



Department of Emergency Medicine
DARTMOUTH-HITCHCOCK MEDICAL
CENTER

Biophilic Art Time in the “Cave” (BAT-Cave) to Improve Clinician Well-Being

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Providing clinical care is often ***stressful*** & burnout rates are high

A sterile, disharmonious workspace in the Emergency Room:

- Contributes to the stress of practicing Emergency Medicine
- Decreases personal sense of well-being

There exists compelling evidence that
art in hospitals improves patient
health and well-being



Biophilia Hypothesis

“The idea that humans possess an innate tendency to seek connections with nature and other forms of life”

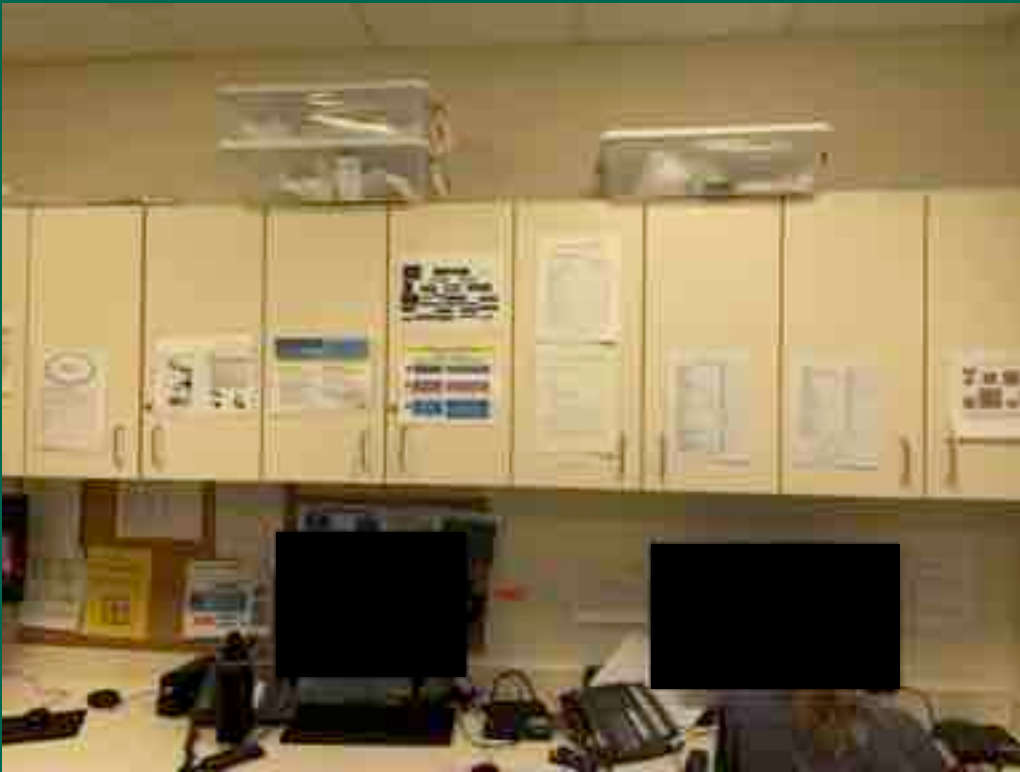
Proposed Solution

The creation of a *rotating art gallery* in the DHMC Emergency Room “Cave” based on the Biophilia Hypothesis will:

- Provide positive distraction and therapeutic diversion
- Improve healthcare providers' workplace well-being



The “Cave” Transformation



Our Rotating Art Gallery



Survey to Measure Affective Well-Being

Daniel's five-factor measure of affective well-being

In the section below, please indicate how you feel *right now, that is, at the present moment* *.

Please circle the most appropriate number on the six-point scale, where 1 = not at all to 6 = very much.

