

“MARTIAL ARTS AS AN INNOVATIVE THERAPEUTIC MODALITY FOR CHILDREN WITH AUTISM SPECTRUM DISORDER”

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Scan me for up to date analysis and references! Wow!

OBJECTIVES

- Main Goal:**
- To evaluate the effectiveness of martial arts-based interventions, specifically Tai Chi Chuan, Qigong, and Escrima
- Specific Aim:**
- To improve motor coordination, neurological development, and psychosocial well-being in children with ASD

METHODOLOGY

- 1

**Literature Review**

A comprehensive review of 287 articles was conducted, removing 61 duplicates to ensure uniqueness.
- 2

**Screening and Meta Analysis:**

After an abstract review, 97 articles were excluded for not meeting criteria, leaving 58 articles with sufficient sample sizes and relevant data for meta-analysis.
- 3

**Material Update:**

Guidelines and training materials were revised based on feedback to enhance clarity, accessibility, and instructional quality.
- 4

**Instructor Guidelines and Training Manual:**

Findings from the literature review and meta-analysis informed the creation of standardized guidelines and a training manual for martial arts training for individuals with ASD.
- 5

**Case Study:**

A preliminary case study will assess the initial effectiveness of instructor training, aiming to refine the approach before a larger rollout.
- 6

**Begin Instructor Training:**

Once finalized and updated based on case study findings, instructor training will commence on a larger scale.

Engaging Martial Therapies for Children with Autism—Boosting Social Skills, Reducing Anxiety, and Enhancing Motor Coordination

MARTIAL ART TECHNIQUES

- Tai Chi Chuan**

  - Slow, controlled movements.
  - Effects: Improves balance, motor coordination, and focus
- Qigong**

  - Meditative breathing and movement exercises.
  - Effects: Reduces autism severity, enhances self-control, and improves sociability
- Escrima (Filipino Stick Fighting)**

  - Bilateral rhythmic striking patterns using rattan sticks.
  - Effects: Enhances proprioception, fine motor skills, and interlimb coordination
- Brazilian Jiu-Jitsu (BJJ) & Judo**

  - Grappling-based arts with partner drills.
  - Effects: Improves gross motor skills, body awareness, and social interaction
- Jeet Kune Do (JKD)**

  - Versatile martial art incorporating techniques from various disciplines.
  - Effects: Enhances motor adaptability, emotional regulation, and cognitive flexibility

PROBLEM STATEMENT

Children with Autism Spectrum Disorder (ASD) often face significant challenges in motor skills, neurological development, and social interaction. While effective in some areas, traditional therapeutic approaches may not fully address these individuals' diverse needs, necessitating alternative, holistic interventions.

