



The Use of Aquatic Programs to Improve Social Outcomes For Children With Developmental Disabilities

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Background

- Developmental disabilities are a group of conditions due to an impairment in physical, learning, language, or behavior areas.
- Most developmental disabilities begin before a baby is born, but some can happen after birth because of injury, infection, or other factors.
- These conditions begin during the developmental period, impact day-to-day functioning, and usually last throughout a person's lifetime
- 1 in 6 children are diagnosed with a Developmental Disability each year (CDC, 2015).
- Positive and appropriate social behaviors are an important outcome for individuals with developmental disabilities.
- Aquatic programs provide an alternative for a child with a developmental disability to work on improving and increasing social behaviors.

Purpose

- The purpose of this project is to present a systematic review about the use of aquatic programs to improve social outcomes in children with different developmental disabilities.
- The specific **research question** is: *What are the effects of aquatic programs on improving social outcomes in children with different types of developmental disabilities?*
- This systematic review included developmental disability populations of Autism, Cerebral Palsy, and Down Syndrome.

Results

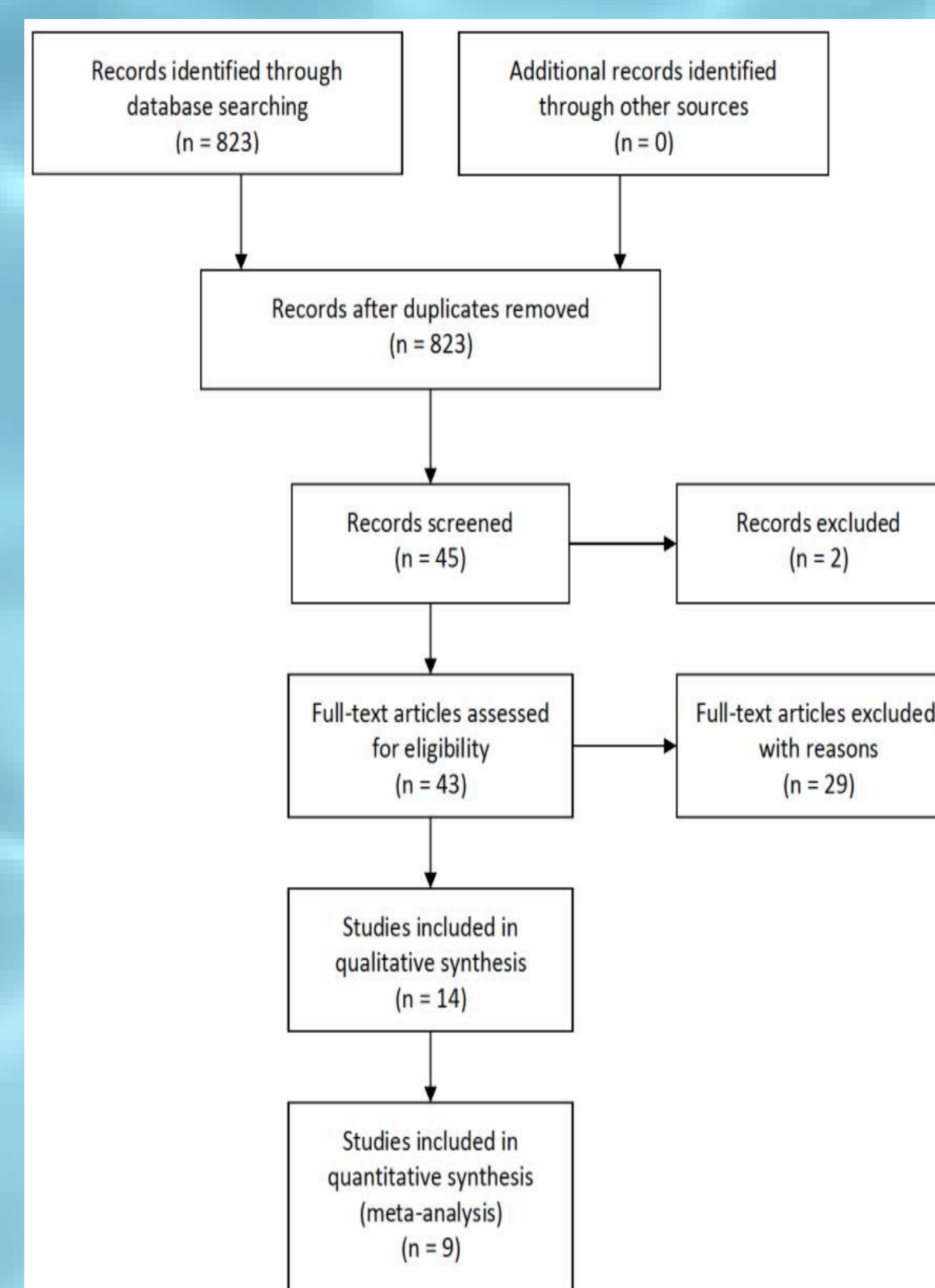
POPULATION	PARTICIPANTS	DOSAGE	OUTCOME MEASURE	AVERAGE EFFECT SIZE
Autism Chu, C. & Pan, C. (2012) Fabrizi et al., (2013) Pan, C. (2010) Pushkarenko et al., (2016)	<i>n</i> = 3 to 16 Boys = 3 to 16, Girls = 2 to 4 Ages = 2;5 to 17;0	10 to 16 Week Programs Total Sessions = 8 to 32 Duration = 30 to 90 min.	CEPI-PE ToP SSBS-2 ALT- PE	1.59
Down Syndrome Fiorilli et al., (2016)	<i>n</i> = 93 Boys = 54, Girls = 39 Ages = 16;0 to 16;4	Program Participation = 8.4 yr. avg. Duration per Week = 4.9 hr. avg.	SDQ	1.14
Cerebral Palsy Declerck et al., (2013) Getz et al., (2007) Maniu et al., (2013) Ozer et al., (2007)	<i>n</i> = 7 to 24 Boys = 3 to 18, Girls = 4 to 17 Ages = 4;9 to 13;0	12 to 24 Week Programs Total Sessions = 8 to 48 Duration = 20 to 45 min.	CP-QOL PEDI KINDLR-QOL CBCL	1.61

