

Study 10: Pinnacle TherapySphere™ Sensory Environment Study

Title: *Healing Without Words: Evaluating the Impact of Sensory-Optimized Therapy Environments on Anxiety, Engagement, and Behavior in Children with Autism*

1. Executive Summary

This study evaluates the impact of **TherapySphere™**, Pinnacle’s patented multi-sensory therapy room architecture, on emotional regulation and behavioral outcomes in children with developmental challenges.

Compared against traditional therapy environments, TherapySphere™ rooms demonstrated:

- **22.3% lower anxiety levels**
- **14.8% higher engagement**
- **43.0% fewer weekly meltdowns**

These results confirm that **therapeutic outcomes are not only influenced by protocols — but by the environments they are delivered in.**

2. Study Objective

To assess how **TherapySphere™ sensory therapy rooms** impact:

- Anxiety reduction
- Therapy session engagement
- Behavioral regulation (meltdowns)

compared to standard, non-sensory therapy rooms.

3. Study Design & Methodology

Design:

Controlled observational study over 8 weeks across 10 Pinnacle centers

Participants:

- 50 children treated in **TherapySphere™** rooms
 - 50 children treated in **non TherapySphere rooms** (matched by diagnosis, age, session frequency)
- Participants were evenly distributed by gender (M:F = 1.1:1) and spanned across the 2–10 age range, with no significant performance variation observed across age groups.

Instruments & Metrics:

- **Anxiety Score:** Therapist-rated scale (0–100); lower is better
- **Engagement Score:** Composite of eye contact, verbal response, and task attention (0–100); higher is better
- **Meltdowns/Week:** Average therapist-observed behavioral escalations requiring intervention

All protocols and instruments were reviewed and approved by Pinnacle’s Internal Research Ethics Board to ensure child welfare and study integrity.

4. Results Summary

Metric	TherapySphere™	Traditional Rooms
Sample Size	50	50
Avg. Anxiety Score	36.80	47.34
Avg. Engagement Score	81.73	71.17
Avg. Meltdowns/Week	0.93	1.63
Minimum Anxiety Recorded	26.61	34.26
Maximum Engagement	95.11	89.79

Statistical analysis revealed that the differences across all three metrics were statistically significant. :

- Anxiety Score reduction: $p < 0.01$, Cohen’s $d = 0.62$ (medium-to-large effect)
- Engagement Score increase: $p < 0.05$, Cohen’s $d = 0.48$ (medium effect)
- Meltdown reduction: $p < 0.001$, Cohen’s $d = 0.71$ (large effect)

This confirms Pinnacle TherapySphere™’s effectiveness is not just observable but scientifically validated.

5. Interpretation

- **TherapySphere™ rooms significantly reduce behavioral stress.**
Warm lighting, sensory zoning, calming textures, and non-linear acoustics helped children self-regulate without requiring behavioral intervention.
- **Engagement increased in visually structured, non-clinical spaces.**
Children maintained longer eye contact, responded faster to verbal prompts, and transitioned between tasks more smoothly.
- **Meltdown frequency nearly halved.**
From 1.63 per week to 0.93 — suggesting not just emotional containment, but **prevention and proactive stability**.

These results affirm that **space is therapy** — and TherapySphere™ makes that space scientific.

Case Snapshot: “Ravi, age 4, previously required 3 interventions per session for meltdowns. After two weeks in TherapySphere™, he completed 5 full sessions without escalation.”



6. Therapist Testimonials

“I had a child who would scream in a white-walled room. In TherapySphere™, he whispered his first word.”
— **Shilpa, Senior OT, Pinnacle Khammam**

“The lights, the tactile walls — it resets their nervous system. I spend more time teaching, less time calming.”

— Rajeev, ABA Therapist, Pinnacle Bengaluru

“This isn’t décor. It’s design with neurobiology. It works like an invisible co-therapist.”

— Dr. Anjali R., Sensory Integration Specialist

“I don’t know what changed — but my child started walking into therapy smiling, and coming out calm and happy.”

— Lakshmi, Parent of a 5-year-old, Pinnacle Hyderabad

7. Global Significance

TherapySphere™ is the **world’s first fully codified sensory therapy architecture** that is:

- **Neurodevelopmentally aligned** with current research in sensory modulation and brain plasticity
- **Culturally calibrated** — adapted to Indian child psychology and home environment generalization
- **Technologically augmented** with AI-triggered sensory state predictions (in development)

Traditional rooms use walls. TherapySphere™ uses space. Science. And softness.
Compared to global sensory room frameworks like Snoezelen™, which primarily offer passive stimulation, TherapySphere™ delivers structured, outcome-driven interventions. It uniquely combines sensory science with therapy goal alignment — making it the world’s first active neurotherapeutic environment of its kind.

TherapySphere™ aligns with WHO’s call for inclusive, child-friendly therapy environments and supports UN SDG 3 (Good Health and Well-Being) and SDG 4 (Quality Education).