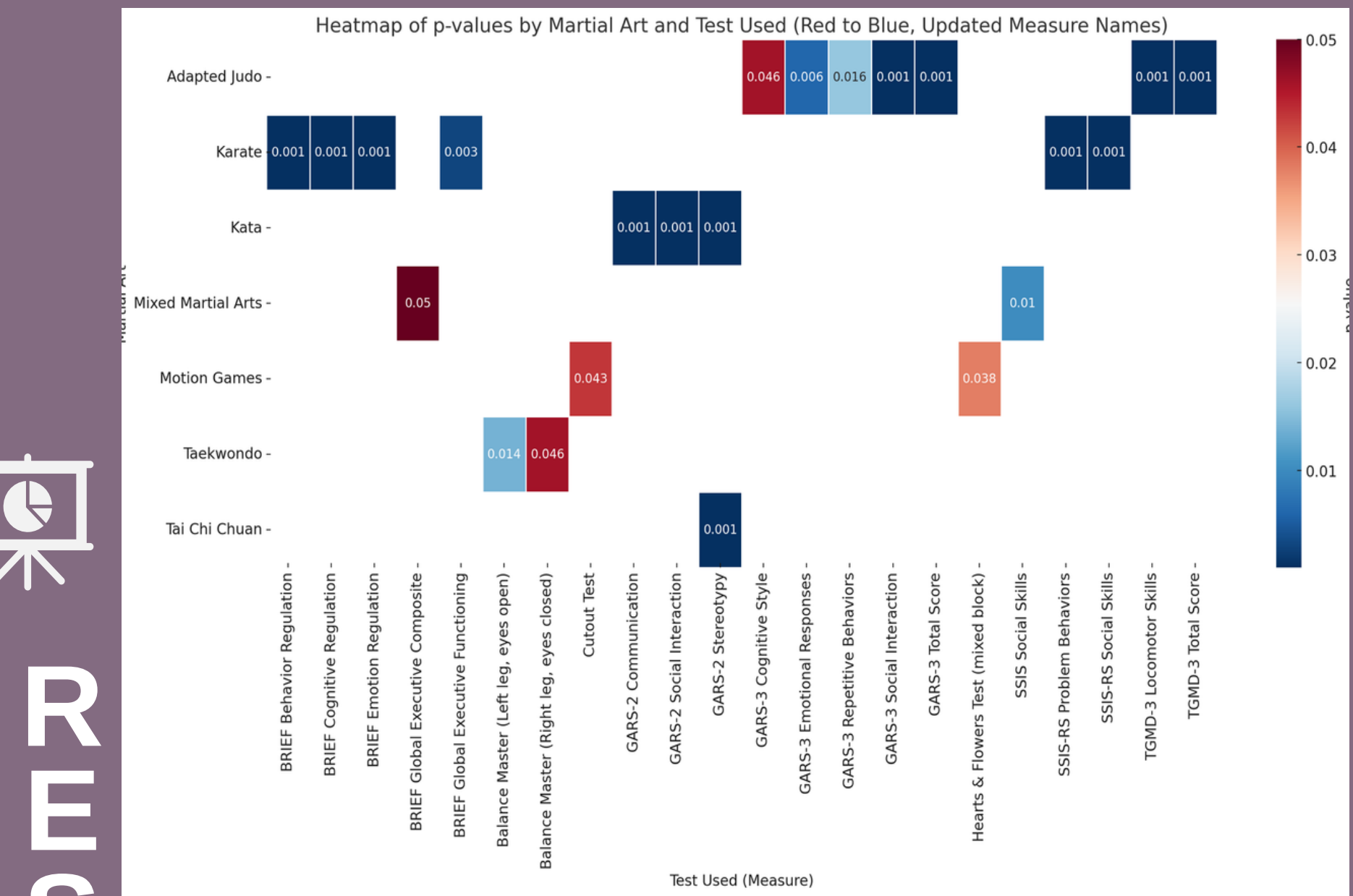


Figure 1: Heat map of combined-value of martial arts

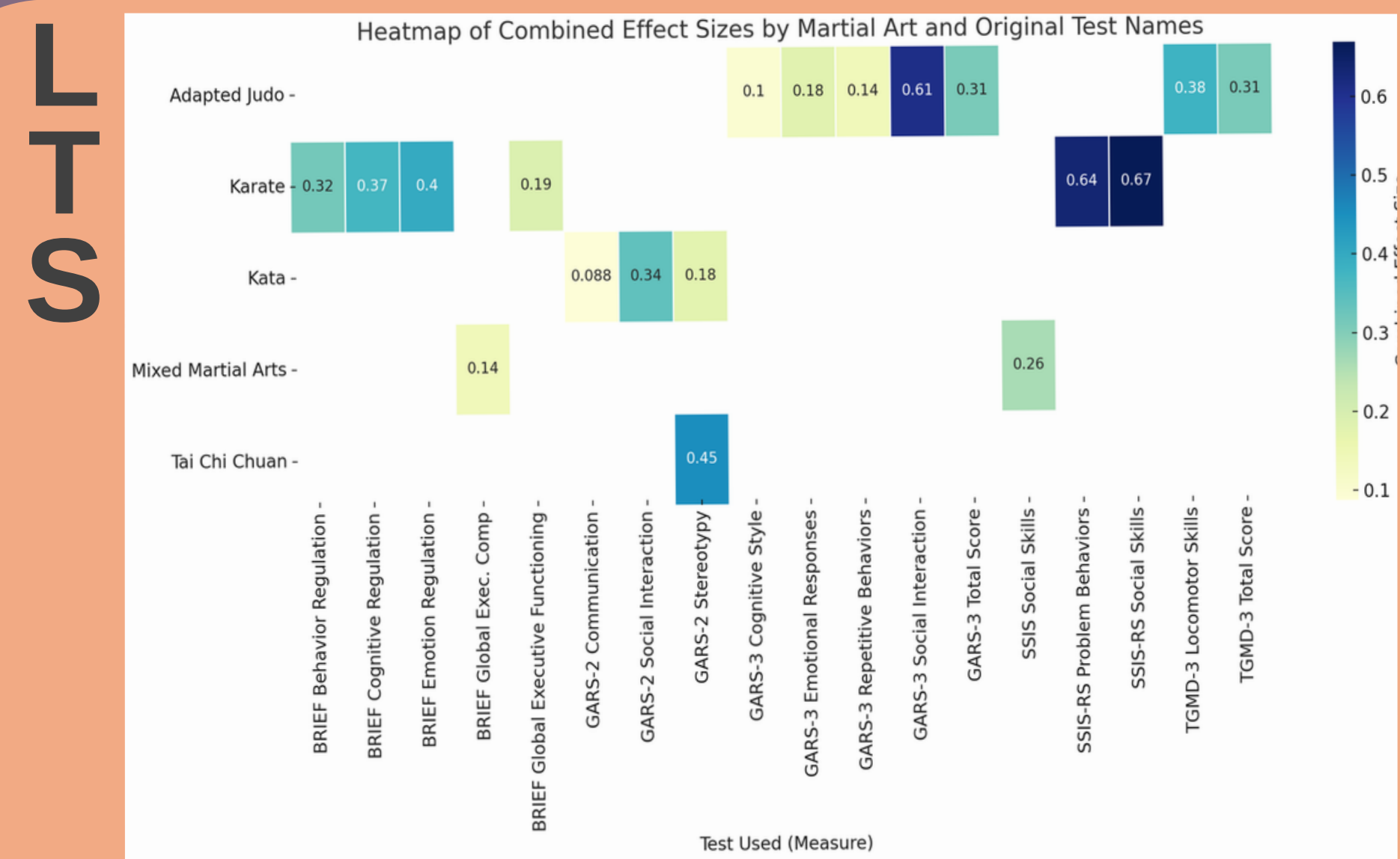


Figure 2: Heat map of combined effect size



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Study/Authors	Intervention	Key Findings	Physical Impact	Psychosocial Impact
Bahrami et al. (2012)	Kata techniques for children with ASD	42.54% reduction in stereotypic behaviors	Improved motor coordination	Enhanced social interaction
Greco & De Ronzi (2020)	Karate program for children with ASD	Better communication and behavior	Enhanced physical fitness	Increased social skills, reduced repetitive behaviors
Haydicky et al. (2012)	Mindfulness Martial Arts (MMA) for adolescents	Improved self-regulation, decreased anxiety	Improved overall well-being	Reduced externalizing behaviors, better attention
Milligan et al. (2015)	MMA for youth with self-regulation challenges	Increased calmness, improved distress tolerance	Improved fitness and motor skills	Better peer relationships, reduced behavioral issues
Chen et al. (2024)	Sports game intervention for children with ASD	Enhanced executive function	Increased physical engagement	Improved cognitive flexibility, social behavior
Moore et al. (2020)	Martial arts interventions for mental health	Reduced internalizing mental health issues	Minor improvements in well-being	Reduced anxiety and depression
Phung et al. (2012)	MMA for children with ASD	Improved inhibitory control, cognitive flexibility	Enhanced motor skills	Improved emotional regulation, reduced stress

RELATED RESEARCH

DISCUSSION

- Effectiveness of Interventions for ASD**
- Adapted Judo and Karate:** High effectiveness for social and behavioral skills ( $p < 0.05$ ).
  - Mixed Martial Arts and Kata:** Lower, variable effectiveness.

- Key Factors Influencing Efficacy**
- Structure:** Repetition and framework aid skill-building.
  - Social Interaction:** Partner and group practices improve communication.
  - Goals:** Belt ranks motivate ongoing engagement.
  - Adaptability:** Movements can be modified to support progress.

CONCLUSION

- Karate and Adapted Judo:** Effective for improving social, emotional, and behavioral outcomes in individuals with developmental challenges.
- Physical Benefits:** Enhance motor coordination, balance, and muscle tone.
- Neurological Benefits:** Tai Chi and MMA may aid neuroplasticity but are less consistent.
- Psychosocial Gains:** Improve social interaction, reduce anxiety, and support emotional regulation.
- Interdisciplinary Value:** Adaptable to sensory and communication needs, promoting inclusivity.