



Multi-Sensory Environments & Student Mental Health



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Learning Objectives

Discuss benefits of multi-sensory experiences for college students.

Identify strategies college students use to cope with stress.

Identify sensory elements preferred by students.

Evaluate the factors influencing the use of multi-sensory environments by students





The Backstory

Stantec + The Interior Design Educators Council

Innovation Partnership Grant

INTERIOR DESIGN EDUCATORS COUNCIL
IDECE

IGNITING DESIGN
PASSION

Cultivating the next generation of interior design leaders through academic research, collaboration, and community.

Interior Design Educators Council (IDECE) empowers design educators and students with tools to ignite passion and fuel learning. Explore the growing library of innovative teaching resources, respected academic research, accredited design programs, scholarship opportunities, and community conferences available to IDECE members.

[LEARN MORE](#) →



Stantec Innovation Partnership Grant

CALL FOR PROPOSALS

Stantec is proud to serve IDEC as a Premier Partner and to offer the opportunity to work together, as practitioners, educators, and students, to solve problems creatively and improve the quality of life for the communities we serve and inhabit.

At Stantec, we design with community in mind, and that means being on the forefront of research and innovation.

*We are pleased to renew the **Stantec Innovation Partnership Grant** of \$3,000 for 2023. The purpose of this grant is to encourage research partnership between industry and academia.*

This grant invites a student/academic research team to partner with a Stantec practitioner to explore a question of interest within one of 3 themes listed below, as they pertain to either workplace, healthcare, or educational facilities.



Partnership Grant

Three themes:

- Design Justice
- Innovation in Technology
- Resilience

Blind submissions received & reviewed by IDEC, ranked, and top 3 sent to Stantec for selection.

Selection Criteria

PROPOSALS WILL BE EVALUATED BASED ON THE FOLLOWING CRITERIA.
THE SUCCESSFUL PROPOSAL WILL PROVIDE:

1

A Compelling Question

The research initiative will be creative, forward-thinking, and have the potential to make a significant impact for how interior designers improve quality of life. The proposal will demonstrate how this research relates to one of the themes within either a workplace, healthcare or educational capacity.

2

A Comprehensive Workplan

A workplan outlining the scope of work to be undertaken and the associated timeline to achieve the various deliverables and milestones. It will also describe the roles and strategic integration of the interior design educator, student, and practitioner, and show how each will be an active participant how their strengths and perspectives will be leveraged.

3

Sound Research Methodology

The research methodology will be well-articulated using any combination of quantitative or qualitative research methods. The research methodology will meet all ethical standards and be applicable to the research question.

4

Application to Practice

The proposal will demonstrate how this research can be applied to help shift design practice, processes and outcomes.

5

Student / Academic qualifications

Student and educator CV will demonstrate rigor and academic excellence.



Past Grant Topics

Tacit Mentorship in the Hybrid Workplace (Lawrence Technological University)

Resilience in Learning & Working Environments:
Examining Design Impact on Interior Design Students &
Professionals (Baylor University)





Academia + Practice

Research driven design solutions

Feedback loop

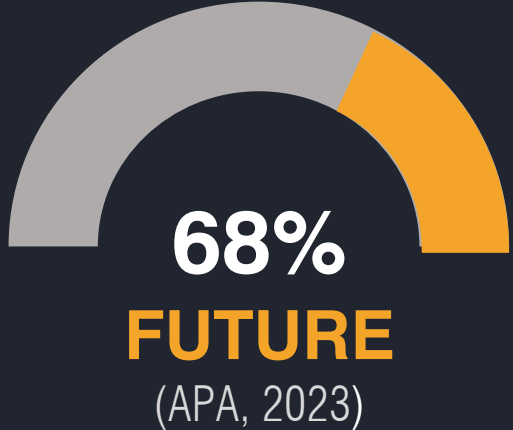
Student engagement and preparedness





Why stress and anxiety?

56%
CHRONIC
(Flaherty, 2023)



76%
DISTRESS
(ACHA, 2023)

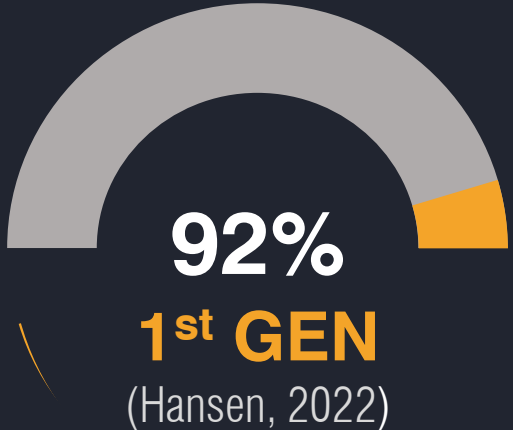
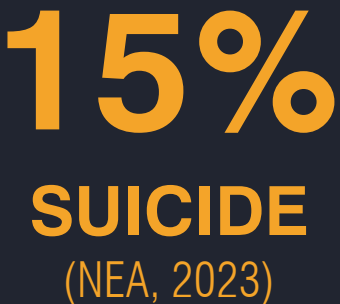
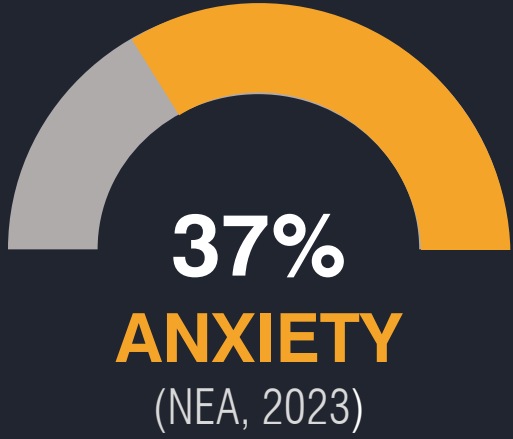
Can cause trouble concentrating and making decision. If untreated it can lead to depression, anxiety or burn out (CDC, n.d). The future of the country is a significant source of stress the lives of adults (APA, 2023)

Washington Park, Portland, Oregon (Credit: Shutterstock)

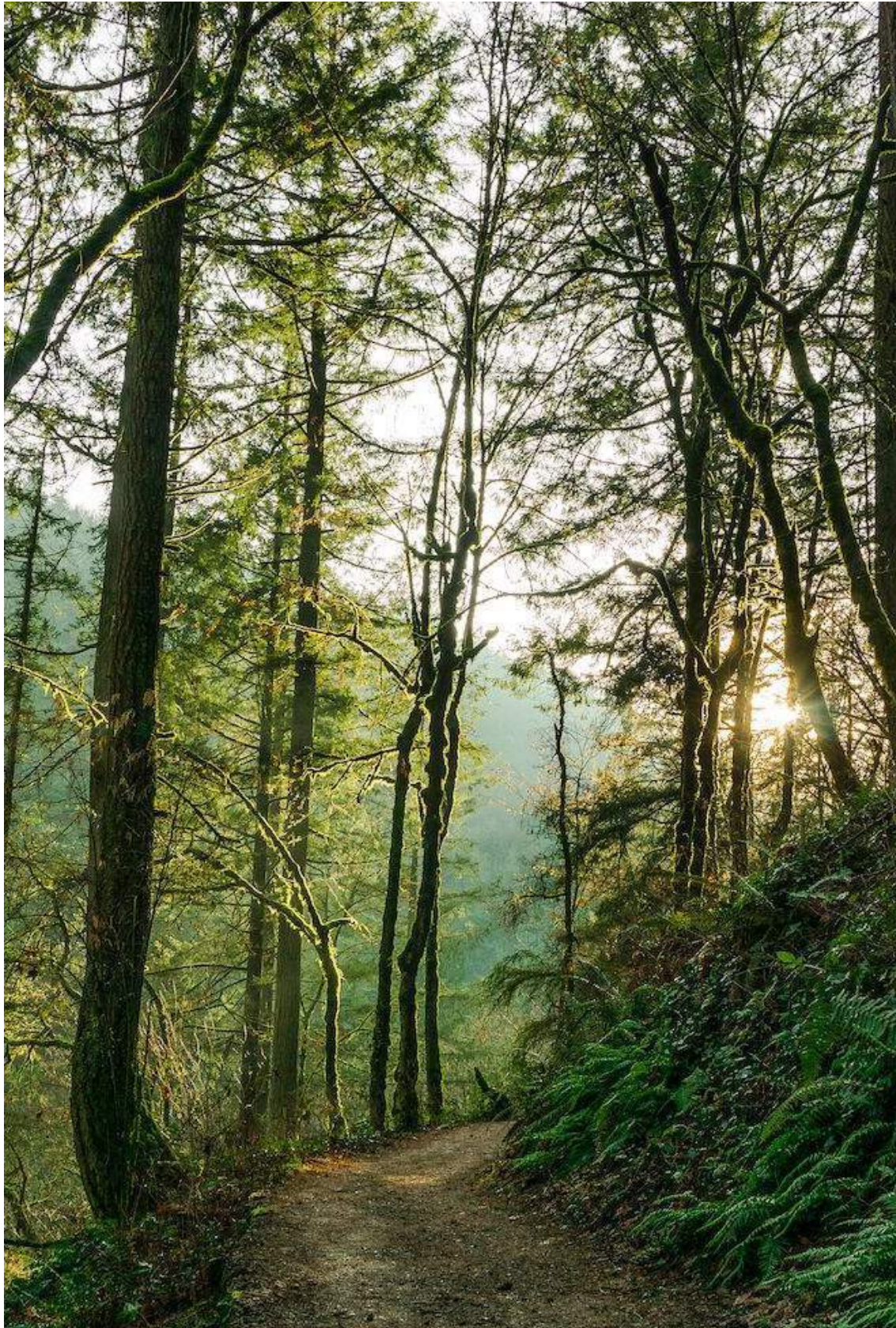


Mount Tabor Park, Portland, Oregon (Credit: Shutterstock)

Key Literature



Female undergraduate students are more likely to experience daily stress than their male counterparts (Hrynowski & Marken, 2023). Those that have consistently experienced discrimination have higher levels of mental health challenges (CCMH, 2023).



