



Creating an Interdisciplinary Screening Tool for Retained Primitive Reflexes in a Pediatric Setting

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OVERVIEW OF CAPSTONE SITE

According to the facility website, The Center for Advancement of Youth (CAY) offers comprehensive, coordinated care through an interdisciplinary team for children with behavior or developmental issues who live in Mississippi. The goal of the CAY center is to ensure that no child suffers from lack of appropriate behavioral or developmental treatment. The population overview at the CAY center consists of children ages birth through 25 who have a developmental delay, or neurodevelopmental disability. Common diagnoses treated at the CAY center consist of ADHD, ASD, and behavioral deficits. The CAY center also facilitates grant funded projects in order to integrate evidenced based practice into everyday treatment (Center for the Advancement, n.d).

LITERATURE SUMMARY

Risk factors for primitive reflex retention include: low SES, maternal stress in utero, stress in the family unit, developmental delays, and neurological deficits (Grigg, 2018) .

Children with retained primitive reflexes and diagnoses such as ADHD, ASD, and behavioral concerns may share similar symptoms (Eylen et al, 2015) .

Symptom similarities could include associated motor problems, incoordination, sensitivity to sensory information, mood swings, attention and focus issues, and low concentration (Melillo et al, 2020) .

Retained primitive reflexes are also related to learning disorders and academic delays (Bilbilaj et al, 2017) .

NEEDS ASSESSMENT

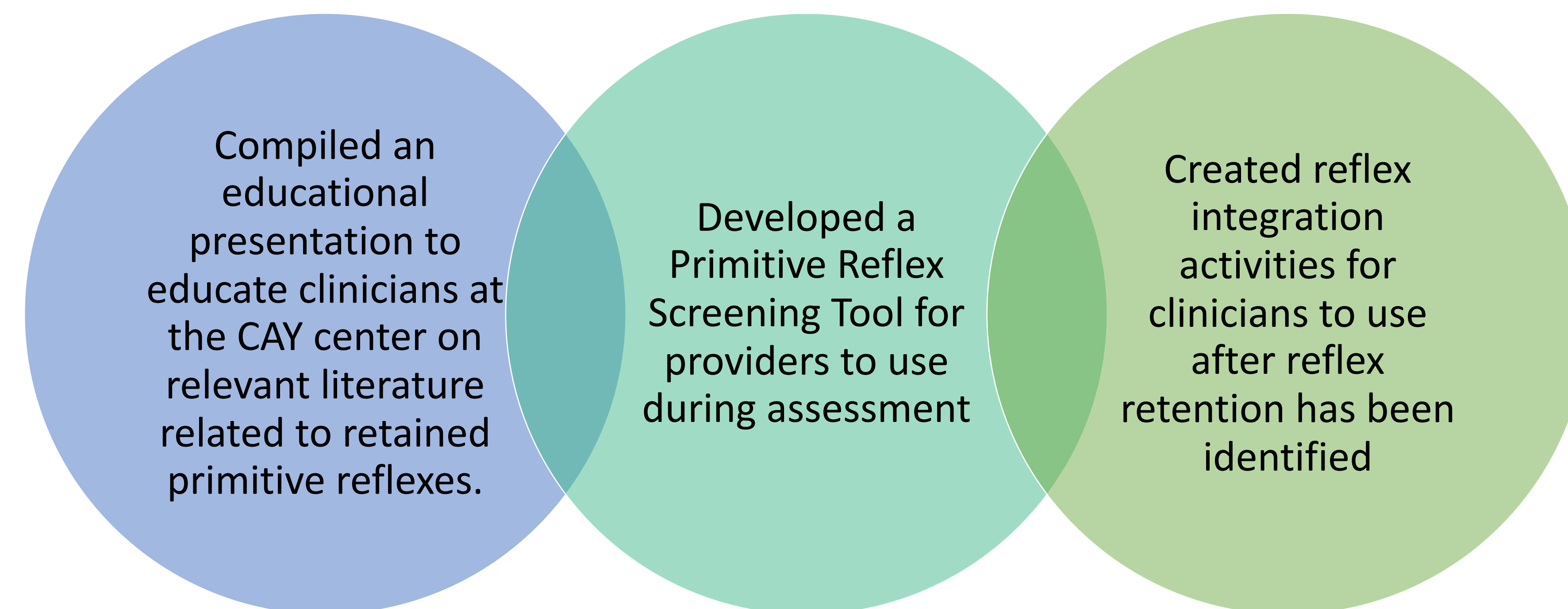
The Phase I Needs Assessment took place on 6/22/20. A semi-structured interview guide was used to meet with the capstone mentor and discuss potential needs at CAY. Upon arrival to the CAY center on 2/22/21 the same needs were no longer identified. At this point, an informal Phase II Needs Assessment followed after arriving in person on site. The Phase II Needs Assessment consisted of multiple in depth conversations with pediatric providers ranging from developmental pediatricians, child psychologists, speech therapists, and occupational therapists. Multiple needs were identified at this point. The ultimate decision for the topic of the capstone project came from the identification of a need relating to a gap in research in the therapy department. The need identified related to a lack of research and tools related to primitive reflexes and retained primitive reflex integration.

