



Dancing through recovery: Adaptation of the Graded Repetitive Arm Supplementary Program (GRASP) into a danced version for stroke rehabilitation

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Funding disclosure













Dance for stroke rehabilitation

Dance combines:

- ✓ Movement & balance
- ✓ Rhythm & music
- ✓ Cognitive engagement
- ✓ Social interaction



Image source: Chat GPT 5.0

Harness brain plasticity after stroke

Repetitive practice

Engagement

Training
specificity

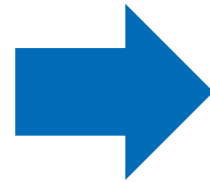
High intensity



Meaningful
activities

Objectives

To **adapt** a widely used, evidence-based home program, the Graded Repetitive Arm Supplementary Program (**GRASP**), into a **danced version** for community-dwelling stroke survivors.

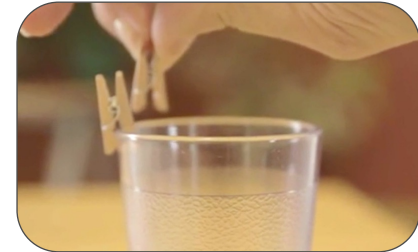


GRASP DANCE



GRASP

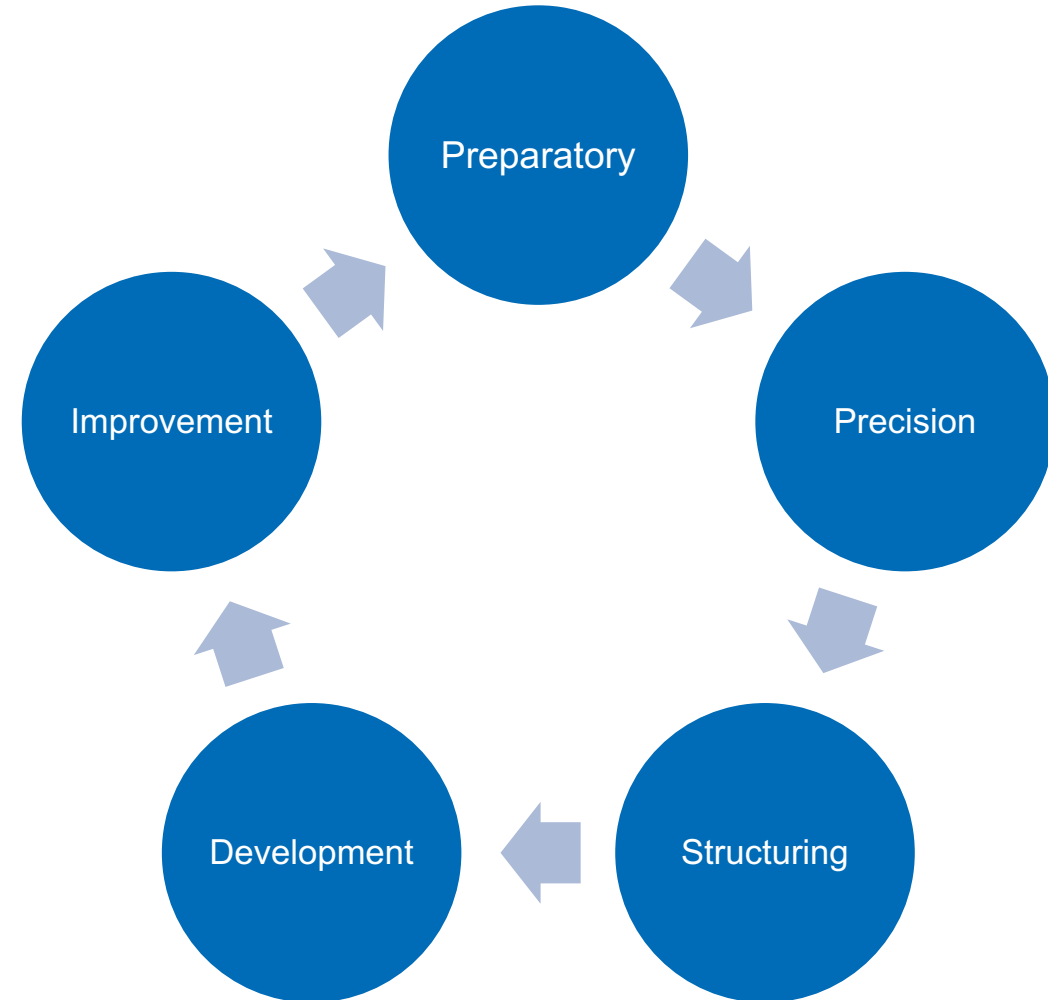
- Evidence-based self-directed program
- Based on intensive, repetitive and task-oriented practice
- 35 exercises divided into 5 sections:
 1. Stretching
 2. Arm strengthening
 3. Hand strengthening
 4. Coordination
 5. Hand skills
- 60 min/day, 7 days/week + weekly follow-up