Forest Park, Portland, Oregon (Credit: Shutterstock)

Resiliency

Adapt and overcome obstacles

Academic pressures...projects

Financial pressures...tuition, rent, \$\$\$

Faculty who take attendance

News about politics

News about war

Predictor of psychological wellbeing (Rustamov et al., 2023)



Multisensory environments



Northwestern University, IL



University of Wisconsin Stout



Rhodes College, TN



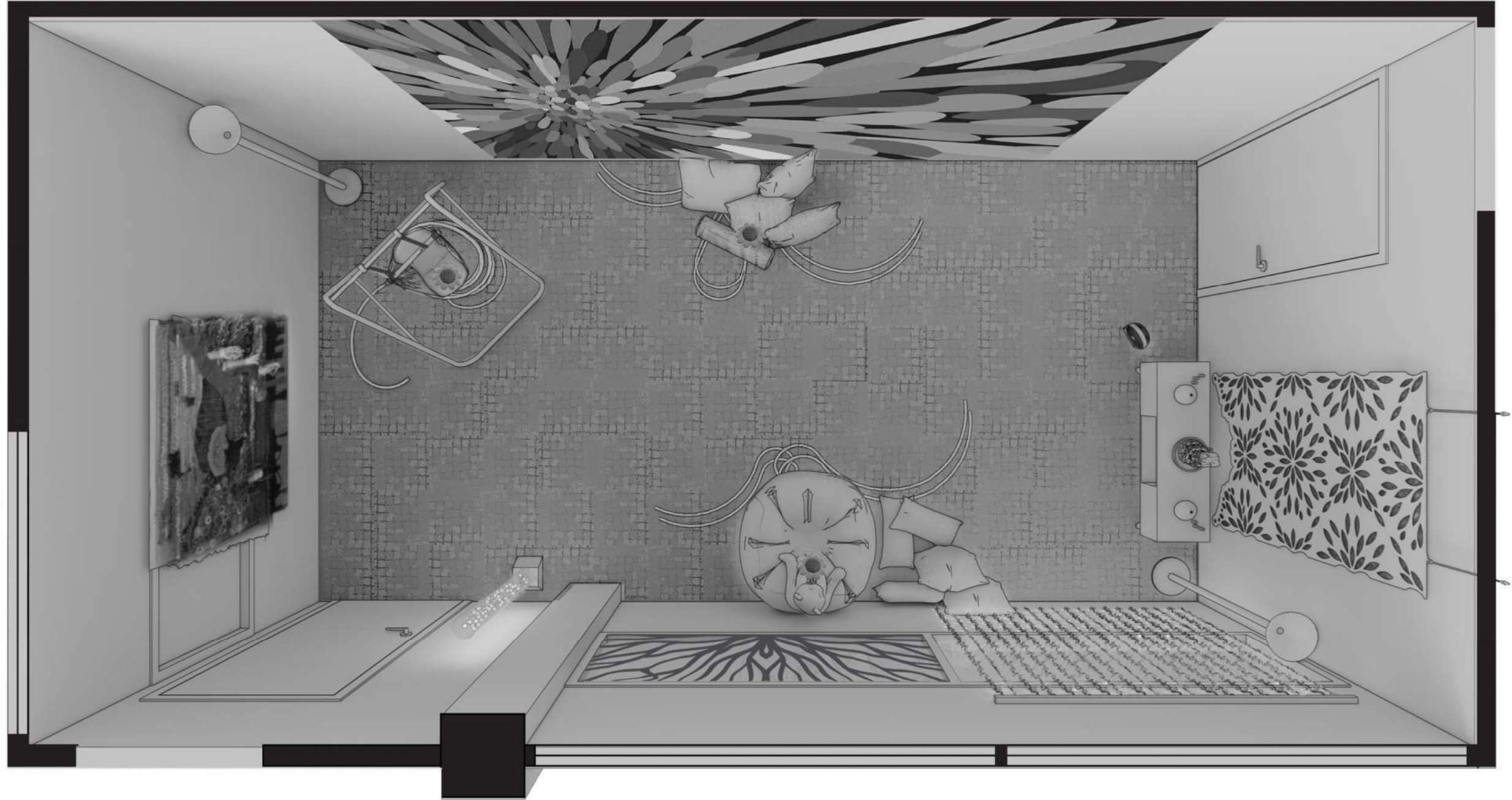
University of Minnesota Duluth



Clark College, WA



The Design



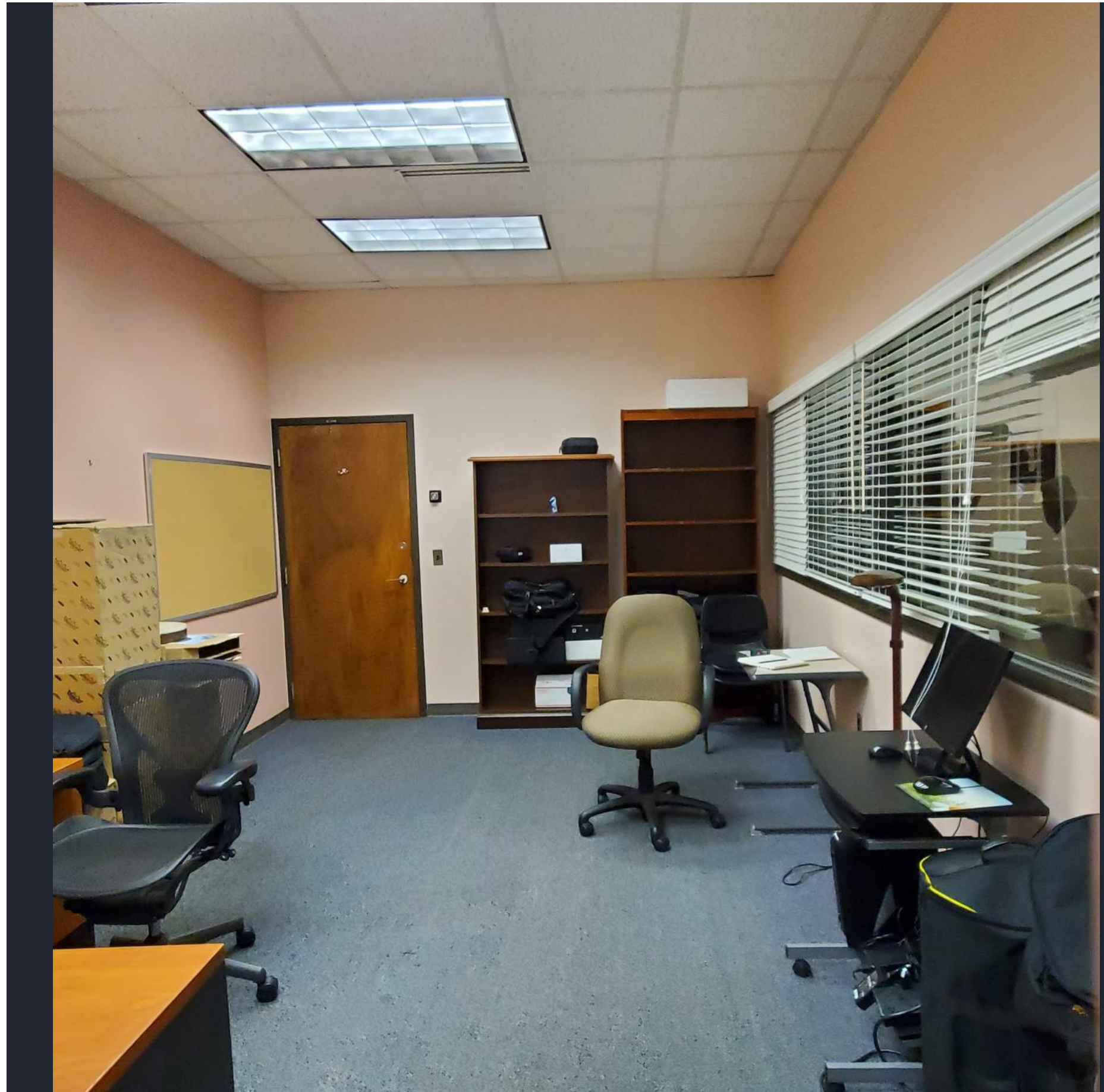


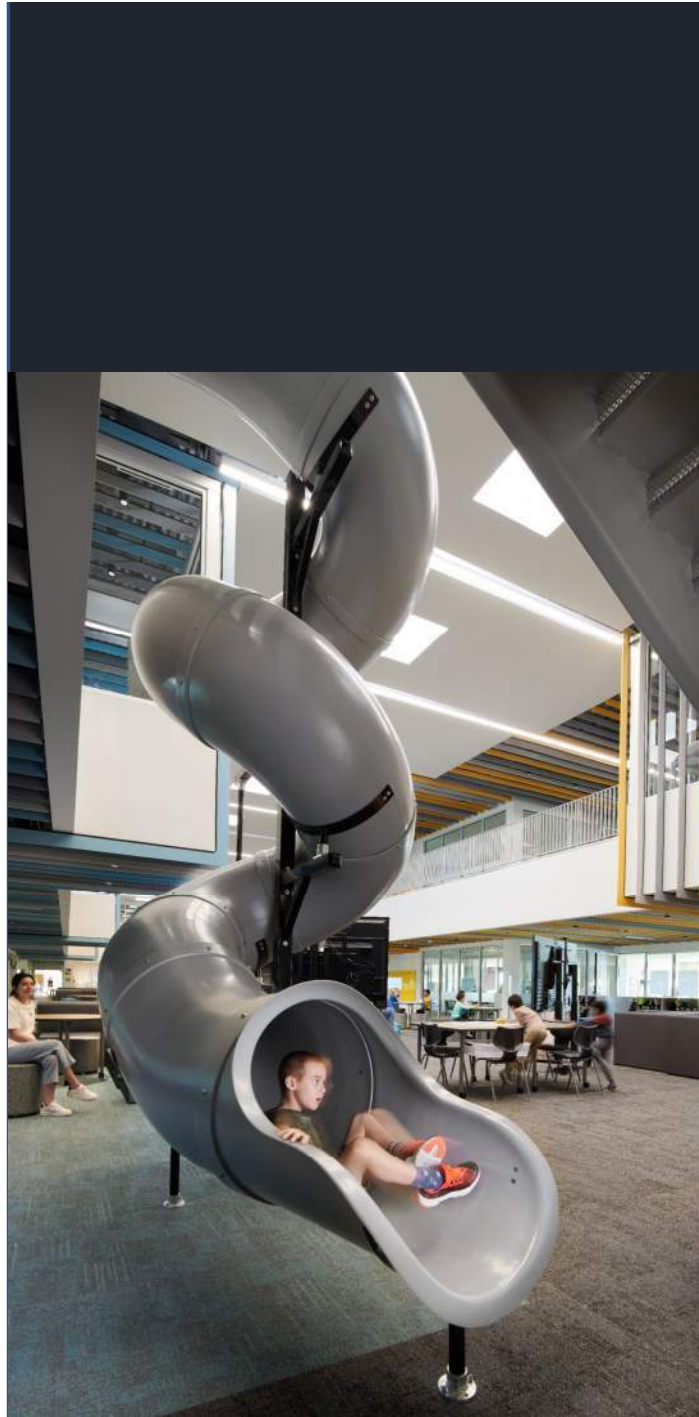
Faculty Office

270 sq. ft. windowless room

Dept. of Community and
Recreational Therapy

Adjacent to hallway and
classroom





*Minett Elementary School
By Stantec*

Theories

PLAY THEORY

Reduced anxiety (Mantzios & Giannou, 2018)

Lower heart rate (Roy, 2015)