Happy	1	2	3	4	5	6
At ease	1	2	3	4	5	6
Anxious	1	2	3	4	5	6
Annoyed	1	2	3	4	5	6
Motivated	1	2	3	4	5	6
Calm	1	2	3	4	5	6
Tired	1	2	3	4	5	6
Bored	1	2	3	4	5	6
Gloomy	1	2	3	4	5	6
Active	1	2	3	4	5	6

Measuring Affective Well-Being

- Convenience sampling
 - Open enrollment of individuals who came through the “Cave” or worked there

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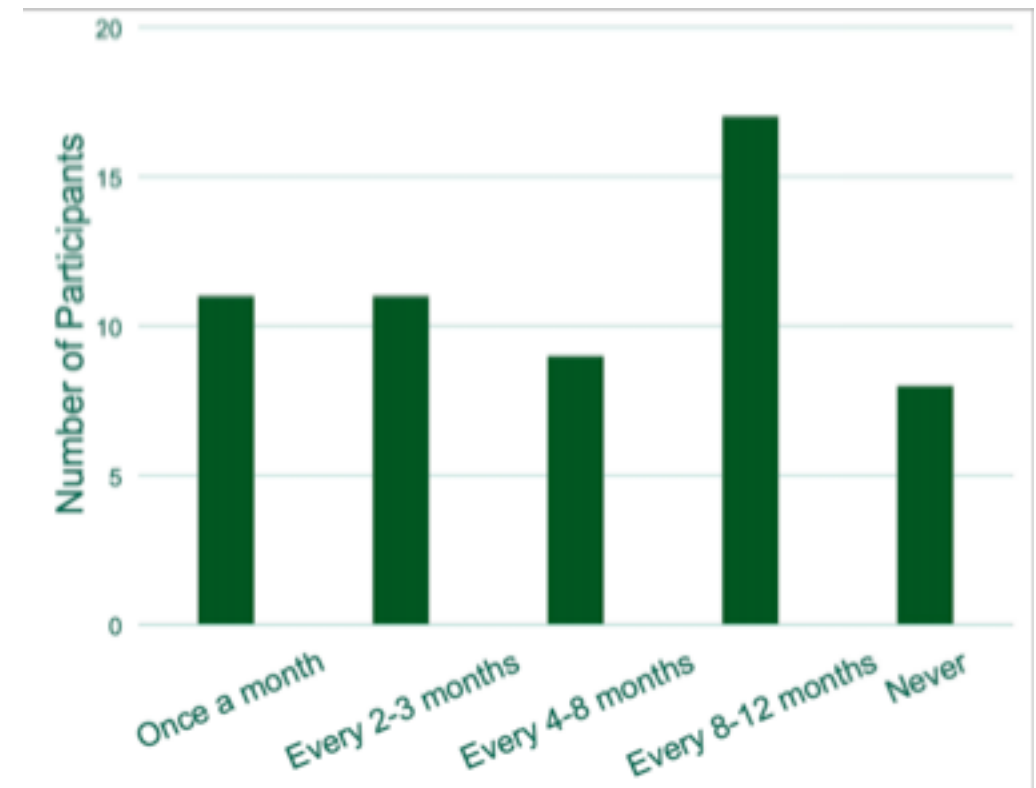
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1 minute

Study Participant Demographics

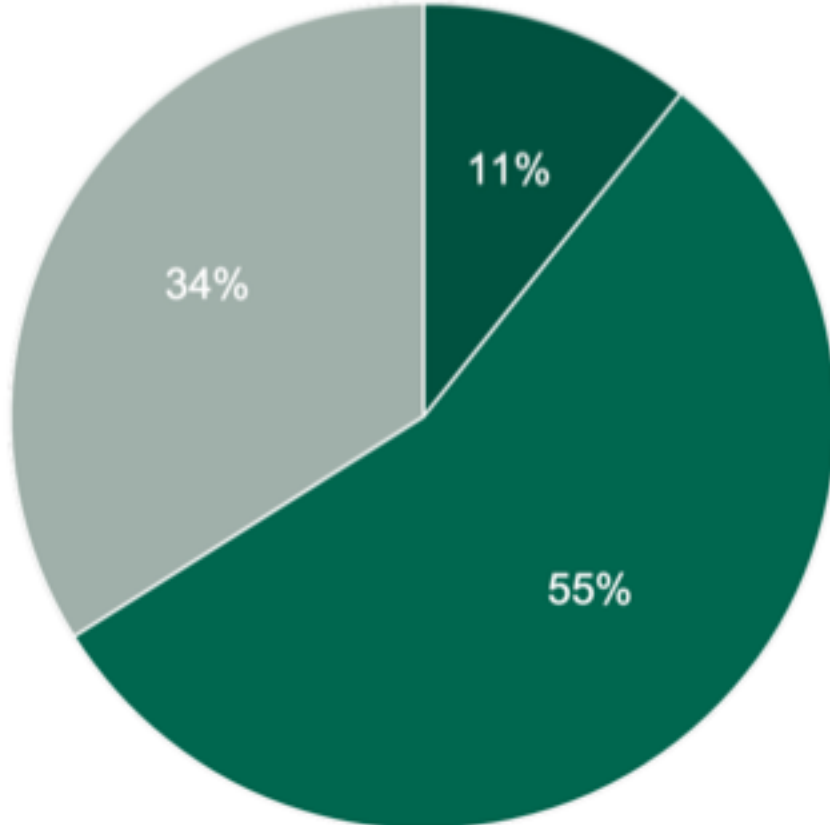
	Age and Role	N=56
Age		
	Average (SD)	36.2 (11.7)
Role		
	Resident, EM	14
	Resident, Non-EM	10
	Attending, 2-5 years	4
	Attending, 6-10 years	2
	Attending, >10 years	12
	Medical Student	6
	APP	5
	Nurse	3