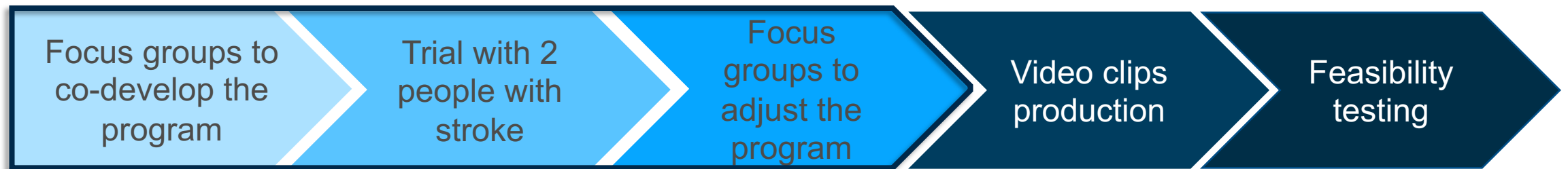
Source: GRASP manual

Participatory research approach

- Co-development and co-design of the GRASP-dance in 5 phases
- Meaningful collaboration between researchers, occupational therapists and people with lived experience of stroke



Adaptation of the GRASP in a dance-based version



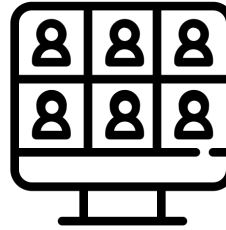
Results

GRASPDANCE



Video clips
Self-directed practice
6 x 1h/week

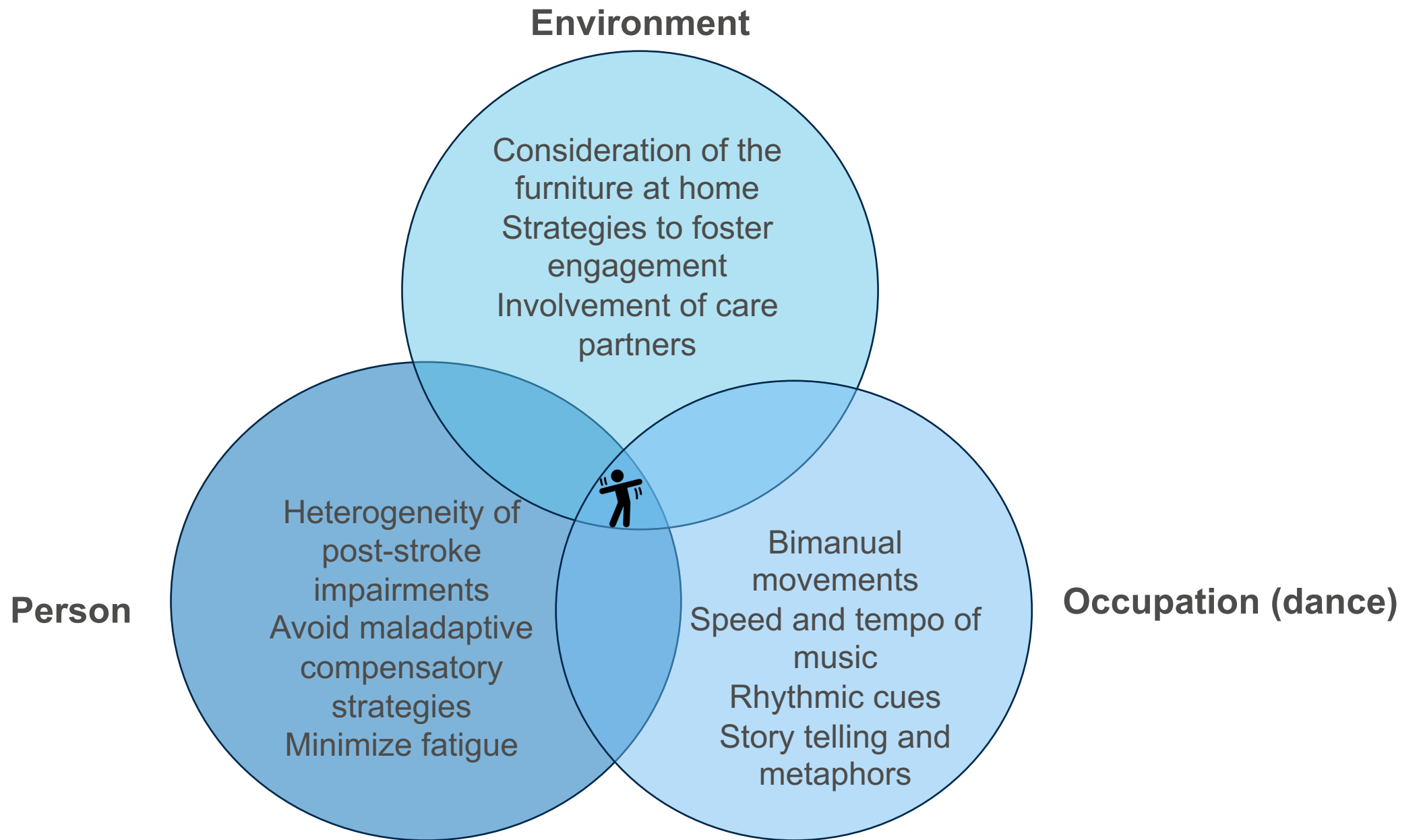
- Personalized program on a tablet



Virtual group meeting
1h/week

- Set-up goals
- Adjust the difficulty level
- Perform a few dance routines

47 video clips
3 levels of difficulty
2 versions of each routine
Original music compositions



Key components of the GRASP maintained in the dance adaptation

Structure

1h/day, 6 days/week
1 monitoring session/week

Sections

1. Stretching
2. Arm strengthening
3. Hand strengthening
4. Coordination
5. Hand skills

Difficulty levels

Level 1: 3 sets of 5 repetitions
Level 2: 3 sets of 8 repetitions
Level 3: 3 sets of 10 repetitions

Main exercises components

1. Range of motion
2. Strengthening