Many forms:
coloring, crafting, games, things that are
reminiscent of childhood

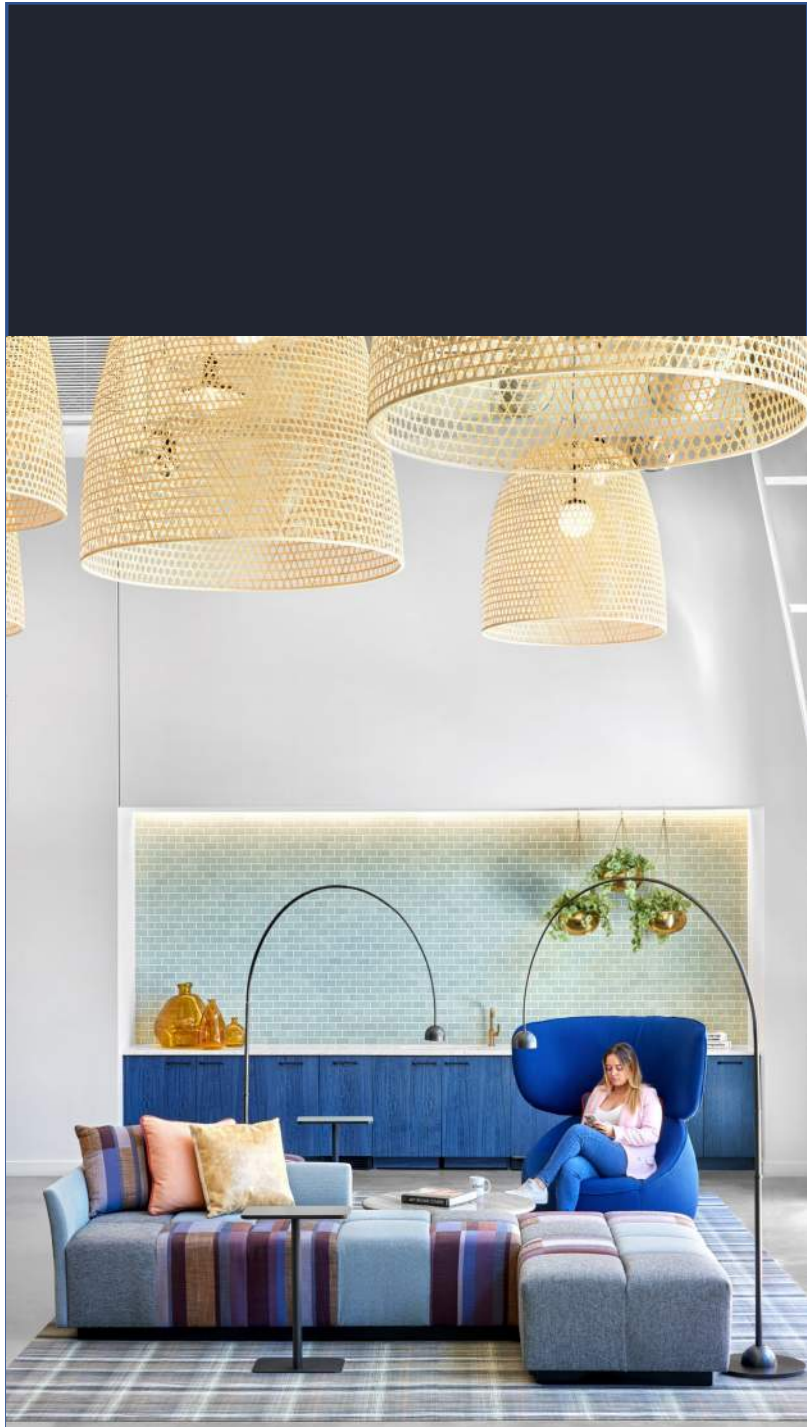
*“Play is the highest form of research.”
- Albert Einstein*



Play Theory

LEARNINGS CAPES 2024





*Miscela
By Stantec*

Theories

ATTENTION RESTORATION

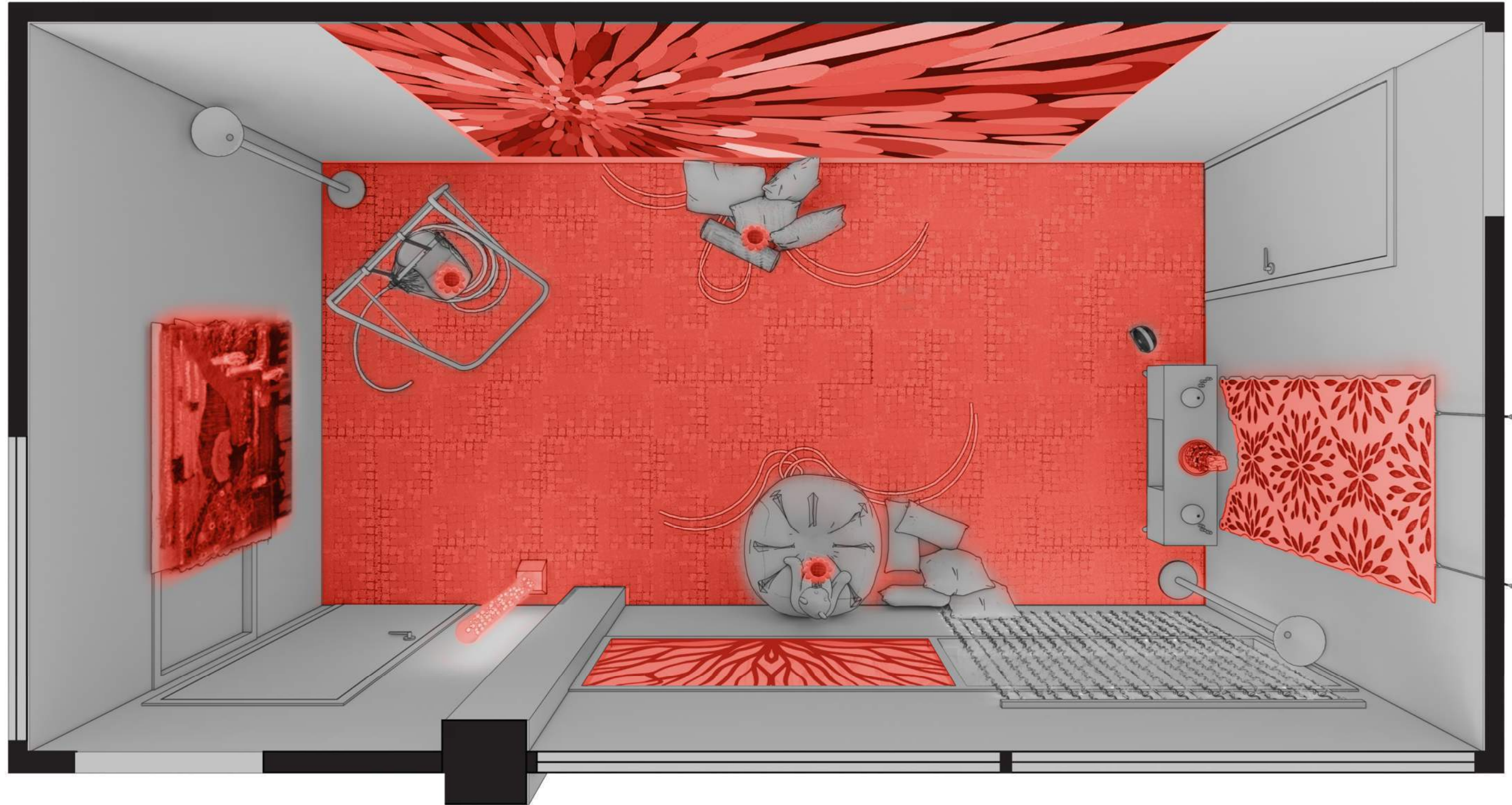
Enhance attention (Han, 2003)

Restore positive moods (Lee et al., 2015)

Interior or exterior spaces that integrate aspects of nature (simulated or actual)



Attention Restoration Theory





Sensory Features



Sense of
sight, touch, hearing,
smell

Budget

\$2,500

Furniture, base, lighting

DONATIONS

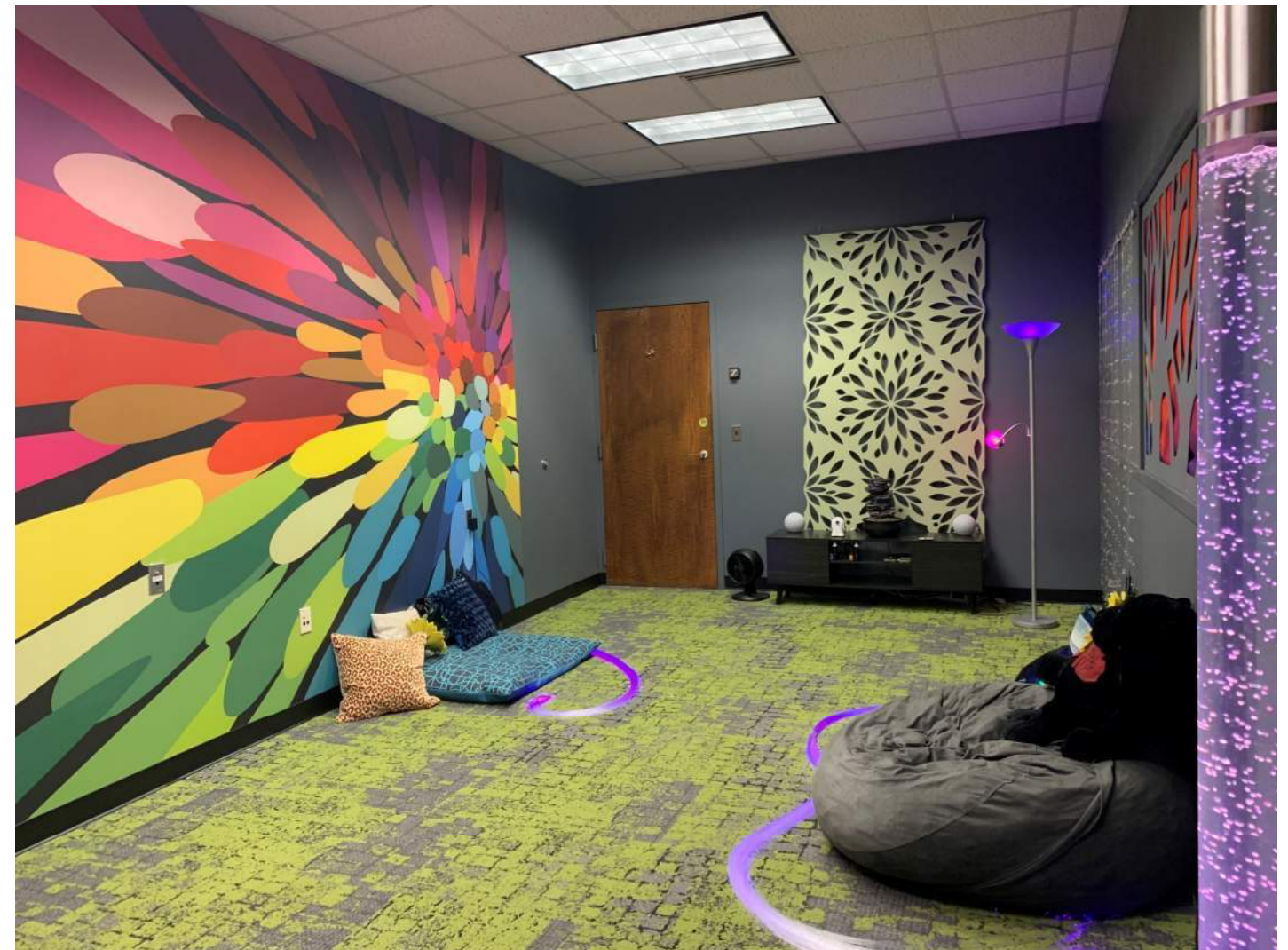
Interface carpet tiles

Autext Acoustics

National Wallcovering

PPG

Lisa Williams - pillows



View of entrance from hallway with overhead lighting on



31

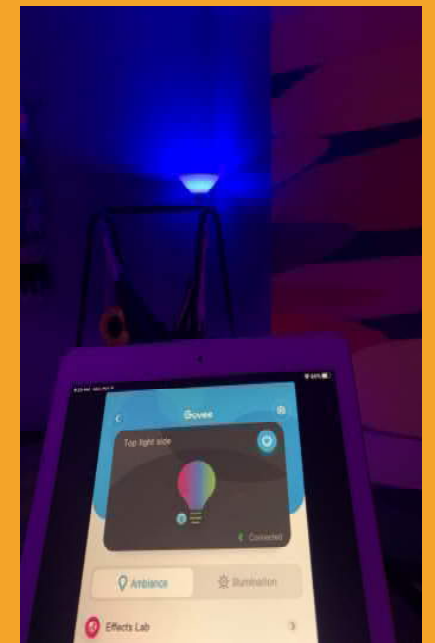
Undergrad students

PARTICIPANTS

Method

CUSTOMIZE aspects of the room through tablet:

- Color and amount of light
- Smell
- Sounds
- Air circulation





View of classroom entrance with overhead lighting on

Method

Perceived Stress Scale

10 items; 5-point Likert

(0=never, 4=very often)

