Blood Pressure Reactivity in the Context of Emotion Processing and Regulation: Systematic Review

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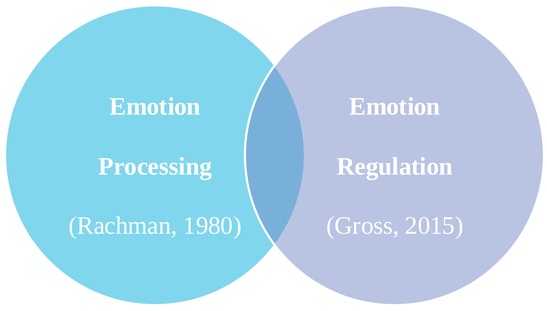
Introduction

- Emotions influence our **health, choices, relationships, and adaptability.**
- **Emotion regulation (ER) involves** managing emotions,
  while **blood pressure reactivity (BPR**) refers to changes in blood pressure due to stress.
- This review explores **the link between BPR and ER strategies:**
  Cognitive Reappraisal and Expressive Suppression
- Research suggests **cognitive reappraisal** improves cardiovascular responses,
  While **expressive suppress**ion may increase blood pressure reactivity.



Aims

- To review empirical literature on **the relationship between blood pressure reactivity and emotion regulation (ER) strategies.**
- To explore how **ER** strategies modulate **acute BPR** in response to **stress or emotionally charged situations.**

How does blood pressure reactivity influence emotion processing and regulation strategies?

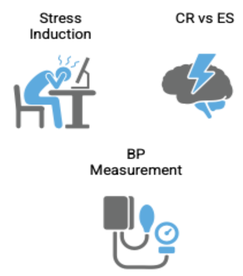
Methods

- Systematic Review was written following the **PRISMA (2020)** guidelines;
- Searched **on PubMed, Google Scholar**, and **Scopus** databases

Search string:

("**Blood pressure reactivity" OR "Cardiovascular reactivity" OR "Acute blood pressure")**

AND ("Emotion Regulation" OR "Emotion processing" OR "Stress response" OR "Reappraisal" OR "Suppression")



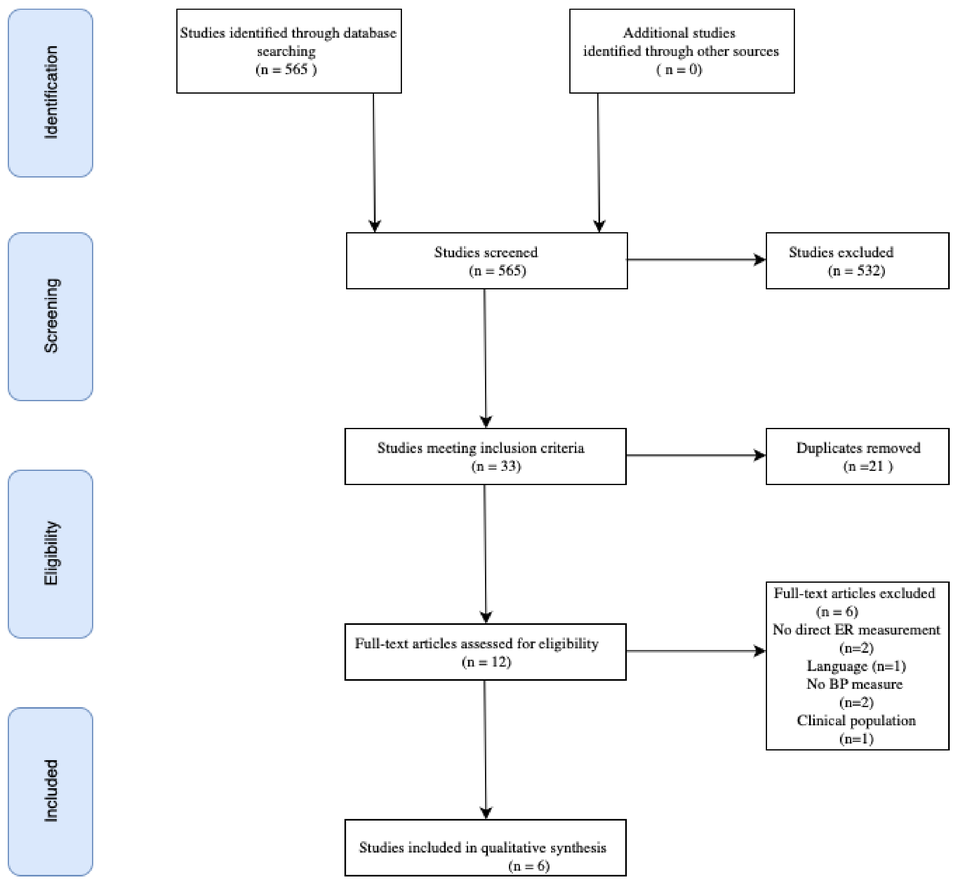
The following eligibility criteria were applied:

