

INTRODUCTION

Background

- Therapeutic Listening® is a sound-based treatment developed by Sheila Frick, OTR, rooted in sensory integration.
- The Quickshift series uses binaural beat technology to improve bilateral integration and sensory modulation.
- Therapeutic Listening® is widely used as an occupational therapy intervention yet there is limited research reflecting the qualitative effects (Hall & Case-Smith, 2007).

Purpose of Study

- To analyze the quality of bilateral movement through a sensitive qualitative measure in typically developing children.
- This was a continuation study of a previous thesis completed in December 2014.
- Research question: For typically developing children, is the Therapeutic Listening® Bilateral Quickshift, when compared with white noise, more effective in improving bilateral coordination as measured by the quality of movement during bilateral tasks?

RESEARCH METHODOLOGY

Design

- A randomized control pretest-posttest experimental research design

Participants

- 31 typically developing children
- Inclusion criteria: English-speaking, seven to eleven year olds
- Exclusion criteria: no cognitive, mental, or physical disabilities, including sensory processing dysfunction

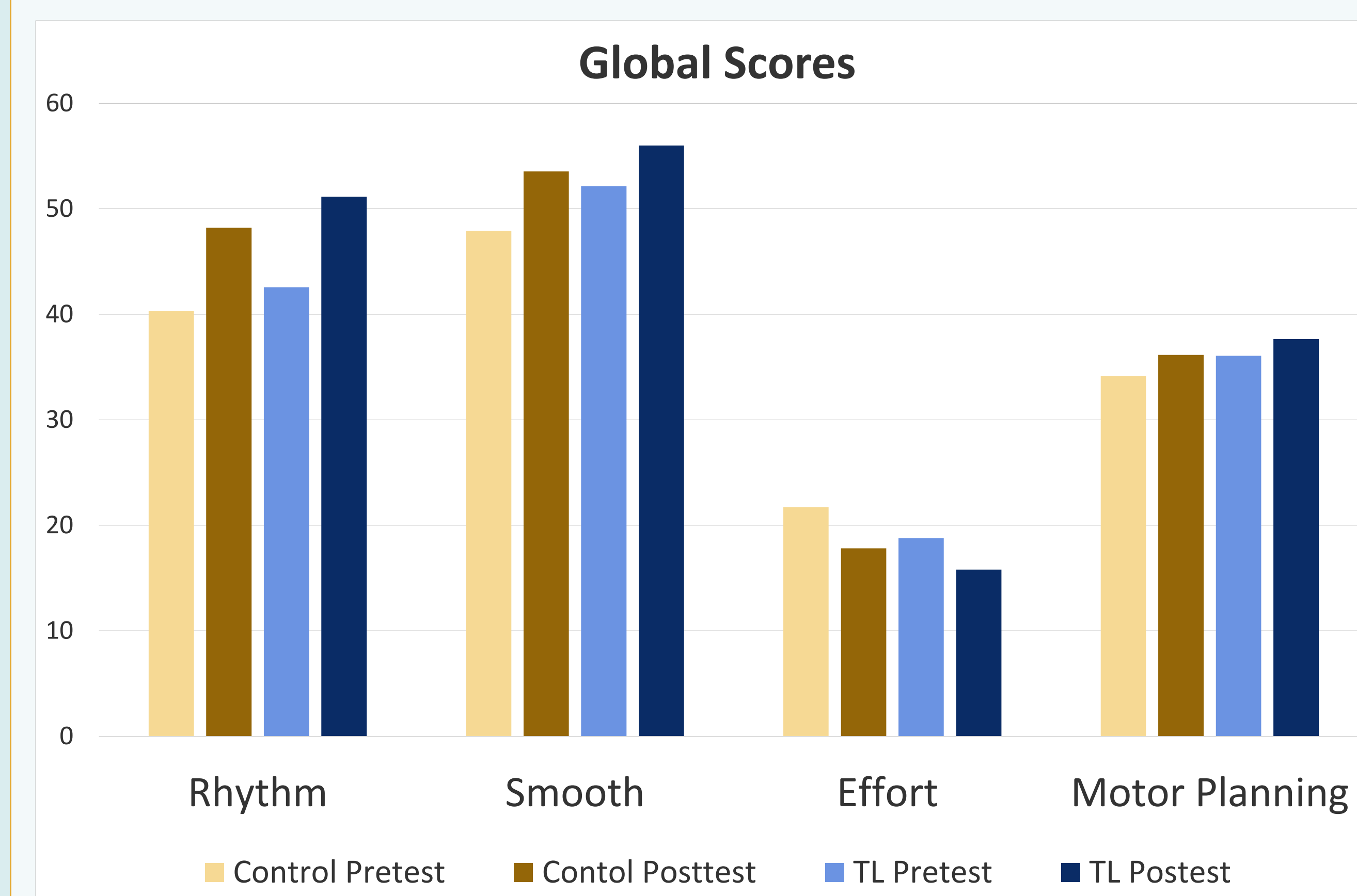
Tools

- Bruininks-Oseretsky Test of Motor Proficiency Second Ed.-Bilateral Motor Coordination Subtest (BOT-2)
- Sensorimotor Performance Analysis (SPA)
- Quick Neurological Screening Test, Third Ed. (QNST)
- Infinity Walk Observation Assessment