PROJECT GOALS / OBJECTIVES

1. Identify primitive reflexes and the role they play in normal development
2. Recognize risk factors for primitive reflex retention
3. Distinguish the effects retained reflexes have on proper development
4. Understand and implement a primitive reflex screener into client centered treatment and evaluation
5. Understand the integration process of retained reflexes

PROJECT DEVELOPMENT

The multifactorial purpose of the capstone project was to educate clinicians at the CAY center about retained primitive reflexes while also developing an interdisciplinary primitive reflex screening tool for clinicians to implement during assessment and reflex integration exercises to use if a child does present with retained reflexes.

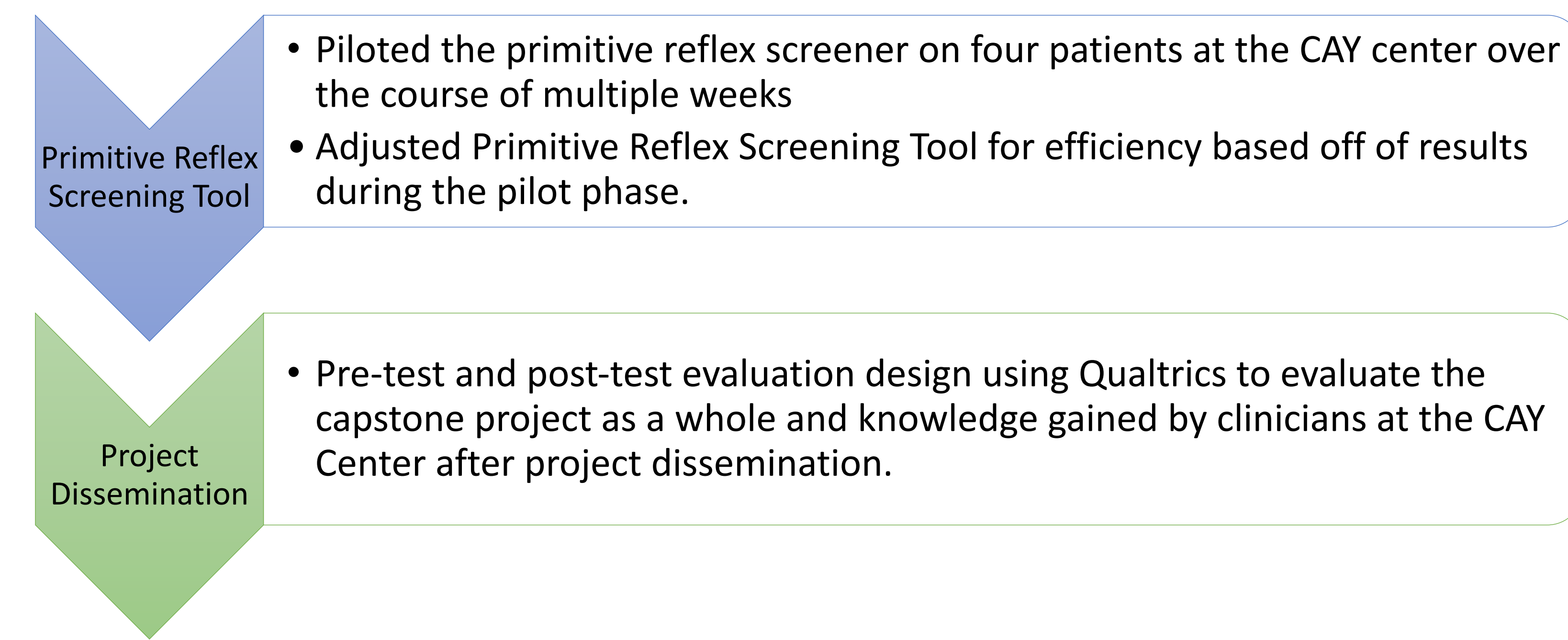


Primitive Reflex	Integrated by	Signs of Retention	Test Administration	Positive Responses
Fear Paralysis Reflex	The time the baby is born	— Sensitivity to sensory information — Balance issues — Low stress tolerance: "freezing" when in a stressful situation.	Remove shoes and socks, watch child walk towards you.	— No eye contact — Holds Breath — Has tension in the body — Clenches fists — Sways — Toes curl or twitch
Moro Reflex	2 to 4 months old	— Sensory issues, anxiety — Poor impulse control — Distractible — Mood swings — Easily startled — Poor Balance and Coordination	Test 1: Duck Walk- Instruct child to walk with heels about 4-6 inches apart, toes pointed out. Test 2: Pigeon Toe Walk- Instruct the child to stand with toes about 4-6 inches apart with heels outward.	— Arms raising in the air — Inability to point feet outward in duck or pigeon toe position — Excessive Blinking — Anxious — Elbows out, palms backward
