



IDENTIFYING BETTER STRATEGIES TO ENGAGE PARTICIPANTS WITH BRAIN INJURY IN ADAPTIVE YOGA AND EXERCISE PROGRAMMING

JEN A. WEAVER PH.D., OTR;

JESSICA BOMBINO-ELLIOTT PT, DPT; ALEC GROVE PT, DPT;

JACLYN A. STEPHENS PH.D., OTR;

ARLENE A. SCHMID PH.D., OTR, FAOTA





OCCUPATIONAL THERAPY
COLORADO STATE UNIVERSITY

COLLEGE OF HEALTH AND HUMAN SCIENCES

INTRODUCTION



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- Acquired brain injury (ABI) can occur due to traumatic (car accident) and non-traumatic etiologies (stroke, hypoxia or anoxia, tumor resection, etc.)
- Individuals with ABI may experience care in the ER, hospital, or inpatient rehab and then experience chronic impairments.
 - Physical, cognitive, emotional, social
- Minimal resources address the ongoing, chronic (>6 months) needs for individuals who live in the community with ABI
- There are barriers that individuals with ABI face when initiating and completing physical activity interventions, such as yoga.

RESEARCH OBJECTIVE

Align implementation strategies with participant-identified barriers and facilitators to engagement in adaptive yoga or low-intensity exercise



METHODS



STUDY DESIGN: QUALITATIVE RESULTS FROM A RANDOMIZED CONTROLLED TRIAL PILOT STUDY

 frontiers | Frontiers in Human Neuroscience

Adaptive yoga versus low-impact exercise for adults with chronic acquired brain injury: a pilot randomized control trial protocol

Jaclyn A. Stephens^{1,2,3*}, Jesus A. Hernandez-Sarabia¹, Julia L. Sharp⁴, Heather J. Leach³, Christopher Bell³, Michael L. Thomas^{2,5}, Agnieszka Burzynska^{2,6}, Jennifer A. Weaver¹ and Arlene A. Schmid^{1,7}

¹Department of Occupational Therapy, Colorado State University, Fort Collins, CO, United States, ²Molecular Cellular and Integrative Neuroscience Program, Colorado State University, Fort Collins, CO, United States, ³Department of Health and Exercise Science, Colorado State University, Fort Collins, CO, United States, ⁴Sharp Analytics, LCC, Fort Collins, CO, United States, ⁵Department of Psychology, Colorado State University, Fort Collins, CO, United States, ⁶Department of Human Development and Family Studies, Colorado State University, Fort Collins, CO, United States, ⁷Center for Healthy Aging, Fort Collins, CO, United States

- Qualitative, descriptive study design
- Focus groups and interviews after yoga and low-intensity exercise Randomized Controlled Trial (RCT)
 - 60 minutes, twice a week for 8 weeks (16 sessions)
 - Convenience & purposive sampling
 - Participants completed focus groups or interviews during the final weeks of intervention
 - 21 participants, 62% of individuals enrolled in RCT, agreed to participate
 - (n=9 yoga, n=12 low-intensity exercise)

METHODS: DATA COLLECTION

- Semi-structured interview guide developed based on **implementation theories** and previous findings. Sample questions:
 - *"What surprised you the most about participating in a group program?"*
 - *"What were the dynamics of the group during the first 2–3 sessions compared to now?"*
 - *"What was challenging about participating in a group program embedded in a research study? What did you like the most?"*
- Conducted 4 focus groups and 3 1:1 interviews
 - Guided by the **Theoretical Domains Framework**
- All data were recorded and transcribed verbatim

METHODS: DATA ANALYSIS

- Framework analysis
- Codes categorized to implementation framework:
 - Theoretical Domains Framework (TDF)
 - 14 domains relevant to implementation and behavior change
- Categories mapped as barriers and facilitators
- Mapped categories to existing implementation science strategies (Expert Recommendations for Implementation Change [ERIC])

