Have You Tried Yoga?:
The Wellness Effects of a Yoga Intervention on Young Adults with ADHD

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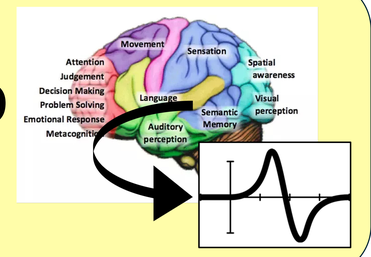


Background

ADHD

- Diminished quality of life (QoL) correlated with ADHD symptom severity
- Adult ADHD associated with emotional dysregulation

Yoga

- Essential interconnection of 3 components
  - asana – posture, movement, exercise
  - dharana – nonjudgement, directed awareness
  - pranayama – link with movement, attentional focus
- Synergetic effects on top-down and bottom-up brain network
- Wide range of associated physical, psychological, and cognitive benefits

Research Question

How does yoga affect QoL and emotional regulation in young adults with ADHD?

Participants

Participant characteristic	Yoga group		Movement group		Total	
	n	%	n	%	n	%
Gender						
Man	5	33.33%	3	23.08%	8	28.57%
Woman	8	53.33%	7	53.85%	15	53.57%
Non-cisgender	2	13.33%	3	28.08%	5	17.86%
Hispanic/Latino [a]	2	13.33%	2	15.38%	4	14.29%
Race						
American Indian	0	0%	1	7.69%	1	3.57%
Asian	2	13.33%	1	7.69%	3	10.71%
Black or African American	3	20%	0	0%	3	10.71%
White	9	60%	10	76.92%	19	67.86%
Other	1	6.67%	1	7.69%	2	7.14%
ADHD sub-type						
Hyperactive/Impulsive	1	6.67%	2	15.38%	3	10.71%
Inattentive	7	46.67%	7	53.85%	14	50%
Combined type	7	46.67%	4	30.77%	11	39.29%
Regularly taking medication prescribed for ADHD [a b]	10	66.67%	5	38.46%	15	53.57%
Age (M ± SD)	20.33 ± 1.76		19.31 ± 1.32		19.86 ± 1.63	

Note. $N = 28$ ($n = 15$ for the yoga group and 13 for the movement group).

[a] Reflects the number and percentage who answered "yes" to this question.

Conclusions & Future Directions

- At two months of a weekly hour-long class, yoga does not produce additional benefits in young adults with ADHD compared to non-yoga exercise on the constructs of:
  - subjective stress, quality of life, ADHD symptom severity, emotional regulation
- Yoga-based behavioral interventions may be best suited as secondary or auxiliary treatments due to their small effect sizes and mechanisms of complex interaction across lifestyle factors
- Future research should continue investigating the dose dependent relationship of yoga (i.e., what scale of practice is sufficient to produce given benefits in different populations)
- Usage of measurements conductive to frequent repetition may increase study feasibility

Methods

Recruitment
$n_{yoga} = 22$
$n_{movement} = 23$

Pre-test Data Collection
$n_{yoga} = 20$
$n_{movement} = 20$

Intervention
- 8-week physical activity wellness intervention
- Weekly 50-minute group exercise class
- Instructor certified as 1000-hour yoga instructor & ADHD life coach

Movement Intervention:
- Aerobics style exercise
- Comparable level/intensity of exercise

Yoga Intervention:
- Vinyasa yoga
- Interoceptive exercises
- Focused attention & breathwork mindfulness

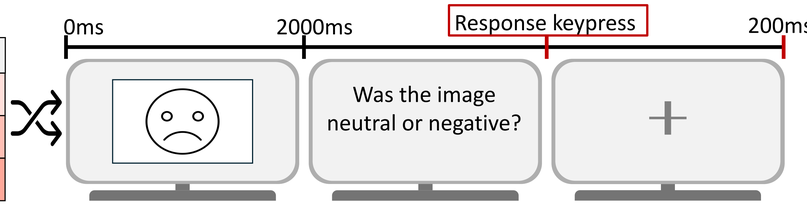
Post-test Data Collection
$n_{yoga} = 16$
$n_{movement} = 13$

Included in Final Analysis
$n_{yoga} = 15$
$n_{movement} = 13$

Self-report Measures
- Perceived Stress Scale
- Adult ADHD Self-Report Scale
- Adult ADHD Quality of Life Scale

Emotional Regulation Task
- 120 neutral & negative IAPS images
- Split into 4 emotional salience levels based on IAPS rating

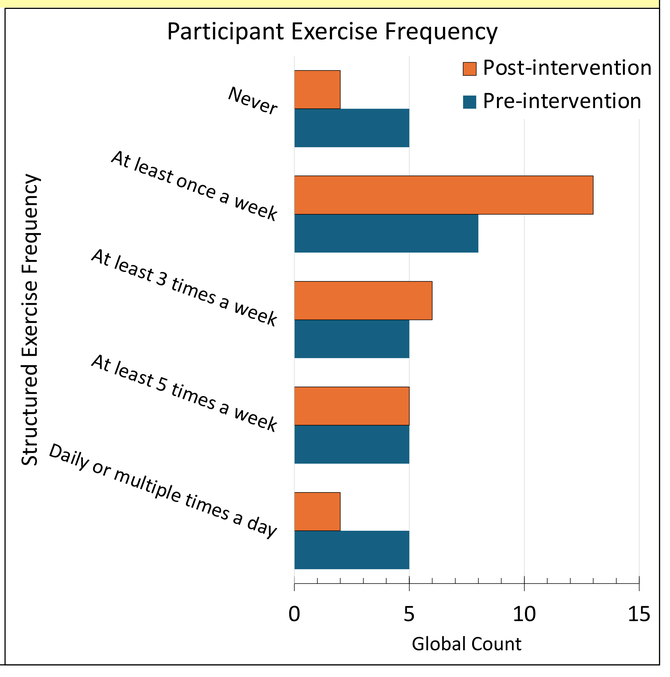
Neutral
Low negative
Med negative
High negative



Results

Self-report Measures	*Main effect of Time*				*Interaction effect of Time x Group*			
2x2 Anova	*F*	df	*p*	η^2	*F*	df	*p*	η^2
PSS	.002	1, 26	.968	.000	1.04	1, 26	.317	.038
AAQoL total	< .001	1, 26	.998	.000	.229	1, 26	.636	.009
life productivity	.005	1, 26	.944	.000	.189	1, 26	.667	.007
physiological health	.259	1, 26	.615	.010	1.232	1, 26	.227	.045
life outlook	.090	1, 26	.767	.003	.090	1, 26	.767	.003
relationships	.001	1, 26	.980	.000	.131	1, 26	.720	.005
ASRS A	1.334	1, 26	.259	.049	6.161	1, 26	**.020**	.192
ASRS B	19.899	1, 26	**< .001**	.434	.403	1, 26	.531	.015

Emotional Regulation	Accuracy Rates				Response Times			
Task 2x3x2 ANOVA	*F*	df	*p*	η^2	*F*	df	*p*	η^2
Valence	23.580	3, 78	**< .001**	.476	2.712	3, 78	.051	.094
Time	1.618	1, 26	.215	.059	16.000	1, 26	**<.001**	.381
Valence x Group	.240	3, 78	.868	.009	1.103	3, 78	.353	.041
Time x Group	2.126	1, 26	.157	.076	1.431	1, 26	.242	.052
Valence x Time	1.747	3, 78	.164	.063	.345	3, 78	.793	.013
Valence x Time x Group	.670	3, 78	.573	.025	.495	3, 78	.666	.019



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