Perceived Restorativeness scale

22 items; 7-point Likert

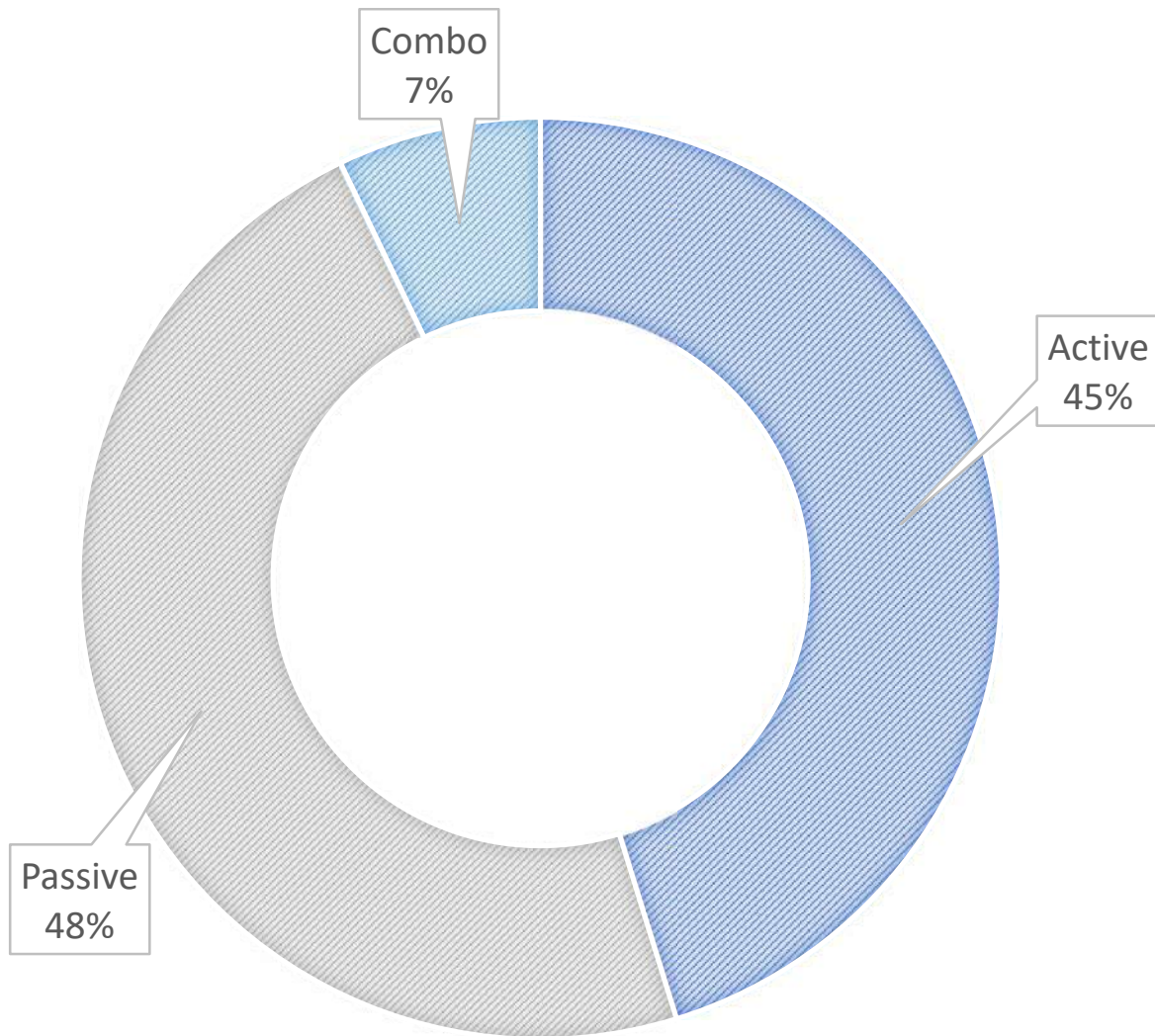
(0=none, 6=completely)