- **Population**: Individuals of all ages
- **Intervention**/Exposure: Stress stimulus
- **Comparison**: CR vs ES or ER vs Controls?
- **Outcomes**: Blood Pressure Measurement
- **Time of Publication**: 2010 and onward
- **Study type**: Studies written in English
- Studies that did not meet the eligibility criteria were **excluded** from **the qualitative synthesis.**

Results

Key Findings

- **6 studies** were ultimately included in the qualitative synthesis
- Total of 886 participants across studies **(63% female, 37% male)**
- Mean age across studies was **24 years**
- Studies compared **effects of cognitive reappraisal vs. expressive suppression on cardiovascular responses**



Cognitive Reappraisal

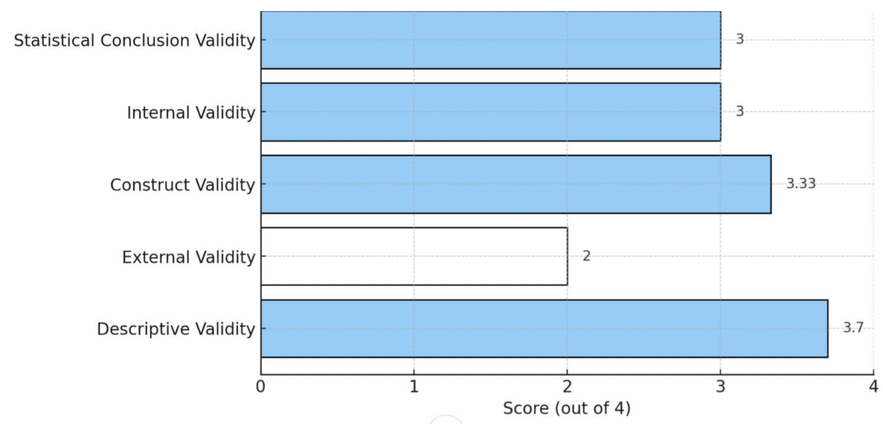
- Consistently associated with **lower or no change in blood pressure reactivity**
- Linked to more **adaptive cardiovascular responses** to stress
- Associated with **lower systolic and diastolic blood pressu**re, and reduced psychological stress

Expressive Suppression

- Generally linked to **increased physiological reactivity and blood pressure**
- Associated with **elevated systolic and diastolic blood** pressure during stress tasks
- Correlated with **exaggerated cardiovascular responses** to stress

Quality

• Studies were evaluated using **Farrington (2003)** criteria to ensure methodological rigor in the systematic review;



- In conclusion, the studies generally exhibit **good to very good validity** across most criteria, with **external validity** being the main area for **potential improvement.**

Discussion

- **Differential effects** of ER strategies.
- **Habitual** vs **Instructed** ER
- Physiological specificity**: SBP vs DBP**
- Stimulus effects: **Valence**
- **Trait** ER vs **State** ER
- Emotion **Intensity**

Limitations

- **Limited** generalizability
- **Heterogeneity** in Studies
- Limited **age diversity**
- Reduced **real-world** relevance
- No **long-term** BP data
- Potential **sampling bias**
- Gender **imbalance** (63% F)

Conclusions

- Cognitive reappraisal appears to be **a more adaptive emotion regulation strategy** for cardiovascular health
- Expressive suppression **may have physiological costs and increase cardiovascular risk**
- More research needed to further elucidate these relationships, **especially in real-world settings**

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