

Introduction

Background

- Emotion dysregulation is a risk factor for many forms of psychopathology (Vasilev et al, 2009).
- Mindfulness based therapies, such as Dialectical Behavioral Therapy (DBT) are often effective for treating disorders characterized by emotion dysregulation (Khouri et al, 2013).
- Low respiratory sinus arrhythmia (RSA) is a biological measure associated with psychopathology and emotion dysregulation (Porges, 2007).
- RSA is responsive to environmental input and can change over time (Gross, 2002).
- It is currently unknown whether mindfulness results in improvements in RSA in populations characterized by emotion dysregulation.

Hypothesis

- We hypothesized that symptoms of psychopathology would correlate with emotion dysregulation, that psychopathology and emotion dysregulation would be associated with low baseline RSA, and that a brief mindfulness task would raise RSA.

Methods

Participants

- Six adult females referred to DBT skills group from their individual therapists.
- Age: $M=32$ ($SD=13.8$)
- Race: 83% Caucasian, 17% African American
- Income: $M=\$13,358$ ($SD=\$12,025$)

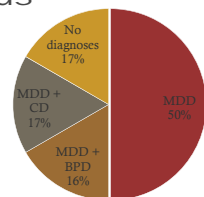


Figure 1. Diagnoses present in our sample as indicated by the SCID.

Procedure

- Participants were given the Semi Structured Clinical Interview (SCID) for Major Depressive Disorder (MDD), Borderline Personality Disorder (BPD), Conduct Disorder (CD), and Antisocial Personality Disorder (ASPD).
- Participants completed the Beck Depression Inventory (BDI), and the Difficulties with Emotion Regulation Scale (DERS).
- RSA levels were collected during a 5 min baseline and a 5 min mindfulness task.

Results

- Correlation coefficients were calculated among measures of psychopathology (BDI and SCID), emotion dysregulation (subscales of the DERS), and RSA.

Table 1. Correlations among subscales of the DERS and symptoms of psychopathology.

	Impulse	Nonacceptance	Goals	Strategies
Depression (BDI)	.79	.72	.52	.45
Depression (SCID)	.72	.62	–	–
BPD (SCID)	.61	.75	.74	.72

DERS subscales: impulse control difficulties, nonacceptance of emotional responses, difficulties engaging in goal directed behavior when distressed, and limited access to emotion regulation strategies.

- Correlations between symptoms of MDD, BPD, and subscales of the DERS are presented in Table 1.
- Correlations were not found between symptoms of ASPD or CD and subscales of the DERS.
- Measures of psychopathology and emotion dysregulation were not correlated to RSA.
- A repeated measures ANOVA was used to analyze changes in RSA between the baseline and mindfulness task.
- **RSA was higher during the mindfulness task than the baseline for all participants regardless of symptoms of psychopathology or emotion dysregulation (see figure 2).**

Discussion

- Mindfulness has been shown to increase RSA in healthy adult samples.
- Our findings indicate that even brief mindfulness instruction increases RSA in a complex clinical sample as well.
- **RSA may be a useful biological indicator of improvements associated with mindfulness based therapies in the complex clinical populations where such therapies are employed.**
- Future research should seek to understand how mindfulness improves RSA despite differences in psychological diagnoses and variation in emotion regulation strategies.
- Research should also examine whether improvements due to mindfulness are mediated by improvements in emotion regulation.

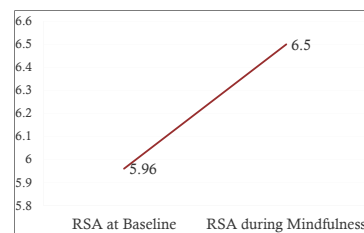


Figure 2. Plot of mean change in RSA due to a mindfulness task. RSA at baseline: $M=5.96$, $SD=1.44$. RSA during mindfulness: $M=6.5$, $SD=1.85$.

Key References

- Gross, J. J. (2002). Emotion regulation: Affective, cognitive, and social consequences. *Psychophysiology*, 39, 281-291.
- Khouri, B., et al. (2013). Mindfulness-based therapy: A comprehensive meta-analysis. *Clinical Psychology Review*, 33, 763-771.
- Porges, S. W. (2007). The polyvagal perspective. *Biological Psychology*, 74, 116-143.
- Vasilev, C. A., et al. (2009). Correspondence between physiological and self report measures of emotion dysregulation: A longitudinal investigation of youth with and without psychopathology. *Journal of Child Psychology and Psychiatry*, 50, 1357-1364.

For further information

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