2024

Aquatic Therapy for Children with Cerebral Palsy

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Aquatic Therapy Interventions for Children with Cerebral Palsy: A Systematic Review

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INTRODUCTION

BACKGROUND:

- Cerebral palsy (CP) is the most common developmental disability associated with decreased motor functioning in children. Children diagnosed with CP tend to present in many ways but tend to demonstrate a lack of coordination, generalized muscle weakness, poor voluntary control, and decreased engagement in play.

OBJECTIVE:

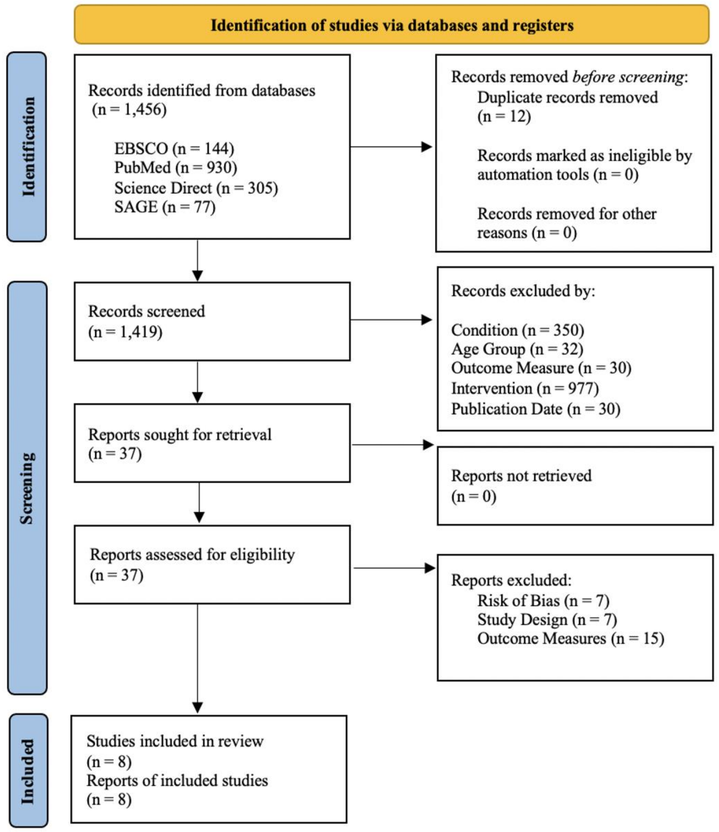
- Identify and synthesize existing research on the relationship between aquatic therapy, play participation, and motor functioning for children from birth to age thirteen with cerebral palsy.

METHODS

Three reviewers collaborated throughout the methodology as all tasks were pre-determined using an a-priori process.

- Four databases were searched which included EBSCO Education Research Complete, PubMed, Sage Journals and ScienceDirect. Two search strings were created, removing duplicates.
- Only studies that were peer-reviewed, included children with CP from birth to 13 years of age, related to aquatic therapy, play participation and motor function, and were published between 2013-2023 were included in this systematic review.
- An independent review was conducted by assessing articles by title, abstracts, then by full text with tie breaking occurring in-between each step . Risk of Bias was assessed individually according to study design. One tiebreaking occurred for one study. Three additional studies were added that directly included aquatic therapy resulting in a total of eight eligible studies.

PRISMA FLOW CHART



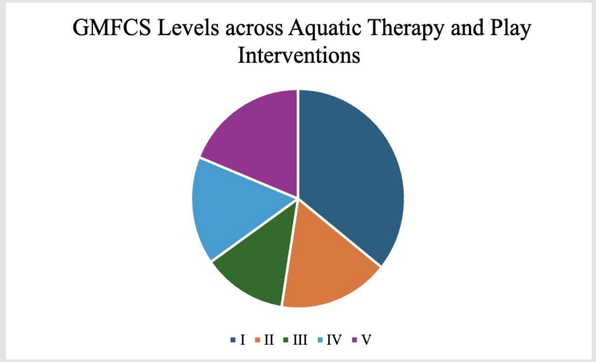
RESULTS

AQUATIC THERAPY:

- Water relaxes abnormal muscle tone as children with CP have poor joint alignment, muscle weakness, and tend to be sedentary due to activity limitations.
- Gross Motor Function Classification System (GMFCS) scores increased by 4.25 points after participating in aquatic sessions.

PLAY PARTICIPATION:

- Children are motivated to participate in play through watching and communication.
- Social elements in the environment facilitate or create barriers.



DISCUSSION

- Children with levels I-II displayed increased play participation, children with levels IV-V had activity limitations.
- Lack of understanding for supporting adaptable play interventions for children with limitations.

CONCLUSION

- Improvements in motor functionality & play participation after transition from water to land intervention.
- Children with CP have an adaptable understanding of play.
- Continuous aquatic-based programs ensure long- term benefits of motor function.

IMPLICATIONS FOR OT PRACTICE

- Promote engagement in play participation through motor tasks and activities of daily living training (ADLs.)
- Addressing the need for aquatic-based facilities by advocating for program development and access to care.
- Explore further research on aquatic therapy utilizing both play & motor function as outcomes.

SEARCH STRING(S) PER DATABASE

EBSCO, SCIENCEDIRECT, & SAGE JOURNALS:

(Cerebral Palsy OR aquatic therapy OR child OR occupational therapy OR play.)

SCIENCEDIRECT:

"cerebral palsy" + "early childhood" + "hydrotherapy" OR occupational therapy + "enjoyment"

GMFCS LEVELS BREAKDOWN

- I – II: **Able to independently ambulate**
- III – V: **Self-mobility is limited, may need to utilize assistive devices**
  - Children functioning at levels IV-V have limited physical function.
  - Creates the most limitations in opportunities for participation in leisure.

REFERENCES

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