Spinal Galant Reflex	3 to 9 months	— Posture issues — Fidgeting — attention and focus issues — Bed wetting after the age of 5 — Poor short-term memory	In Quadruped, trace down the left side of the back, repeat on the right side.	— Child experiences pain, tingling, or dipping of the back — Curved Toes — Movement on either side of spine — Arch of Back
ATNR	9 to 11 months	— Poor hand-eye coordination — trouble crossing the midline — Poor fine motor skills — Visual tracking deficits — Dyslexia	Test 1: Have the child stand with arms and hands straight out in front. Instruct child to keep that position while turning their head to one side and then to the other.	— Elbows bending — Shoulders turning in direction of head — Rigid or restricted head movement

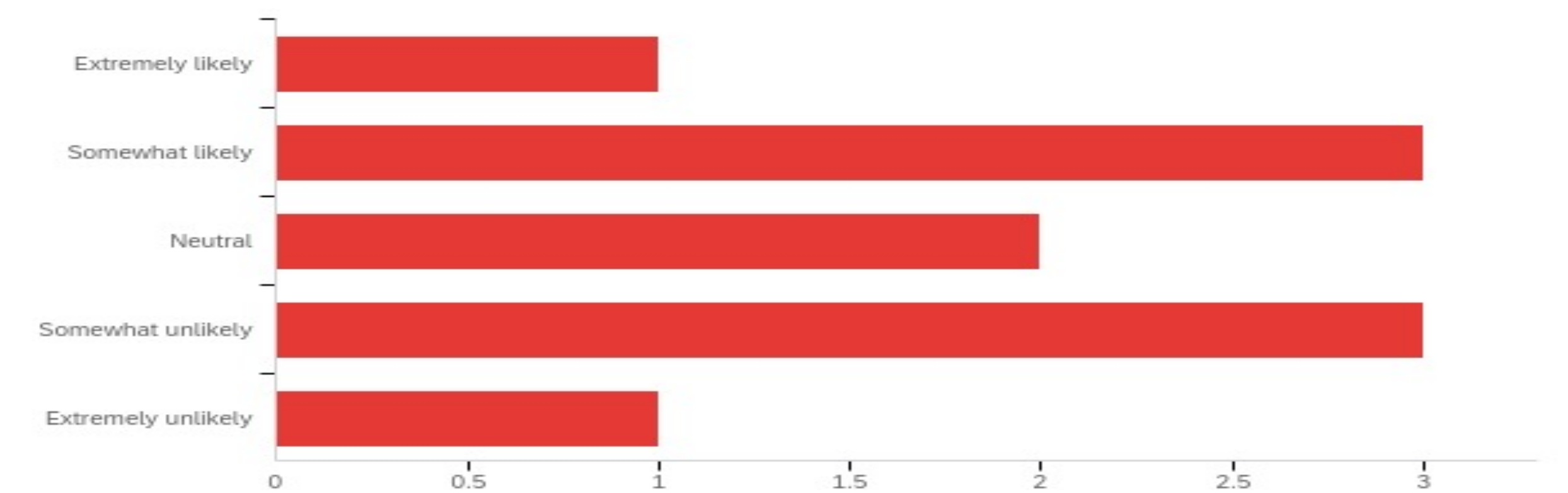
			Test 2: In Quadruped, gently turn the child's head to the left and the right. *If the ATNR reflex is integrated the child will be able to move their head to the left and right without arms moving.	— Back curves or shivers
STNR	9 to 11 months	— W-sitting — Poor muscle control — Poor hand-eye coordination — Low concentration	In Quadruped instruct child to lower head bringing chin toward the chest for a count of 7 seconds, then raise head up toward their back. *If the STNR reflex is integrated the child will be able to perform head extension and head flexion without their back moving.	— Back twitching — Back arching when head is down — Arms bending or body weight shifting back towards legs when head goes up — Restricted head movement
TLR	3 ½ years	— Toe walking — poor muscle tone — Motion sickness — Spatial awareness deficits	Test 1: Lying in prone, instruct the child to lift their arms and legs off the floor for 10 seconds. Test 2: Instruct child to stand up straight with eyes closed. Ask child to tilt head back, and then tilt head forward.	— Bending knees in prone — Tilting back and forth while standing with eyes closed. — Losing balance while standing — Head drops — Nausea or Dizziness

