The Effect of Dogs on Acute Stress Reactivity: A Systematic Review and Meta-Analysis

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Introduction

Stress Levels at a Record High

- Stress is a global health concern, with prevalence rising substantially over the past decade[1]
- Researchers are seeking effective strategies to mitigate its detrimental impact[2]

Social Support Theory

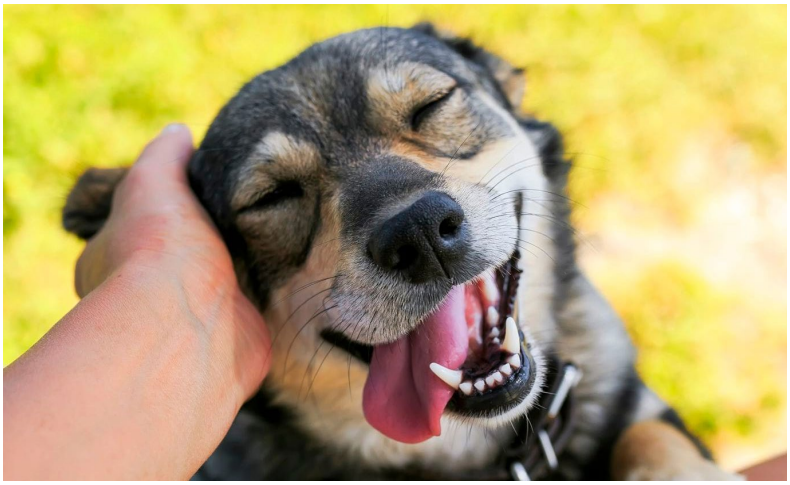
- Social connection promotes health and stress resilience[3]
- The social buffering hypothesis suggests that social support reduces stress reactivity by reshaping stress appraisal and coping[4]

Stress-Buffering Role of Dogs

- Studies are now exploring whether dogs can provide similar social support as other humans
- Dogs offer unique nonjudgemental support, leading them to sometimes be even more effective at reducing stress[5]
- Although the literature generally supports the stress-buffering role of dogs, findings are mixed

Research Objective

Synthesize the research on how dogs impact psychophysiological stress reactivity in response to an experimental stressor



Methods

Search Strategy

- Eight databases were searched from inception to Nov 2023

9,891 articles screened for relevance → **162** articles assessed for eligibility → **28** articles included

Eligibility Criteria

- English language, quantitative measurement of stress, introduced an experimental stressor, and had a control or comparison condition

Meta-Analysis

- Three-level meta-analytic models were conducted to estimate overall effects of dog presence on **heart rate, systolic and diastolic blood pressure, self-reported stress,** and **cortisol**

Results

Study Characteristics across N = 28 Articles; N = 30 Studies

- Average sample size N = 68
- 59% female, Mean Age = 25.7, 82% White
- Most studies were conducted in the US after 2010

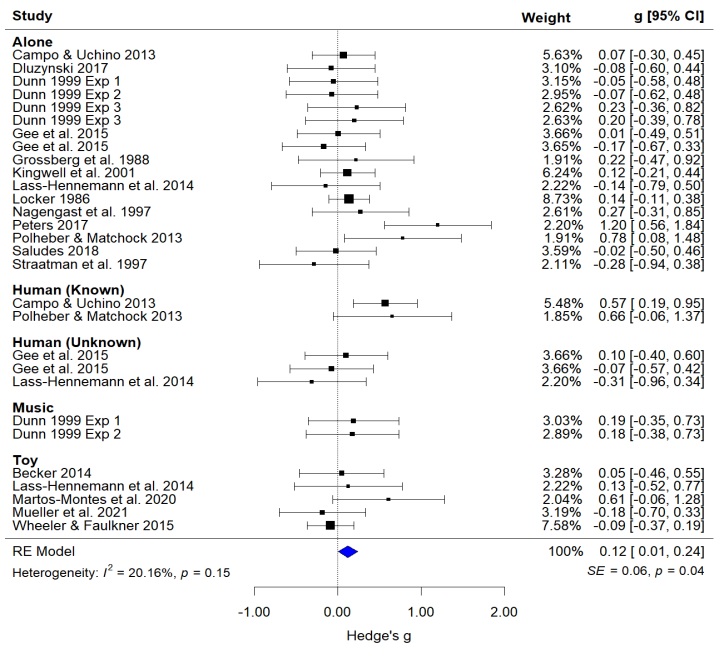
Experimental Stressors

Comparison Conditions

Type of Dog

Meta-Analysis Results (N = 2,027, k = 92)

- Dog presence was associated with **significantly reduced heart rate reactivity** compared to control conditions. *n = 19, k = 29, g = 0.12; visualized in forest plot below*
- Dog presence was associated with **significantly reduced self-reported stress reactivity** compared to control conditions. *n = 9, k = 15, g = 0.29*
- Dog presence was *not* associated with systolic blood pressure (*g = -0.01),* diastolic blood pressure (*g* = 0.06), or cortisol (*g = -0.03*)



Conclusion

- Results suggest that the social support provided by a dog can buffer subjective and physiological stress reactivity
- Future research is required to identify the mechanisms driving these effects, in order to understand *when* and *for whom* dogs may mitigate stress most effectively

References

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