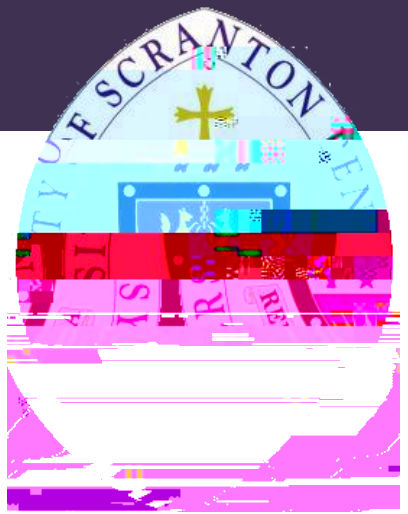
EFFECTS OF COMBINED SKILLED AQUATIC AND LAND BASED THERAPY COMPARED TO LAND THERAPY ALONE ON BALANCE AND GAIT IN ADULTS AFTER A STROKE: A SYSTEMATIC REVIEW

Gianna Vitolo, SPT
Emily Suchocki, SPT
Colleen Smith, SPT
Megan Manzo, SPT
Peter Leininger, PT, PhD, Board-Certified Specialist in Orthopedic Physical Therapy



Overview

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Background[1]

- Risk factors for stroke
  - Medical conditions including:
    - Hypertension
    - High cholesterol
    - High blood glucose/diabetes
  - Lifestyle behaviours:
    - Physical inactivity
    - Poor diet
    - Smoking
    - High alcohol consumption