CEPI-PE: Computerized Evaluation Protocol of Interactions in Physical Education; ToP: Test of Playfulness; SSBS-2: School Social Behavior Scales; ALT- PE: Academic Learning Time and Physical Education System Observation Instrument; SDQ: Strengths and Difficulties Questionnaire; CPQOL: CP Quality of Life Questionnaire; PEDI: The Pediatric Evaluation of Disability Inventory; KINDLR-QOL: KINDLR-Questionnaire for Measuring Quality of Life in Children and Adolescent's; CBCL: The Child Behavior Checklist

Literature Search

- The following databases were used to retrieve articles: Academic Search Complete, ERIC, Google Scholar, PsycINFO, ScienceDirect, and SPORTDiscus.
- The search terms/key words used were: developmental disabilities, aquatic therapy, social outcomes, autism, cerebral palsy, down syndrome, hydrotherapy.
- Additional search criteria included:
 - Articles in English
 - Published 1993 or later
- *Articles were included based on the following criteria:* Children and adolescents with developmental disabilities, pool based aquatic programs, social outcomes measured by questionnaires and scales
- *Articles were excluded based on the following criteria:* Social outcomes measured by parent reports, articles not peer reviewed

Article Analysis



Clinical Recommendations

- Findings suggest that aquatic programs have a positive effect on physical/emotional well-being, self-esteem, family/social relationships in children with developmental disabilities.
- Aquatic programs promote social interactions between peers and teachers, a level of acceptance and increases the level of attention, interaction, and participation in children with different types of developmental disabilities.
- This is supported by a range of large effect sizes.
- Limitations include: Small sample sizes, study designs, cognitive differences not reported
- Clinical recommendations are to integrate aquatic programs into therapy for children with different types of developmental disabilities to improve social outcomes.
- Future directions are to conduct studies focusing primarily on social outcomes as a result of aquatic programs as compared to traditional social skill programs and to utilize study designs that would support higher levels of evidence

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