical health)

**Were the tests valid? Explain:**
The self-questionnaire psychological assessments are standardized widely used tests with established validity. Additionally the tests for physiological status of heart rate variability, systolic/diastolic blood pressure, and salivary cortisol have established validity.

**Were the tests reliable? Explain:**
All tests have established reliability.

**RESULTS CONCLUSIONS CLINICAL IMPLICATIONS**
**What were the findings? Was there:**
**Statistically significant change?**

- MBSR group PSS statistical significance with decreased perceived stress ($p$ <0.02)
- MBSR group Negative affect statistical significance with decreased affect ($p$ <0.036) MBSR group exhibited smaller systolic and diastolic blood pressure stress-related changes

**Clinically significant change? Explain.**
Participation in the MBSR program has a noticeable effect on daily life because it has proven to reduce blood pressure (although not significantly) and significantly decreases perceived stress, and negative affect.

**What did the author conclude?**
Even though there were no differential effects in heart rate variability and salivary cortisol levels during acute stress, there was a decrease in overall blood pressure in the MBSR group compared to the control group. Also, blood pressure responses to the stressor became smaller for the MBSR group in the post intervention. Finding this is encouraging and it could be a complementary intervention for blood pressure control.

**My Brief Summary**
**What I see as study strengths:** One strength seen was the fact that a positive outlook for the blood pressure change to a lower level after MBSR was prevalent in other studies and showed the same correlation in this study. Therefore it supported previous evidence that could lead to claiming MBSR helps lower blood pressure in most individuals. Furthermore, the group was variable, men, women, average age around 46, so there was not a bias in demographics. The study also used a long period of time to compare people to their previous self, including a well-taught leader of psychoeducation and meditation.

**What I see as limitations:** The limitations were as follows; technical problems in the assessment of blood pressure resulted in missing data, the short recovery period limited effects that may have been observed using longer recovery periods, especially considering findings that MBSR decreases rumination (Campbell et al., 2012), which has been shown to prolong

cardiovascular responses to stressors, the mindfulness trainer had limited teaching experience, which may have attenuated effects, and the participants were self-selected.

**How are the study's findings relevant to OT?**
All patients who are seeking occupational therapy services are dealing with some sort of stress. Whether it is a mental illness such as depression, a chronic illness such as cancer, or a physical disability such as losing a limb, the patient is going to be experiencing stressful inner worries, stigmatizing environments, and major changes in their lives. All of this stress can lead to an increase in blood pressure. The study's findings that the Mindfulness-Based Stress Reduction (MBSR) intervention will reduce blood pressure in stressful situations can be applied to almost all occupational therapy practices because of this.

**How do I intend to use these results?**
Based on positive results that the Mindfulness-Based Stress Reduction (MBSR) intervention has shown favorable effects on various psychological outcomes in both healthy and patient samples, I would use this intervention to treat patients in stressful situations such as having physical disabilities, chronic illnesses, and issues in mental health. All of these health statuses are very disabling and can cause onset of stress.