3. Repetitions with more-affected arm
4. Weight-bearing
5. Trunk control
6. Repetitions using both arms

Dance additions

- **Music**
- **Metaphors** and storytelling
- **Engagement** strategies
- Continuous **movement flow** in sync with music



Example of adaptations

GRASP exercises

Hand strengthening section

- Finger power (#14)
- Finger strength (#16)
- Cutting (#17)



GRASP DANSE

Pluck the bass string
Press the clarinet keys
Bow the violin



Metaphor: Musical instruments



Music: Acoustic, slow, with cues from the instrument



Conclusion

- Program fidelity, while promoting innovation
- Considerations for self-directed practice
- Co-development approach → Essential for a safe and appropriate program for people with stroke

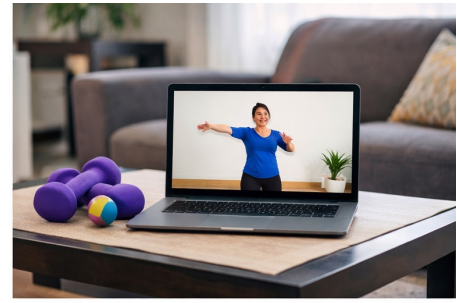


Image source: Chat GPT 5.0

Questions?

Funding:

réa



UQÀM



Participating sites:

Centre intégré universitaire de santé et de services sociaux du Centre-Sud-de-l'Île-de-Montréal

Québec 

Centre intégré de santé et de services sociaux de Laval

Québec 



Des gens de cœur pour des êtres de courage



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