Attend Cultural Activities



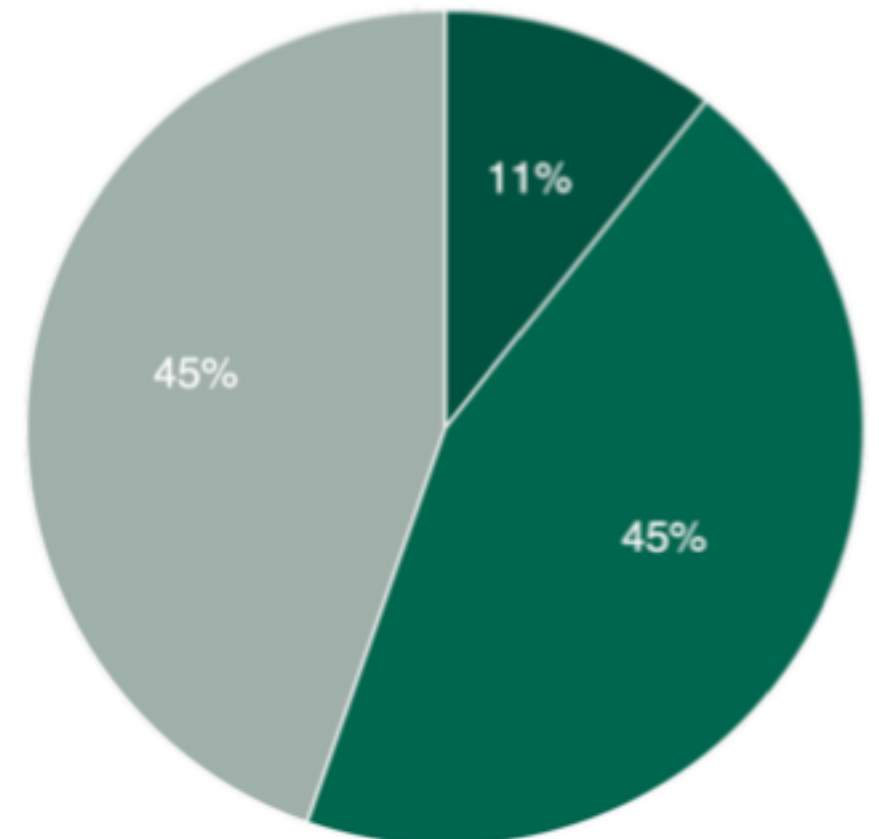
Study Participant Demographics

Felt Overwhelmed During Shift



■ Yes (n = 6) ■ No (n = 31) ■ About average (n = 19)

Busy Shift



Intervention associated with temporary decrease in negative feelings and increase in positive feelings



Survey Item	Pre-Art Score Mean (SD)	Post-Art Score Mean (SD)	p-value
Annoyed	2.4 (.3)	1.9 (1.0)	0.03
Tired	3.9 (1.3)	3.2 (1.3)	0.01
Anxious	2.5 (1.0)	2.0 (0.9)	0.01
Bored	2.6 (1.2)	2.3 (1.1)	0.10
Gloomy	2.2 (1.2)	1.8 (0.9)	0.06

Intervention associated with temporary decrease in negative feelings and increase in positive feelings