Positive Response Scoring
1=Questionable
2=Present
3= Pervasive
4= Severe

PROJECT EVALUATION

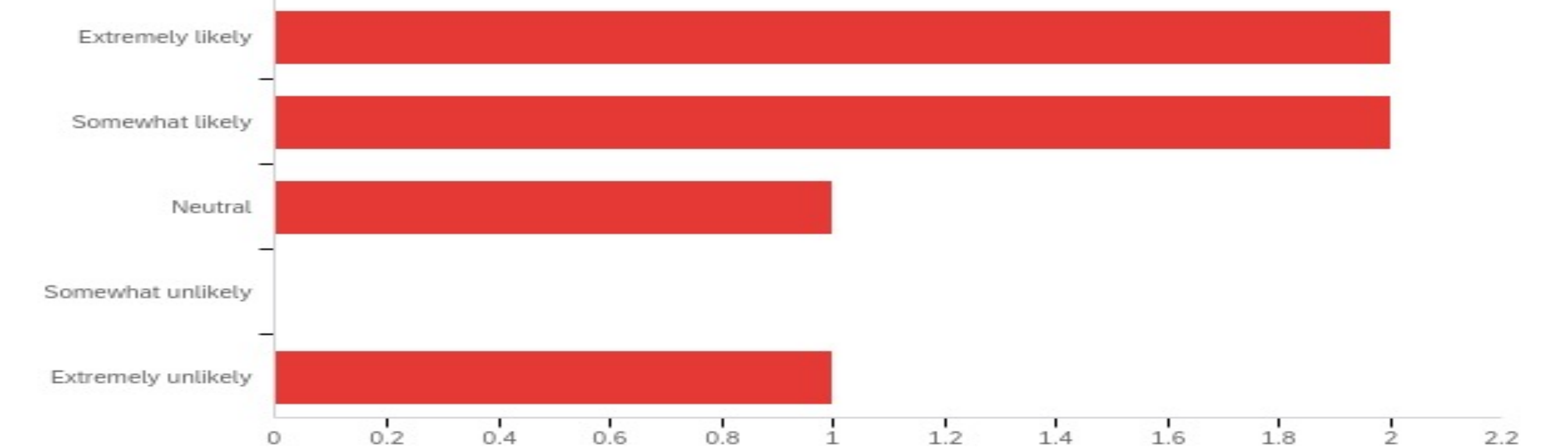


Example Pre- test Results
Q6 - How likely are you to integrate a primitive reflex screener into your assessment process?



Example Post-test Results

Q6 - How likely are you to integrate a primitive reflex screener into your assessment process?



PROJECT SUMMARY AND FUTURE RECOMMENDATIONS

The capstone project aimed to educate clinicians about retained primitive reflexes and equip providers with the tools to evaluate for retained primitive reflexes in their personal clinical practice in the future. Tools created include a primitive reflex screener and integration exercises for each retained reflex. Further research could include: continuing to collect data on number of children with retained reflexes at the CAY Center, documenting the success rate of reflex integration by using the tools provided (Integration exercises) , educating physicians about retained primitive reflexes throughout Mississippi, and distributing the primitive reflex screener to physicians or other clinical providers in Mississippi outside of the CAY center.

Special thank you to Dr. Elkin, capstone mentor at the Cay center, and to all the clinicians at the CAY center for their time throughout the entirety of the capstone experience.