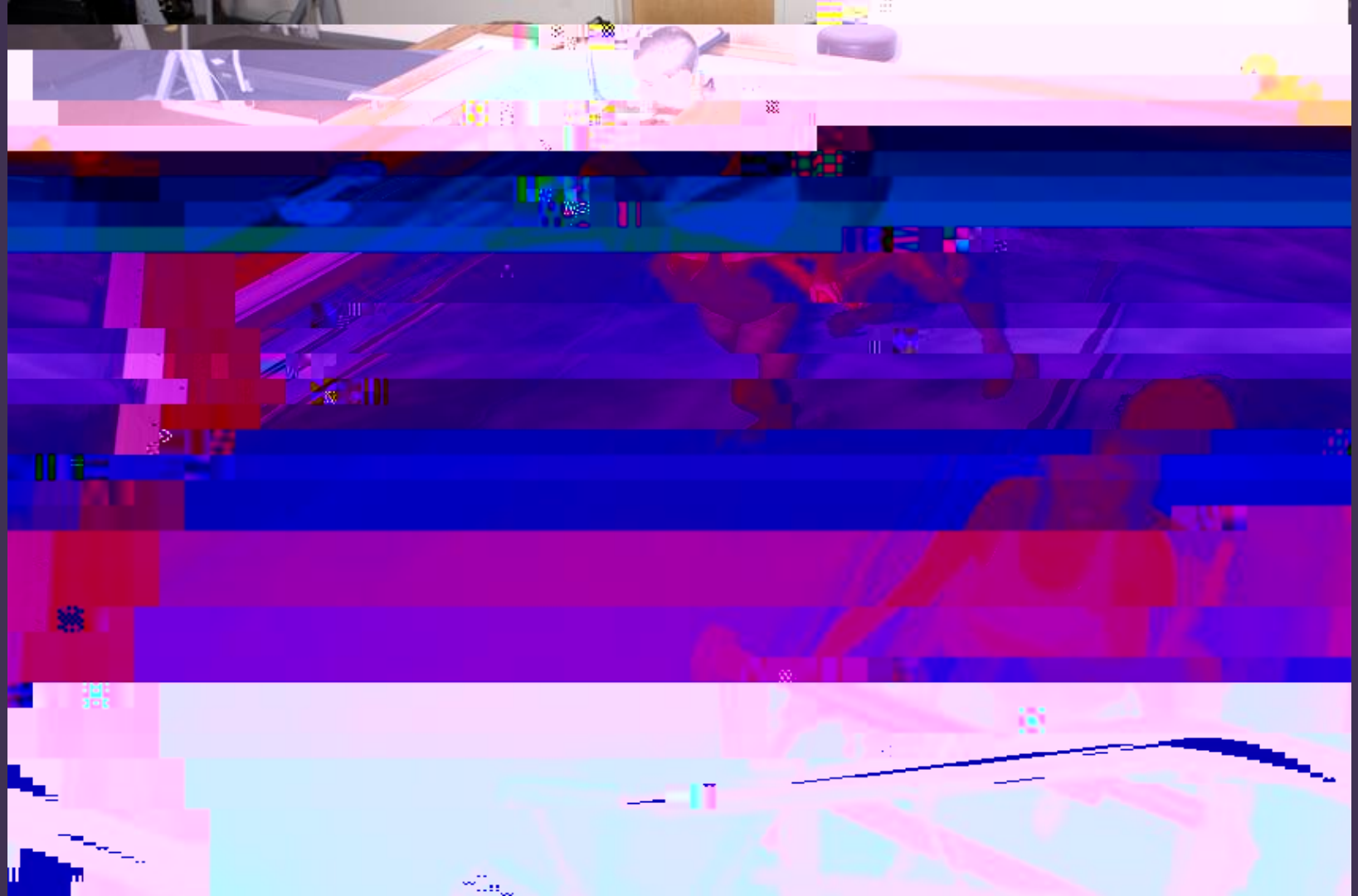
Background

- Stroke is the second leading cause of death worldwide[1]
- Leading cause of acquired disability in adults[1]
- Affects 795,000 people per year in U.S.[1]

- 65% of patients who have suffered a stroke experience loss of tactile sensation, the protection reaction, and proprioception, which is closely correlated with balance ability.[2]

Defined Inclusion Criteria

- _____



Purpose

The purpose of this systematic review is to compare the effects of skilled aquatic therapy combined with land based therapy (AT/LBT) to land based therapy (LBT) on physical function in adults that have experienced a cerebrovascular accident (CVA).

Methods

Databases:

- MEDLINE/PubMed, CINAHL, ProQuest, Cochrane Library and hand-searching

Two reviewers independently assessed each article for methodological quality and came to a consensus using PEDro guidelines.