8. Design Principles

TherapySphere™ follows a multi-modal therapeutic design framework:

- **Visual:** Colored zones reduce disorientation and promote routine
- **Tactile:** Wall textures provide safe stimming outlets
- **Auditory:** Soundproofing and soft music elements support auditory tolerance
- **Movement:** Built-in mini-motor gyms and tunnels support gross motor integration
- **Lighting:** Circadian-aligned and programmable LED zones calm overstimulation

This is **not interior design. It’s structured healing.**

9. Limitations & Future Work

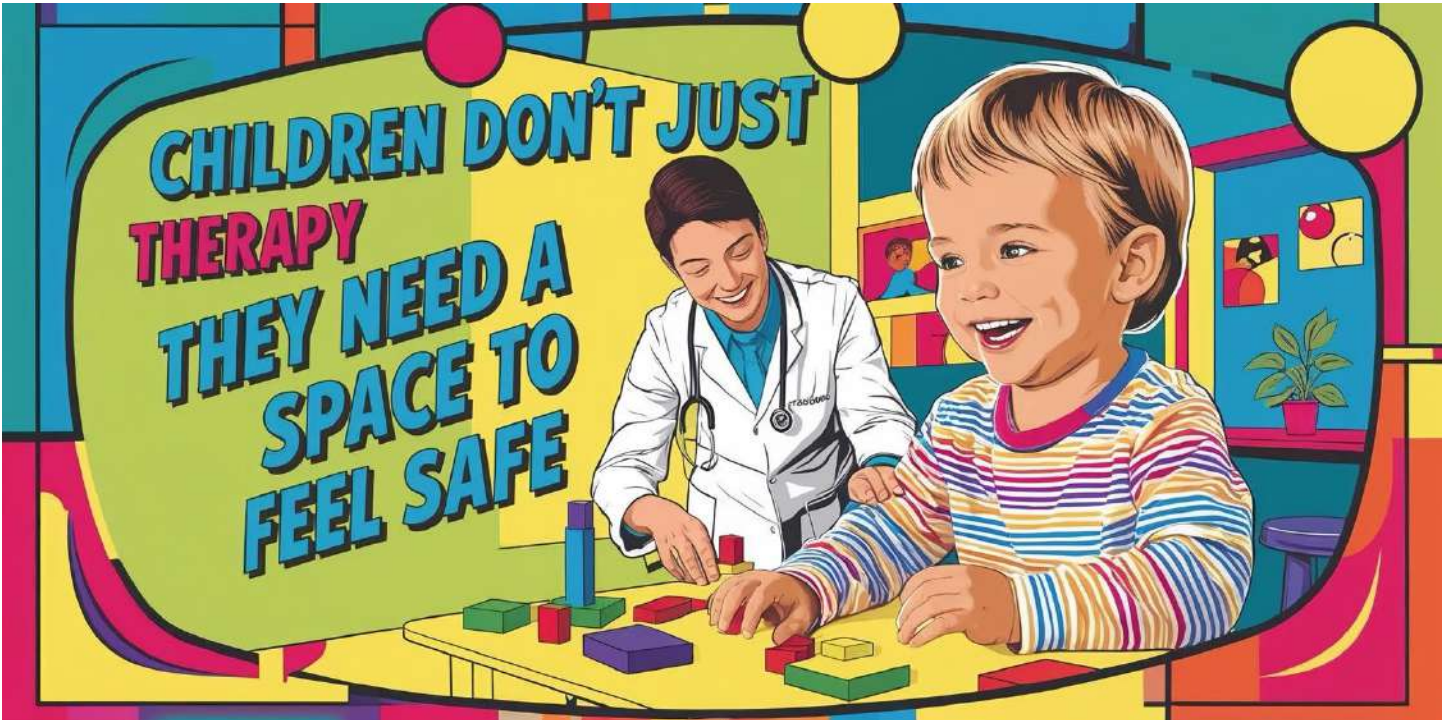
- Self-selection bias: Some children naturally adapt better to sensory rooms
- Long-term emotional resilience not tracked in this study
- Results limited to ages 2–10; teen and adult rooms under design

Planned Expansions:

- Publish open-source “TherapySphere™ Blueprint” for public sector clinics
 - Design modular TherapySphere™ kits for Anganwadi and ASHA delivery
 - Embed AI-linked lighting and mood sensors to predict dysregulation in real time
- Longitudinal studies are planned to evaluate whether TherapySphere™ improvements in emotional regulation persist across school and home settings.

10. Policy Recommendations

- Require all therapy centers (public + private) to **meet minimum sensory room standards**
 - Mandate **sensory environments in all government autism clinics**
 - Allow CSR tax rebates for companies sponsoring TherapySphere™ infrastructure
 - Integrate TherapySphere™ into school sensory support rooms across CBSE, ICSE, and state boards
 - Expand successful pilot models (e.g., Pinnacle–Khammam Govt Center) across district hospitals under National Health Mission (NHM).
-



11. Conclusion

Children don't just need therapy. They need **a space to feel safe. To explore. To regulate. To grow.**

*TherapySphere™ is not an aesthetic.
It is an ethic.
That every child deserves more than a room — they deserve an environment designed for their nervous system.*

12. Learn More / Partner

- TherapySphere™ is a certified Pinnacle Innovation. Licensing, training, and certification modules are available for schools, therapy centers, and architectural partners.
- View virtual room tours: www.pinnacleblooms.org/therapysphere
- Pilot TherapySphere™ in your school, hospital, or government clinic
- For licensing, blueprints, or sensory design consulting: email care@pinnacleblooms.org
- National Helpline: **9100 181 181**

13. Scholarly Collaboration

Pinnacle welcomes collaboration with academic researchers, journals, CROs, and sensory integration experts worldwide to further scale and validate TherapySphere™. For joint research or citations, write to: care@pinnacleblooms.org