14 Domains	Domain Definitions	Code Summary & Examples
Environment	Any circumstance of a person’s situation or environment that discourages or encourages the development of skills and abilities, independence, social competence and adaptive behaviour	Structure/accessibility of environment, class structure, group environment
Skills	An ability or proficiency acquired through practice	Modifications, staff support
Emotion	A complex reaction pattern, involving experiential, behavioural, and physiological elements, by which the individual attempts to deal with a personally significant matter or event	Inclusive, safe space, no judgement
Social influences	Those interpersonal processes that can cause individuals to change their thoughts, feelings, or behaviours	Connection, shared experience, unconditional acceptance, accountability
Knowledge	An awareness of the existence of something	Length of session, structure of class
Social/professional role and Identity	A coherent set of behaviours and displayed personal qualities of an individual in a social or work setting	N/A
Beliefs about capabilities	Acceptance of the truth, reality or validity about an ability, talent or facility that a person can put to constructive use	Confidence, ability to succeed with support, improvements
Optimism	The confidence that things will happen for the best or that desired goals will be attained	Hope
Beliefs about Consequences	Acceptance of the truth, reality, or validity about outcomes of a behaviour in a given situation	Couldn't fail, OK to make mistakes
Reinforcement	Increasing the probability of a response by arranging a dependent relationship, or contingency, between the response and a given stimulus	Just keep this going
Intentions	A conscious decision to perform a behaviour or a resolve to act in a certain way	N/A
Goals	Mental representations of outcomes or end states that an individual wants to achieve	N/A
Memory, attention and decision processes	The ability to retain information, focus selectively on aspects of the environment and choose between two or more alternatives	N/A
Behavioural regulation	Anything aimed at managing or changing objectively observed or measured actions	Self regulation, discipline, boundaries



FINDINGS

Participant Demographics (n=21)		
Age	Mean(SD)	53.33 (21.46)
Group	Exercise	12(57.1%)
	Yoga	9 (42.9%)
Sex	Female	12 (57.1%)
Education Level	High School	4 (19%)
	> high school	17 (81%)
Race	White	21(100%)
Years since Injury	Mean(SD)	10.00 (13.99)

4 PRIMARY FACILITATORS: *ENVIRONMENT, SKILL, EMOTION & SOCIAL INFLUENCE*

1 PRIMARY BARRIER: *ENVIRONMENT*

Domain	Quote
Environment	Barrier: <i>“The first few classes were really confusing how we get in. There were multiple entrances there when you’re a stroke victim like I am, I get disoriented pretty easily.”</i>
	Facilitator: <i>“...the consistency ...having it on specific days at specific times. That helped me keep a routine. It was super helpful”</i>
Skill	<i>“...it was nice to feel like you were participating and completing that task but at the level you're safe and comfortable”.</i>
Emotion	<i>“Before I would feel I’d be getting judged by people...here, I can actually open up and talk, and people just listen”</i>
Social Influence	<i>“the difference with this group is we've all bonded through the shared experience”.</i>

MAPPING FROM BARRIERS TO IMPLEMENTATION STRATEGIES

Barrier/Facilitator Exemplary Quote	TDF Domains	ERIC Implementation Strategy & Definition
<p>Barrier: “It would be easier if there was just one person helping me the whole time, the same person texting me. They changed by several people, and that was really hard. It was like who am I talking to? And why? Where am I going? What time? Wait, you told me I didn't have to fast but that person told me I had to fast but I didn't fast. I mean, it was very confusing” (Sheryl)</p>	<p>Environment: Any circumstance of a person's situation or environment that discourages or encourages the development of skills and abilities, independence, social competence and adaptive behavior</p>	<p>Develop Education Training Materials: “Develop and format manuals, toolkits, and other supporting materials in ways that make it easier for stakeholders to learn about the innovation and for clinicians to learn how to deliver the clinical innovation.”</p>
<p>Facilitator:” “When I couldn't get up, they would help you.” (Jim)</p>	<p>Skills: An ability or proficiency acquired through practice</p>	<p>Use train-the-trainer strategies: “Train designated clinicians or organizations to train others in the clinical Innovation”</p>