Open-ended questions

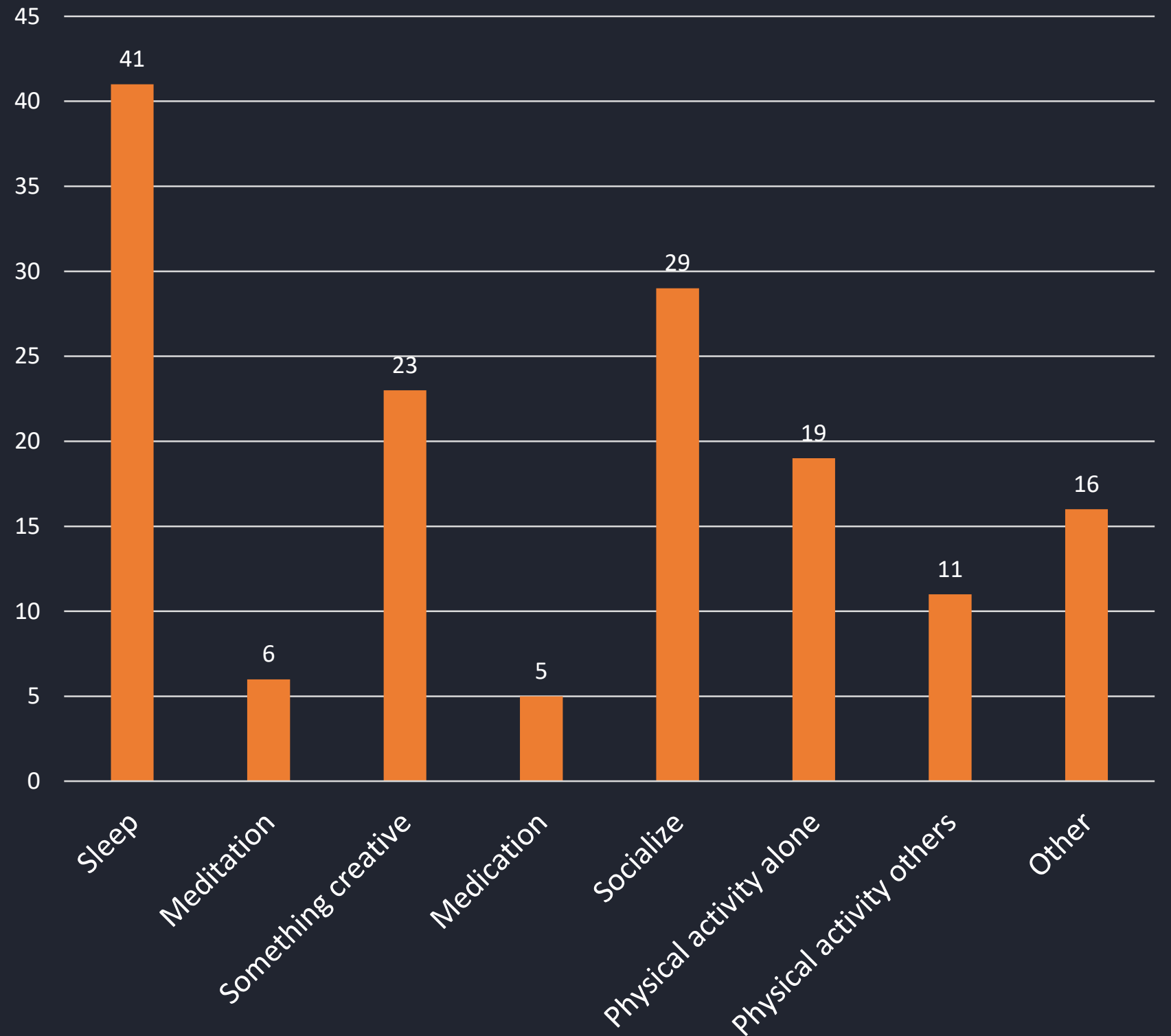
7 items



Strategies to Cope with Stress

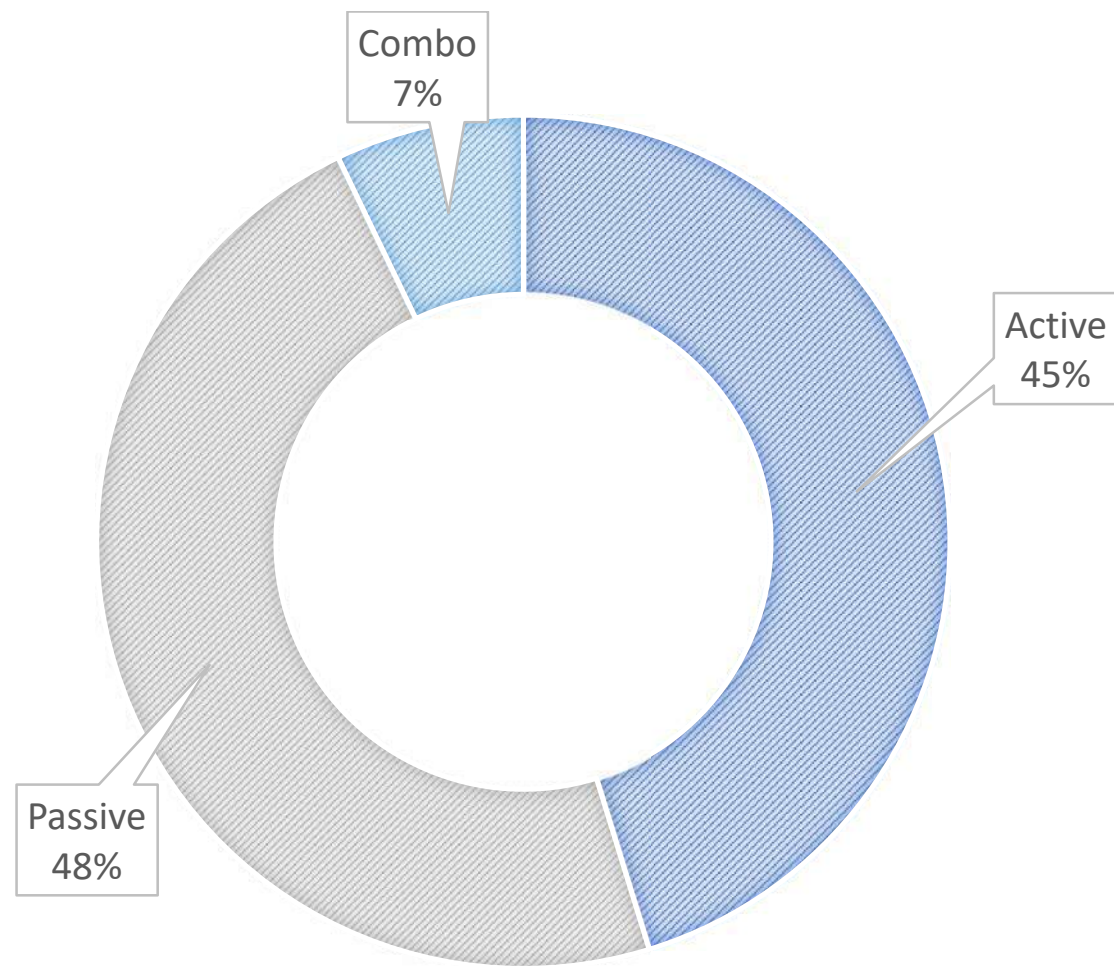


N=43

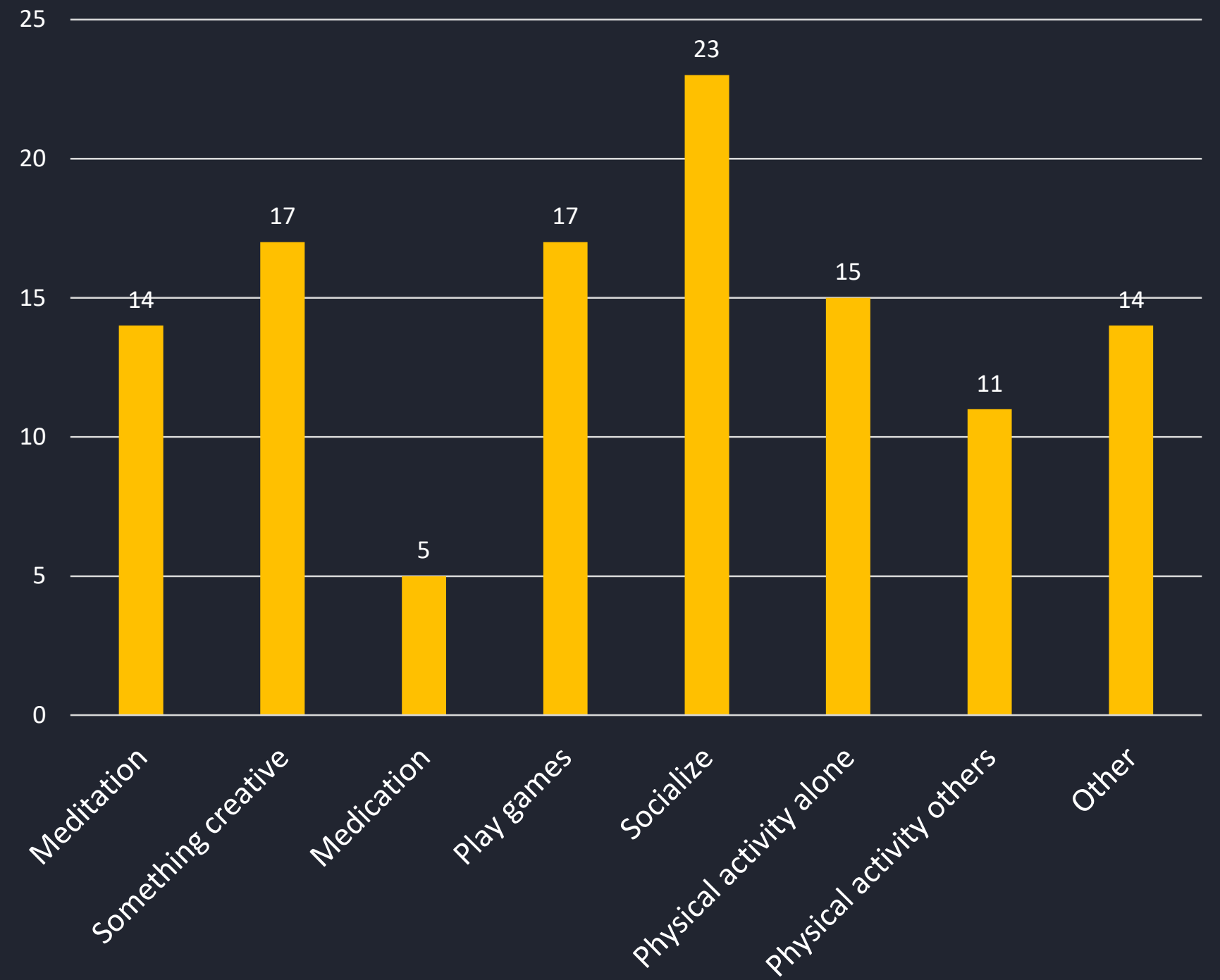


N=49

Strategies to Cope with Anxiety



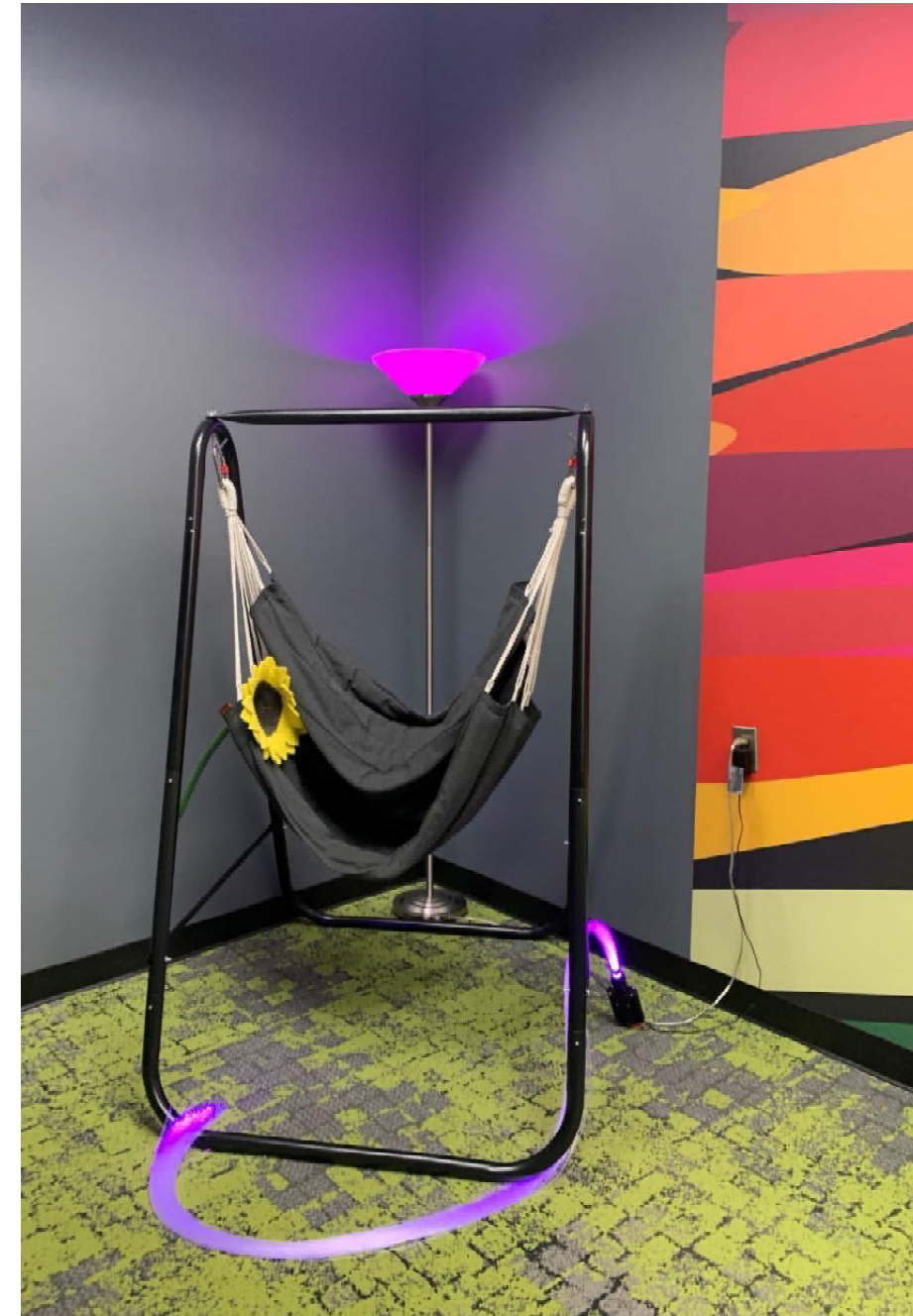
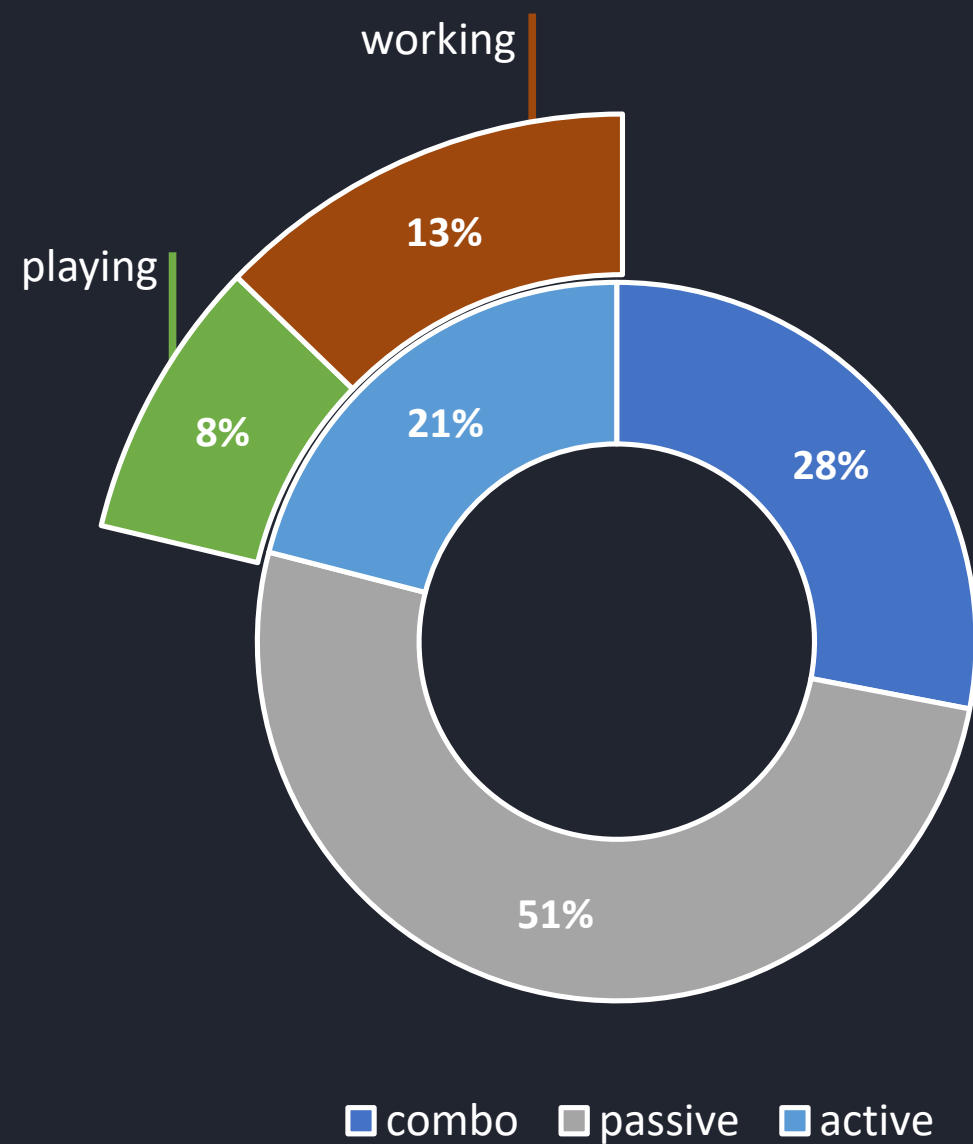
N=43



N=49

Findings

How they spent their time



“I was in the hammock swinging around. I was on my phone and i used that time to write emails and get caught up on some work.”