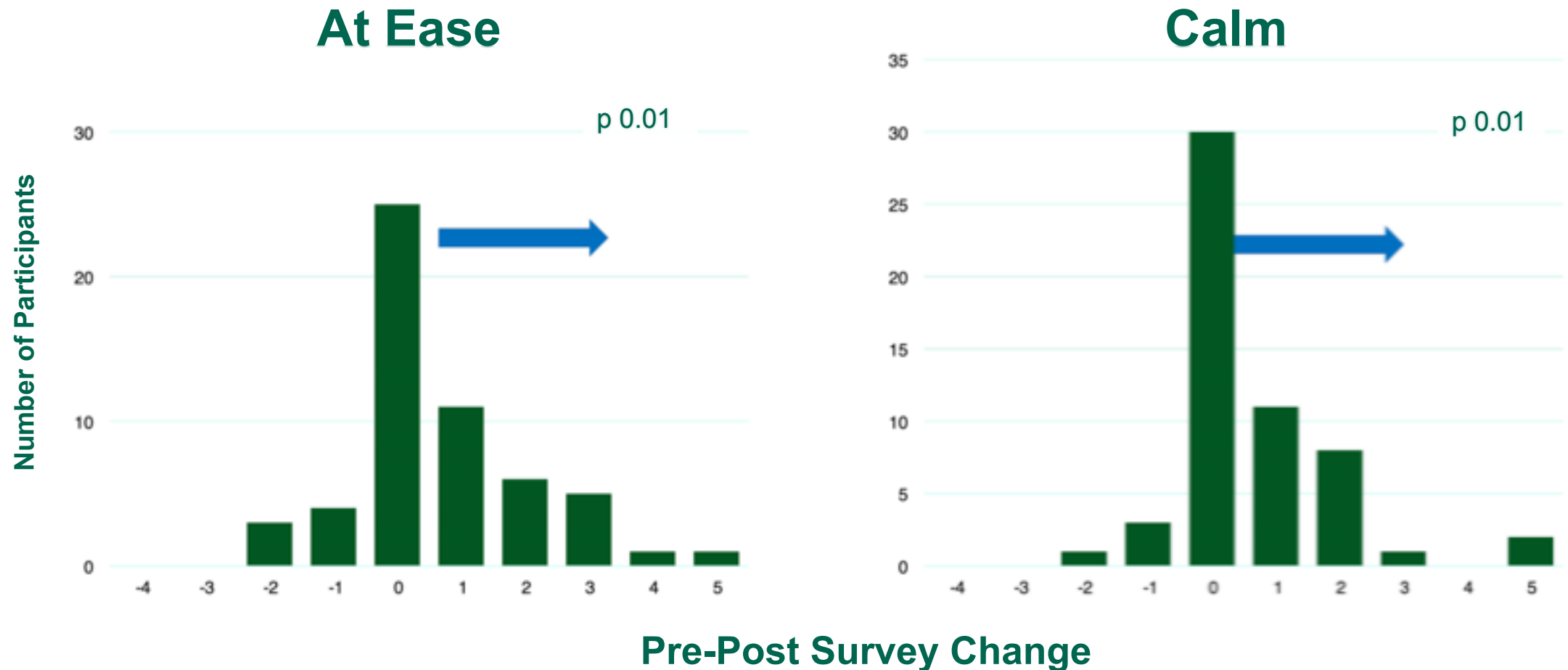


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Gloomy	2.2 (1.2)	1.8 (0.9)	0.06
At Ease	3.3 (1.2)	3.9 (1.3)	0.01
Calm	3.6 (1.3)	4.2 (1.1)	0.01
Active	3.2 (1.0)	3.4 (1.2)	0.20
Enthusiastic	3.4 (1.2)	3.7 (1.2)	0.27
Happy	3.8 (1.1)	4.1 (1.1)	0.12

Intervention decreased sense of annoyance, tiredness, and anxiety



Intervention increased feeling at ease and sense of calm



Conclusions

- Engaging with art in the ED is *feasible* for clinicians
- Integrating nature-based art into the ED resulted in a statistically significant:
 - Decrease in sense of anxiety, tiredness, and annoyance
 - Increase in sense of calm and feeling at ease

Project Limitations

- Small sample size and convenience sampling created selection bias
- Trend towards overwhelmed and busy clinicians not participating
- Cause of change in affective factors remains unclear
 - Related to mindfulness activity or biophilic art?

Future Directions

- Increase study population to include all clinicians who interact with art gallery
 - Grow sample size with opt-out rather than opt-in format
- Directly compare mindfulness, biophilic art, and non-biophilic art



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Thank You!

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References

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