ERIC IMPLEMENTATION STRATEGIES

Implementation Strategy	Definition	Our Action
Use train-the-trainer strategies	Train designated clinicians or organizations to train others in the clinical innovation.	Adequate personnel to provide physical support and guide modifications
Make training dynamic	Vary the information delivery methods to cater to different learning styles work contexts, and shape the training in the innovation to be interactive.	Adequate personnel to provide physical support and guide modifications
Conduct educational meetings: what to expect	Hold meetings targeted toward different stakeholder groups (e.g., providers, administrators, other organizational stakeholders, and community, patient/consumer, and family stakeholders) to teach them about the clinical innovation.	Foster camaraderie and group dynamics/shared experience
		Trained support staff to facilitate modifications
Promote Adaptability	Identify the ways a clinical innovation can be tailored to meet local needs and clarify which elements of the innovation must be maintained to preserve fidelity.	Adequate personnel to provide physical support and guide modifications
		Modifications/group dynamic
Intervene with consumers to enhance uptake and adherence	Develop strategies with patients to encourage and problem solve around adherence.	Group size (8-10)
		Consistent schedule/routine
Conduct Local Needs Assessment	Collect and analyze data related to the need for the innovation.	Community need of shared experience/connection

CONCLUSION & NEXT STEPS

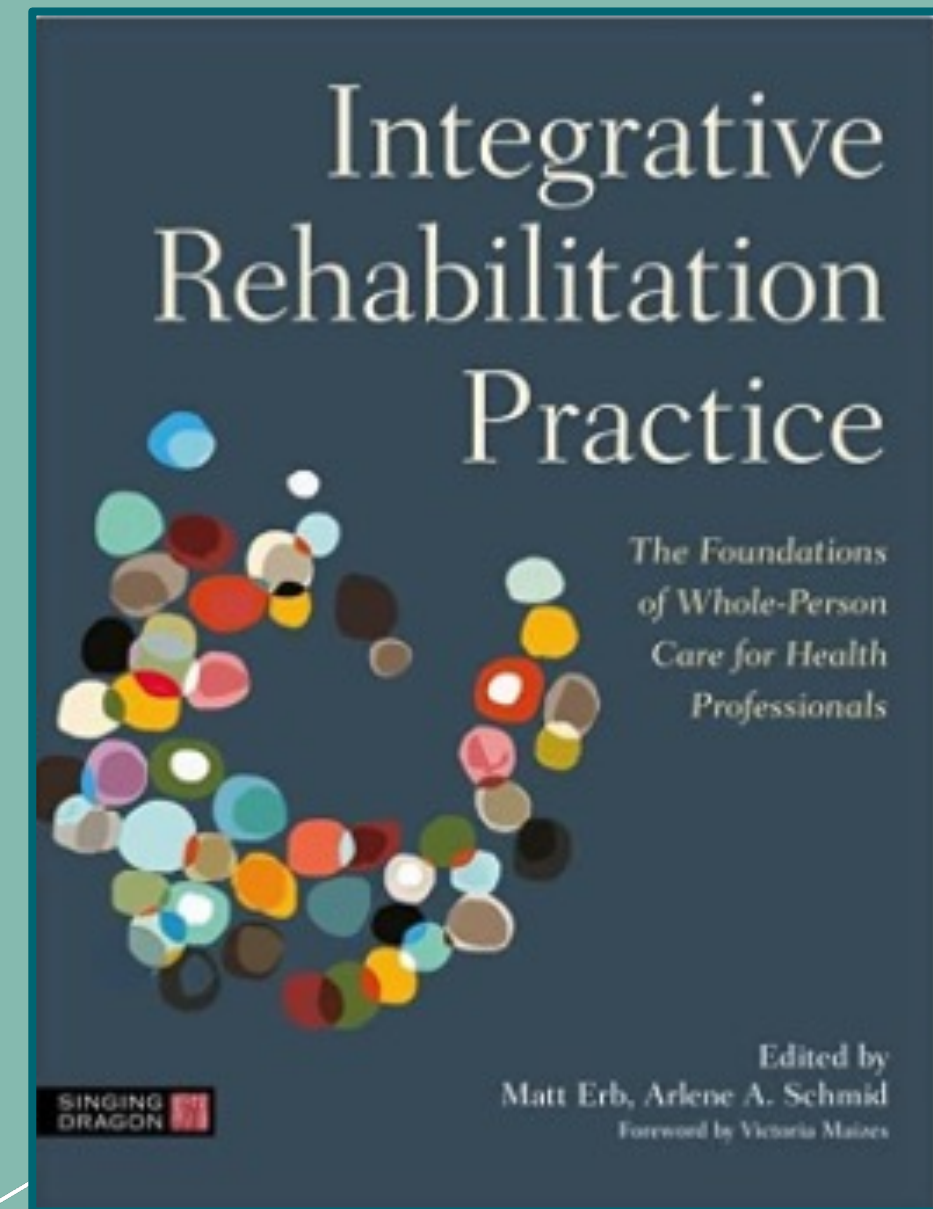
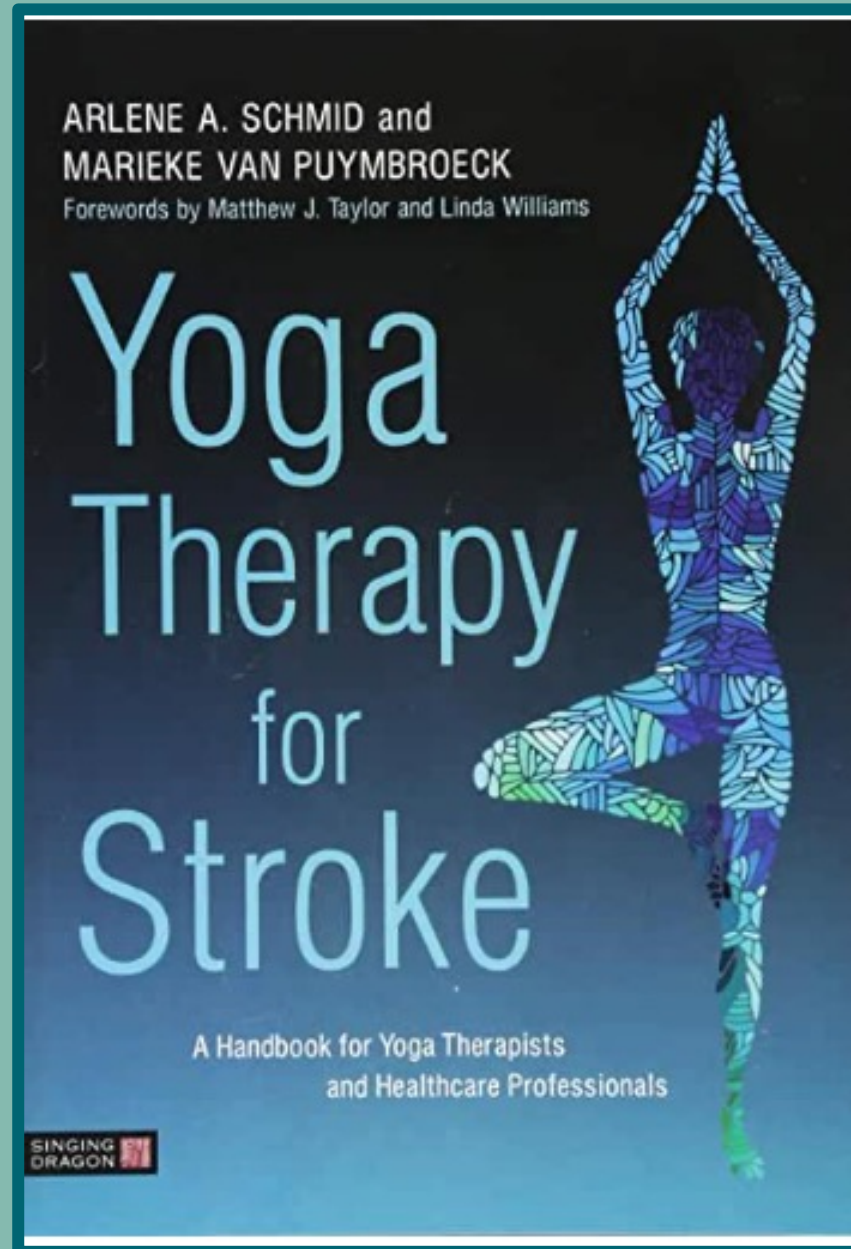
- Clear directions and multimodal communication are essential for brain injury survivors navigating new environments
- Survivors of ABI maintain engagement in group programs when:
 - They are surrounded by individuals with shared experiences
 - Modifications and adaptations are the norm
 - Physical support is readily available
- Trial implementation strategies in community-based programs include:
 - Monitor attendance & retention
 - Collect feedback during & following intervention



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**THANK YOU!
QUESTIONS?**

ARLENE.SCHMID@COLOSTATE.EDU



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