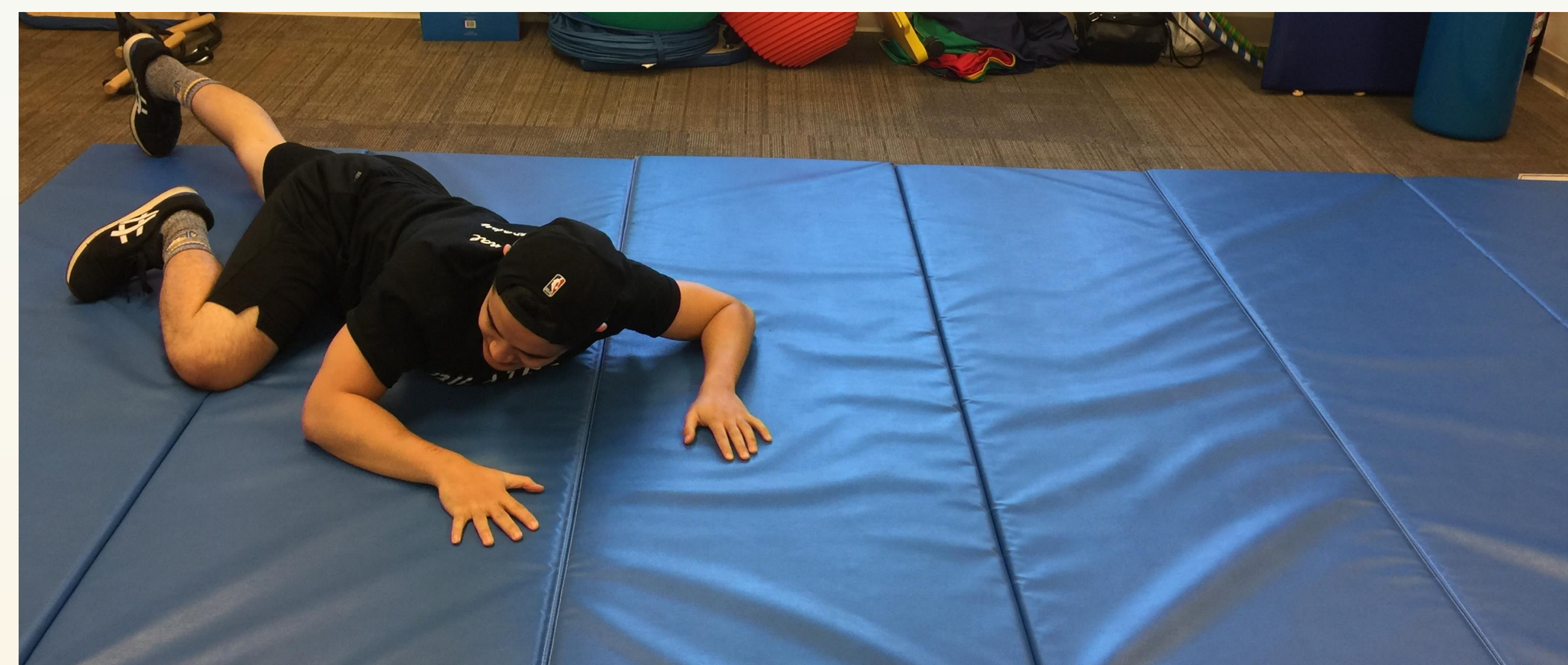
Our Qualitative Coding Tool

- Analyzed: posture, rhythm, smooth and continuous movement, effort, precision, and arm/leg movements

RESULTS



- Overall global scores on: rhythm, smooth and continuous, effort and motor planning, and symmetry and synchrony of upper and lower extremities aggregated across all items.
- The effect of the intervention was small but had a slight advantage over the control group for smoothness and rhythmicity.
- Analyzed individual items based on items that approached significance in previous study and after eliminating items with strong ceiling effect
 - Scissor jumps opposite sides
 - Feet and finger tapping opposite sides
 - Spider
 - Backwards tandem walk
 - Infinity walk
- The Quickshift series showed to have a moderate effect on the qualitative movement during bilateral tasks by improving smoothness and rhythmicity for specific tasks.



DISCUSSION/CONCLUSIONS

Overall Conclusions

- Binaural beats have an effect on bilateral coordination
- Able to qualitatively capture bilateral movement
- When compared to the white noise group, the Therapeutic Listening® group showed a greater improvement in bilateral coordination

Limitations

- Low power
- Strong ceiling effect
- Typically developing children
- Inconsistencies in setting, directions, and video quality
- Strong practice effect



IMPLICATIONS FOR PRACTICE

- The Quickshift series shows promise as a therapeutic intervention to improve bilateral coordination.
- Incorporating Therapeutic Listening® with different populations
- This study together with the standardized test scores from the previous study have a trending effect

Future Research

- Recruit a larger and more diverse sample
- Longer duration
- Consistency in filming and administration of tasks

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References

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