Findings

How they spent their time

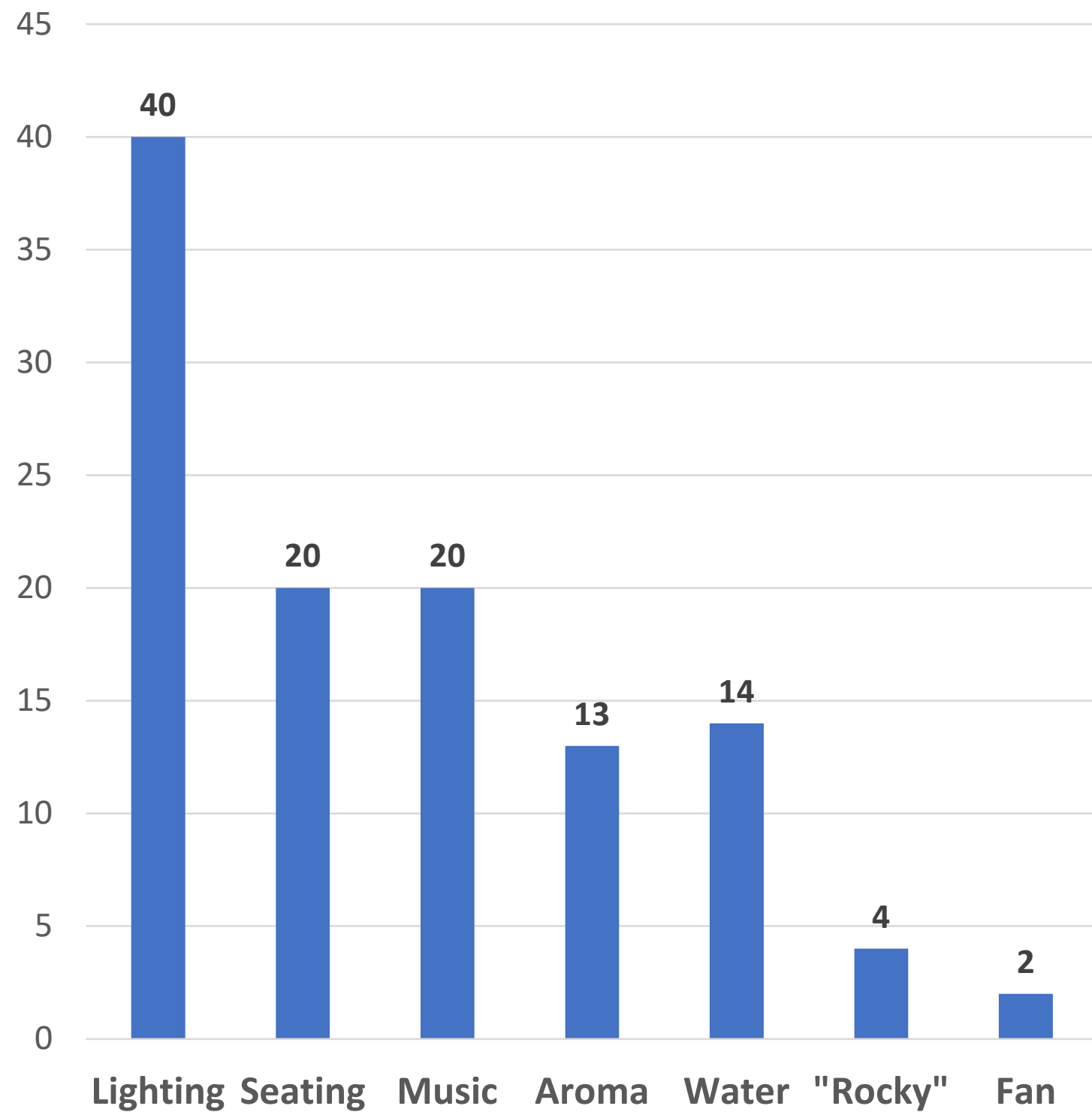


“On the floor mat watching the wall light and resting”

“On the bean bag hugging Rocky (the stuffed animal).”



“in the beanbag chair with rocky the stuffed animal looking at the bubble tank / playing with one of the reversible pillows.”



N=49

Sensory Feature

Preferred sensory features

*Lighting,
Sound (music + water)
Seating (hammock),*

Least preferred sensory features

*"None!" (12 of 48)
Mechanical sound (4 of 48)
Floor cushion (3 of 48)*

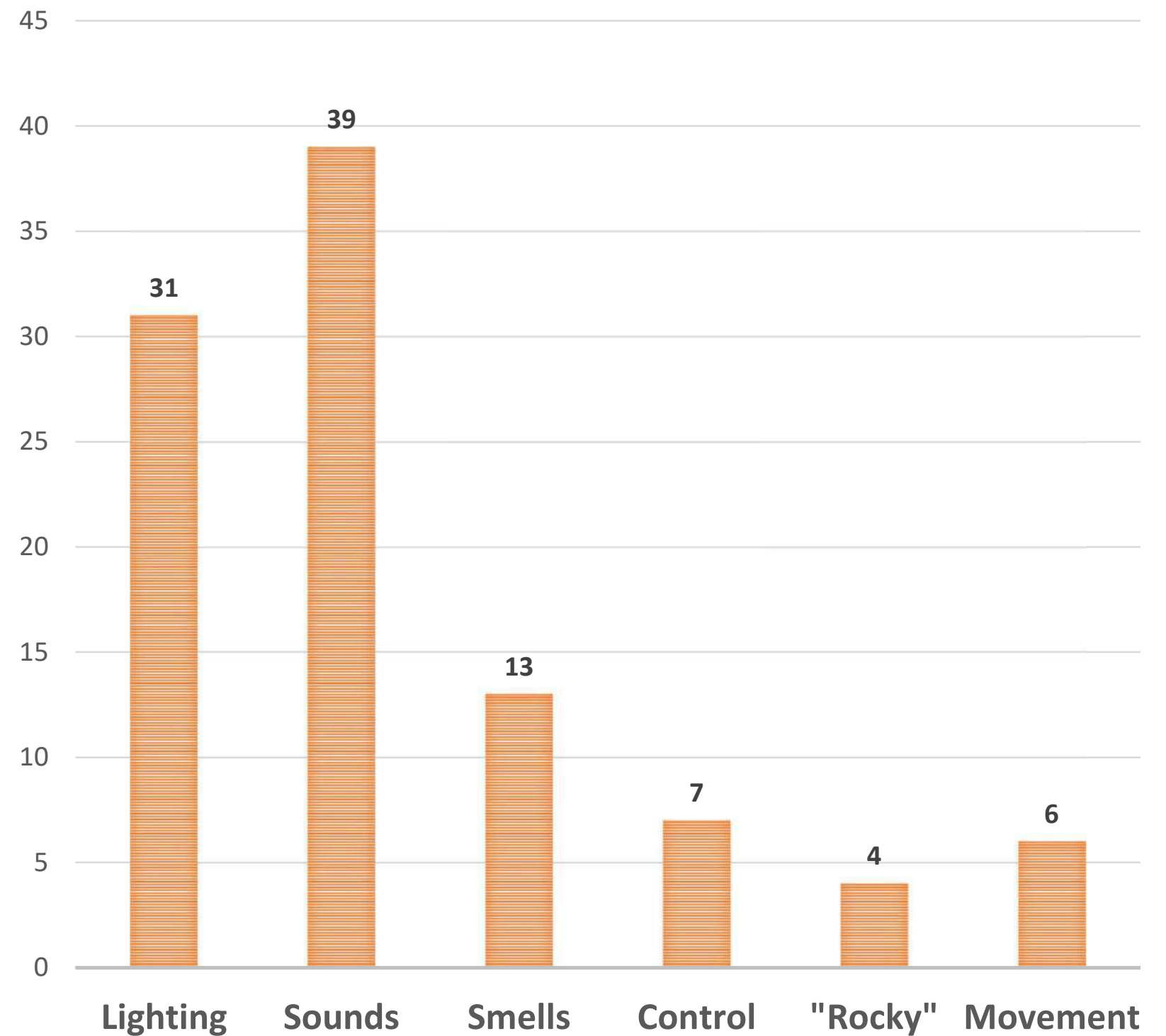
Features Easing Stress

*Lighting,
Sound (music + water)*

“The lavender smell and the calming waterfall.”

“The music, the darkness, the water sounds.”

“Being able to change the lights as well as set the music and just relax.”



N=48

Features easing anxiety

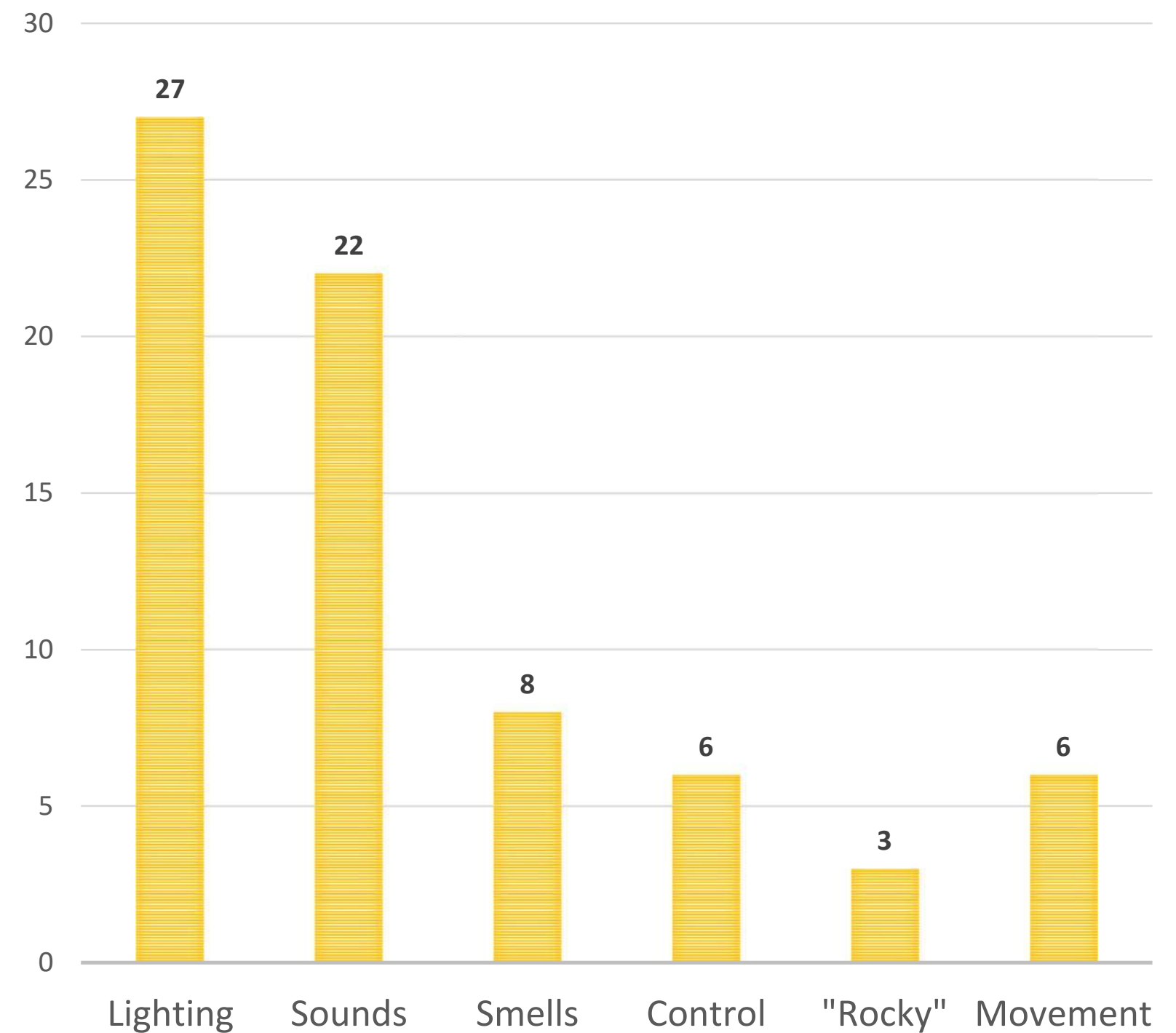
Lighting,

Sound (music + water)

“The calming music, water feature, and the dark with color changing lights.”