Search Terms

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Search Limits

- Humans
- Peer reviewed articles
- English language
- Articles from 2011-2018

Selection Criteria

- Adults at least 18 years old
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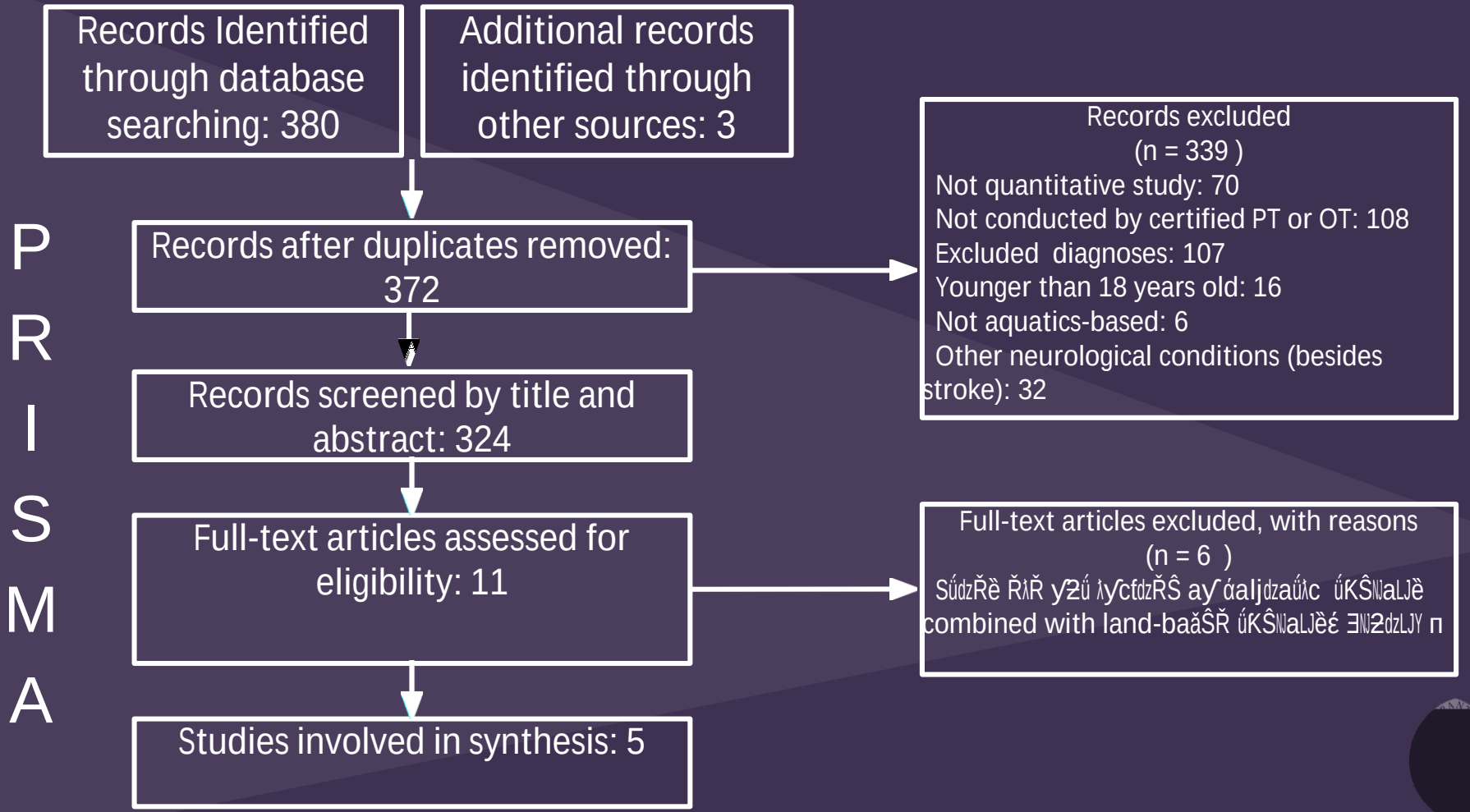
Records Identified through database searching: 380
Additional records identified through other sources: 3
Records after duplicates removed: 372
Records screened by title and abstract: 324
Full-text articles assessed for eligibility: 11
Studies involved in synthesis: 5
Records excluded
(n = 339)
Not quantitative study: 70
Not conducted by certified PT or OT: 108
Excluded diagnoses: 107
Younger than 18 years old: 16
Not aquatics-based: 6
Other neurological conditions (besides stroke): 32
Full-text articles excluded, with reasons
(n = 6)
combined with land-baăŜŘ ŭKŜℕaLJèɛ ∃ℕ2ɑzLJY n
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	Y	Y	Y	Y	N	N	Y	Y	Y	Y	N	7/10
	Y											

Results

- A total of 372 articles were screened for eligibility
  - Five articles met selection criteria
- PEDro scores ranged from 4 to 7/10
  - Average score: 6
- Individual samples ranged from 20-120 participants

Results- Gait Outcomes

- All studies with AT/LBT found greater improvements in outcome measures compared to the LBT groups

- Three of five articles focused on gait[3,4,6]
  - All found significant improvements in outcome measures including cadence, speed, and 10MWT

Conclusions

- Moderate to strong evidence supports both short and long term therapy combining aquatic and land based interventions on improving balance and gait in adults following a CVA.

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Clinical Relevance

- It is a safe intervention to improve aspects of mobility needed for community ambulation and activities.

- Evidence suggests AT/LBT, compared to LBT alone, better prepares patients with CVA for functional community participation and should be implemented into treatment.

Take Home Message

- Patients with deficits in gait or balance after a cerebrovascular accident can benefit from an aquatic therapy supplement to their conventional therapy. It can also improve patients quality of life and independence in regards to mobility.

References

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5. Park SW, Lee KJ, Shin DC, et al. The effect of underwater gait training on balance ability of stroke patients.

Thank you!

Peter Leininger, PT, PhD, Board

Questions?