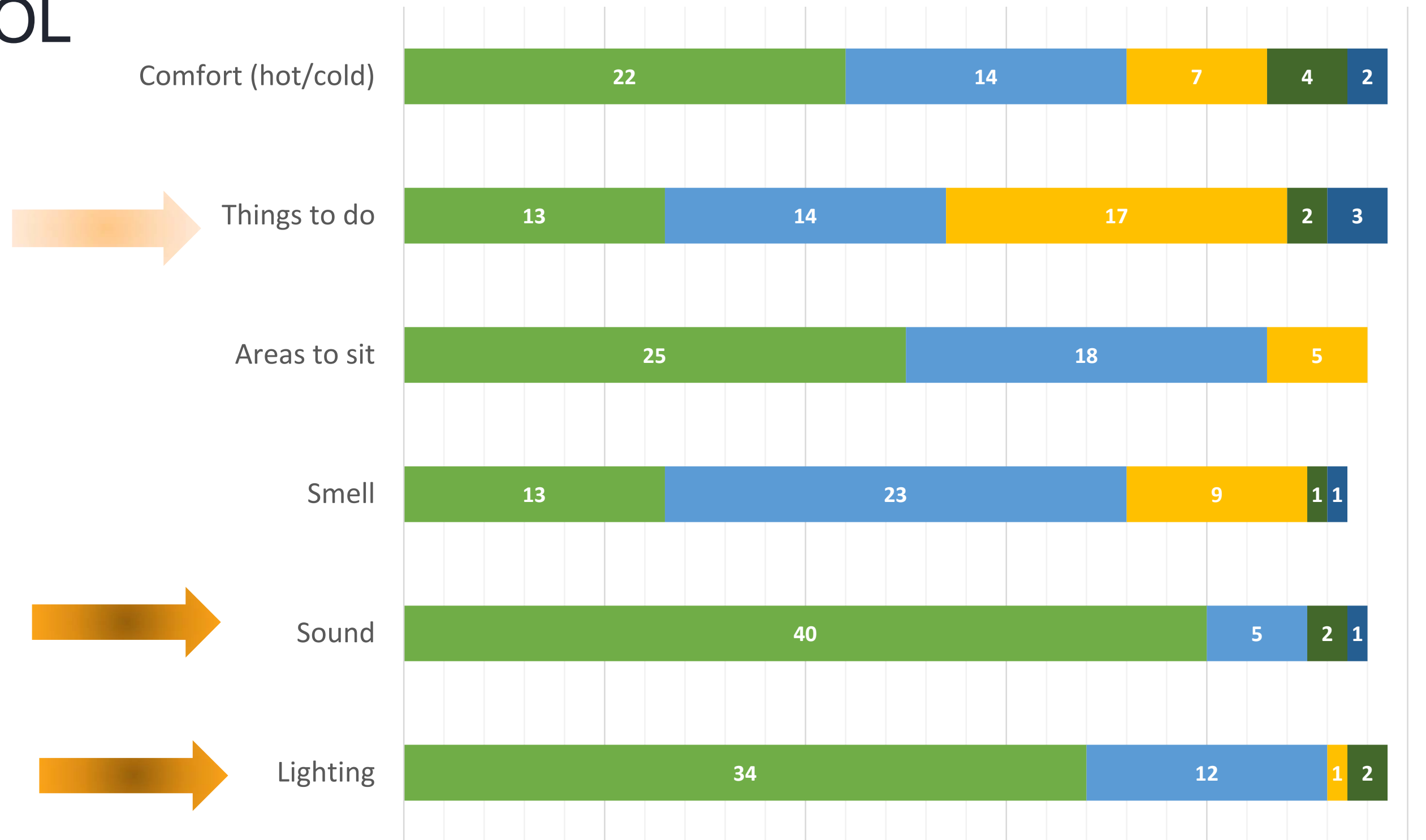
“Changing the colour of the lights and hearing the water .”

“Being able to control the settings helped with feeling anxious.”



N=45

CONTROL



N=49

■ A lot ■ Moderate amount ■ A little ■ N/A (did not use) ■ None at all

Perceived Stress

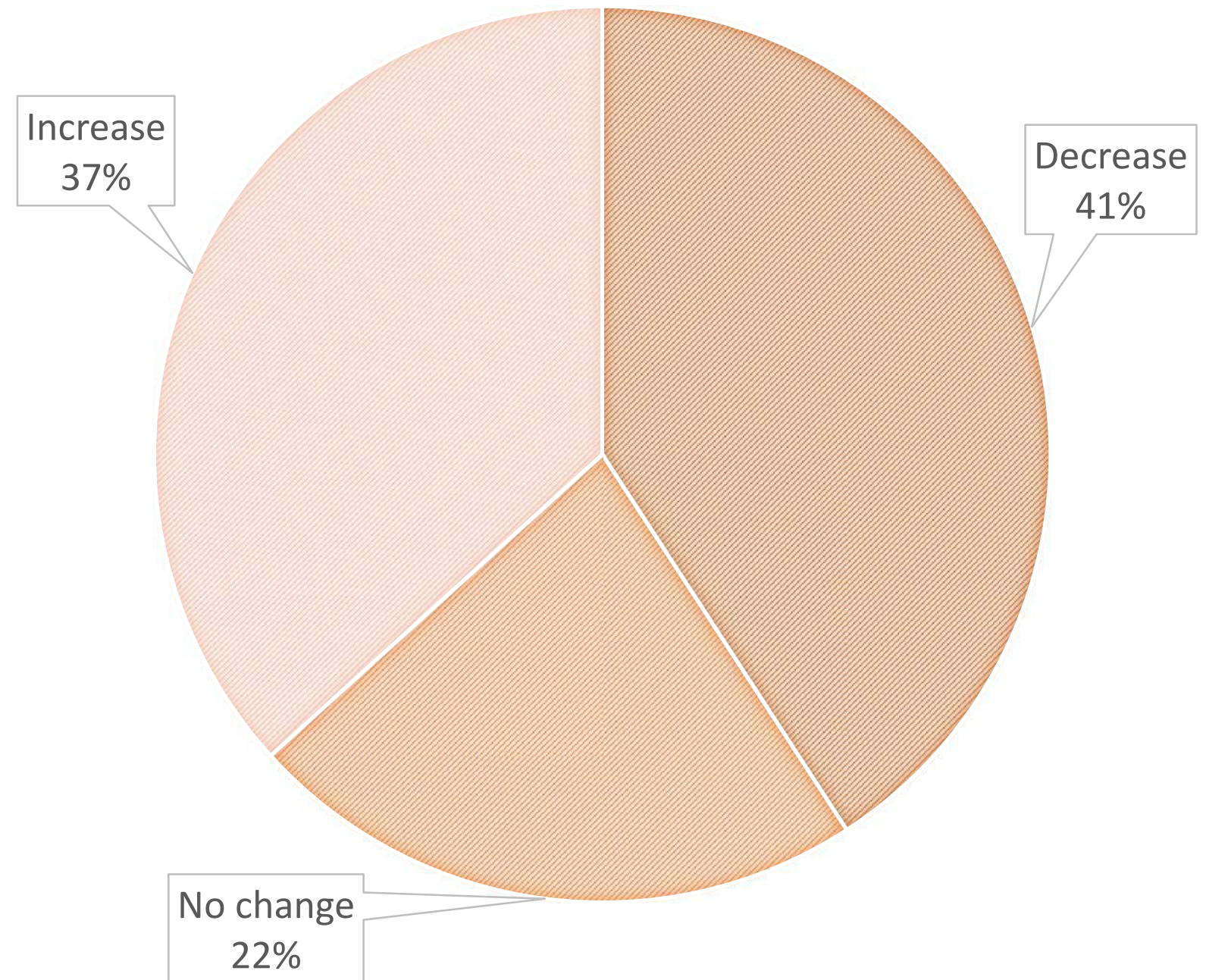
Avg. 3.25 pts

Range = 0 - 40

59% increase or no effect:

42.8% preferred active strategies

14.2% worked w/in the sensory environment



Perceived Anxiety

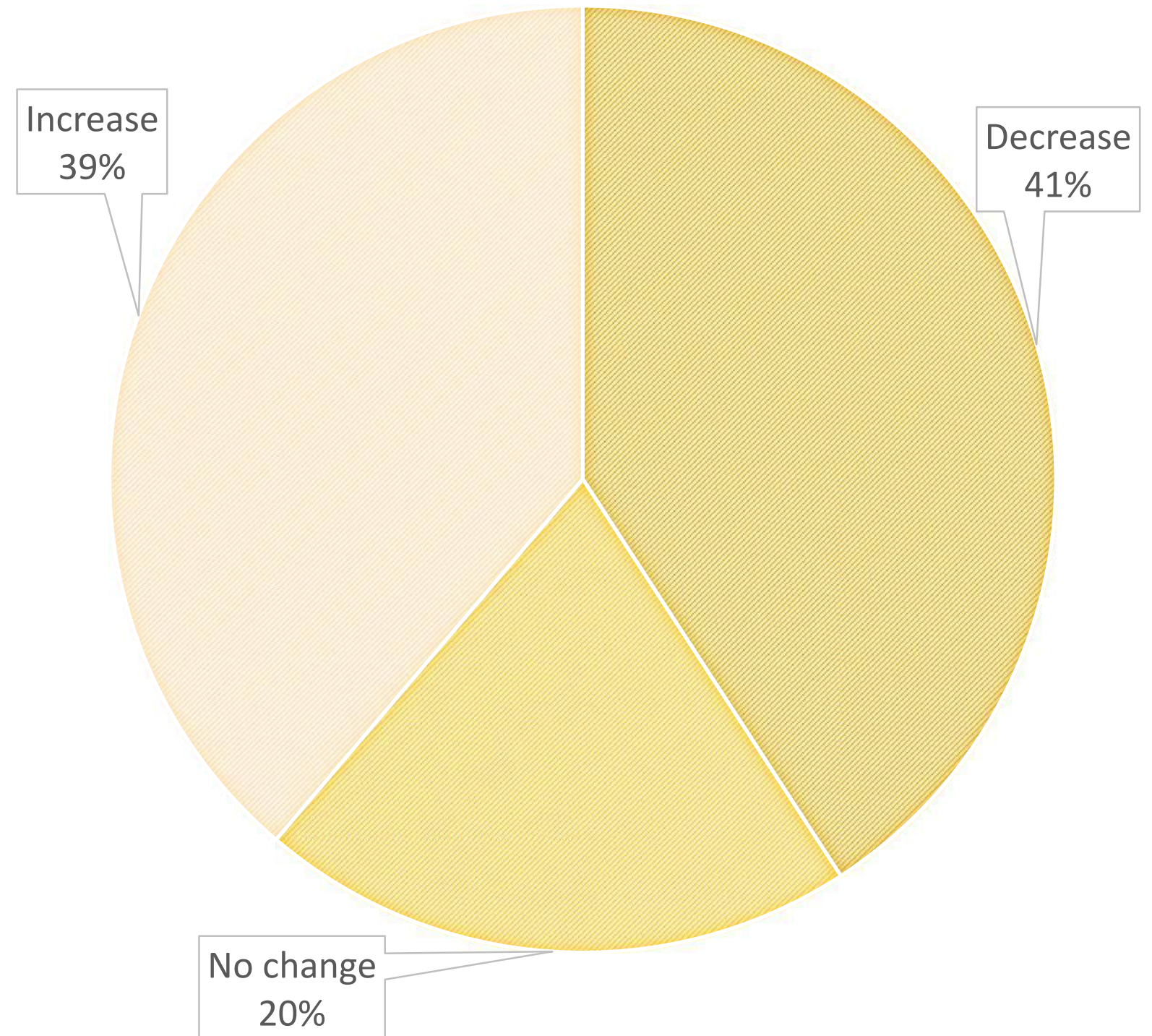
Avg. 1.65 pts

Range = 0 – 21

59% increase or no effect:

42.8% preferred active strategies

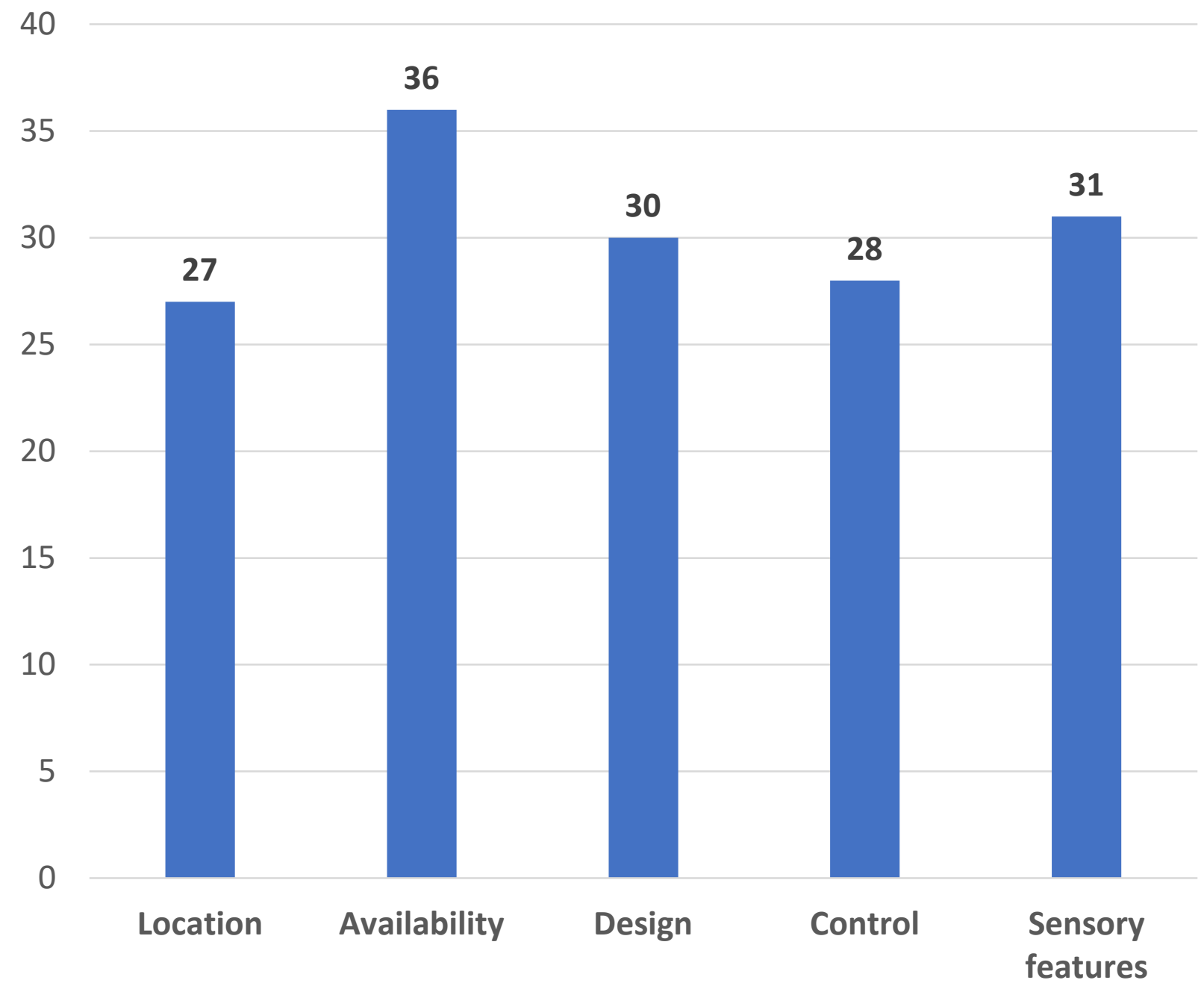
10.7% worked w/in the sensory environment



N=49

Influencing the use

Use of the sensory space





“In the Sensory Lounge in the Ferguson building, I can always wind down and take space if needed. I love the features in the sensory lounge!”

– *Awa Mbai, political science major*



[VIDEO]



OUTCOMES

MOST PREFERRED ELEMENTS

Most control = individualization
Represented PLAY

ELEMENTS that decreased feelings of stress

Most control = individualization
Dynamic (lighting, movement)



OUTCOMES

RECOMMENDATIONS

More things to do

Active coping mechanisms

EXPLORE

Multiple people in space

Test attention restoration





What are people saying?

Workplace

Health

Education

Hospitality

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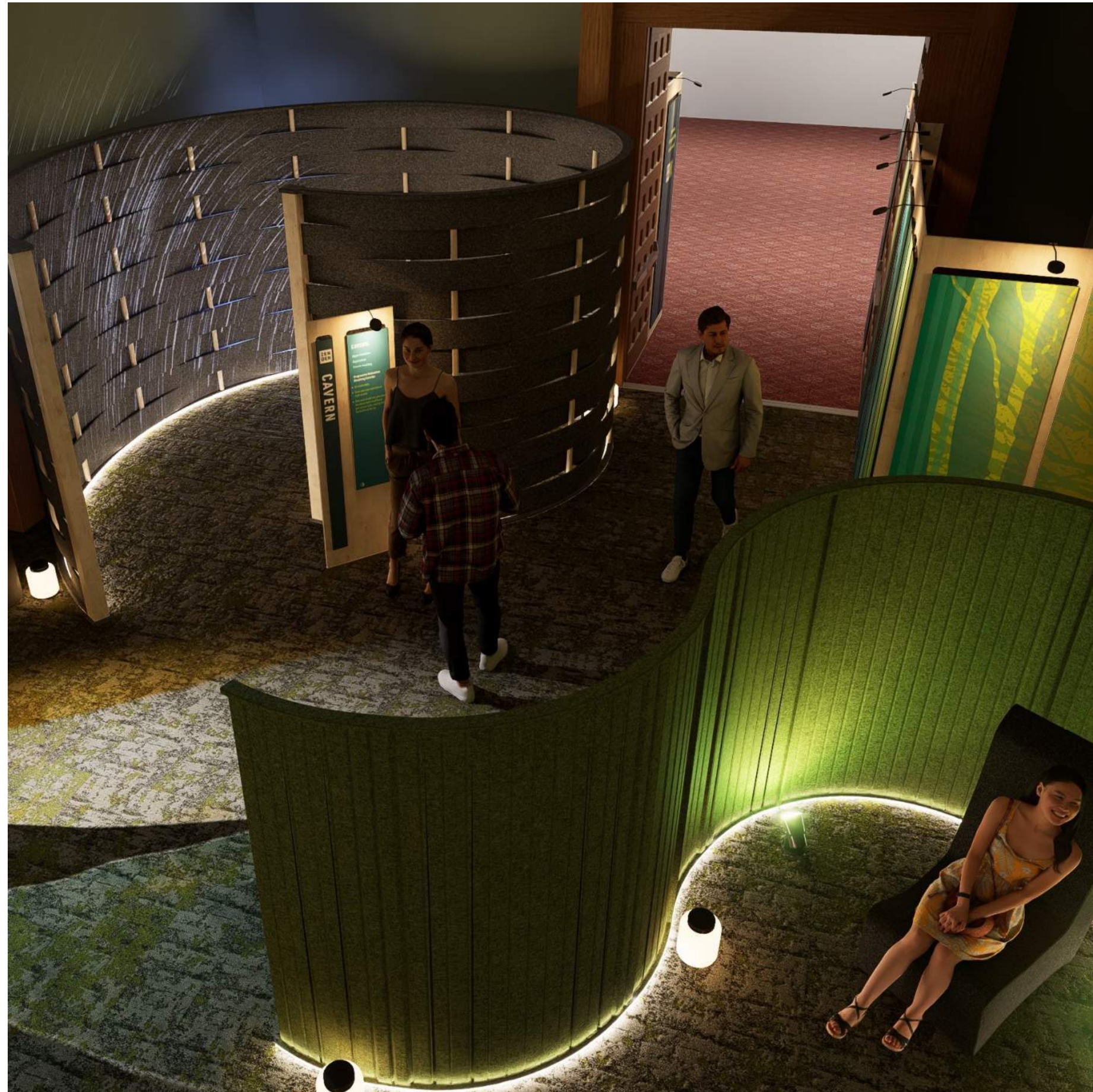


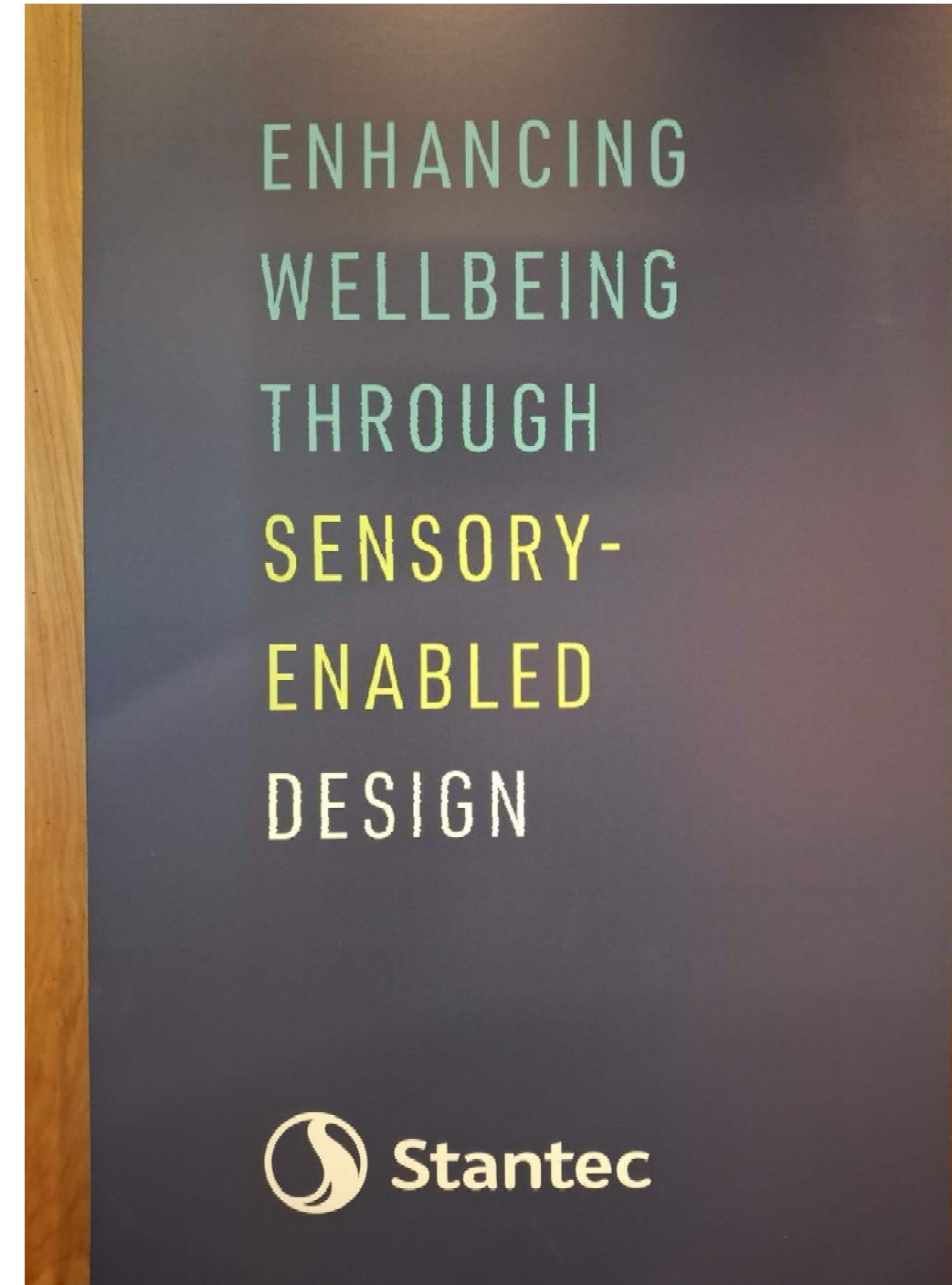


Application

Zen Den

- Temporary installation
- Three zones
 - Cavern
 - Meadow Walk
 - Creekside











Application

Cooper University Hospital Pediatric Sensory Rooms

- Primary Care Exam Room
- Sub-waiting Room
- Inpatient Radiology Holding











Questions?

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Thank you!