

INTRODUCTION

In Singapore, the prevalence of older adults with pre-frailty is increasing with the rapidly ageing population. As frailty is potentially reversible in its early stages, it is important to introduce effective management programmes to prevent deterioration while at the pre-frail state.

Adapted from Dance to Health (United Kingdom) (Vella-Burrows et al., 2021), a 12-week modified dance program led by a community dancer was co-developed with key stakeholders (i.e. older adults, therapists, and dancers) to support older adults with pre-frailty, aiming to improve physical functions and increase social participation.

Objectives

This study aimed to:

- Determine the feasibility of a community dance programme for pre-frail older adults.
- Determine if outcome measures used are relevant and sensitive for pre-frail older adults.
- Explore the benefits of a community dance programme for health and well-being in pre-frail older adults.
- Explore participants' experiences, both positive and negative, during the programme.

METHODS

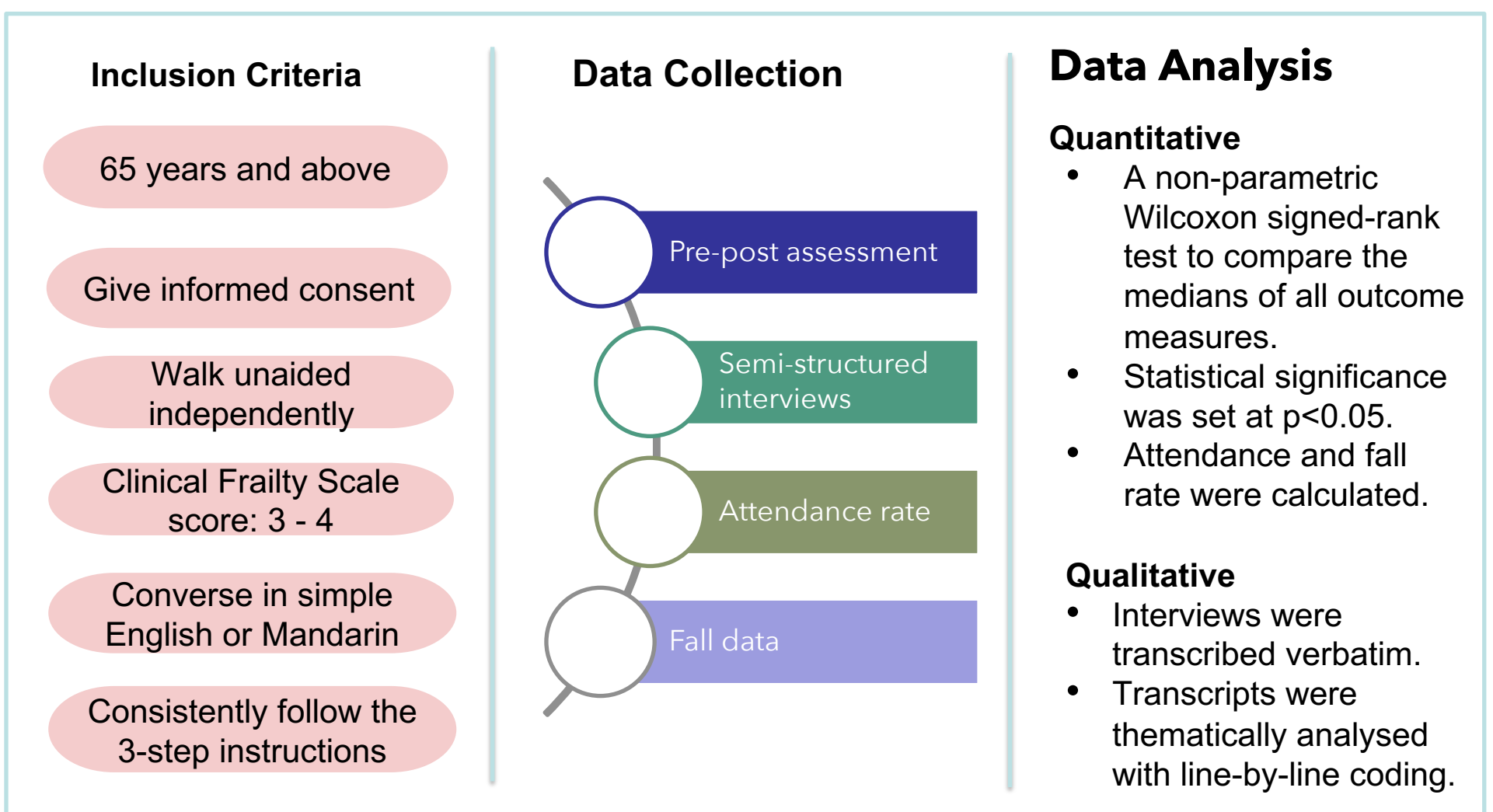
Research Design

- Mixed-method approach with one-group pre-post test design

Dance Up Programme

- A 12 one-hour weekly group sessions.

Sessions 1-2	Balance exercise: Find the centre of gravity Floorwork: Get comfortable on the ground Walking with confidence Creative dance: "Morning Tea" movement
Sessions 3-4	Balance exercise: Weight shifting Floorwork: Get comfortable on the ground Walking with confidence Creative dance: "Ramen" movement
Sessions 5-6	Balance exercise: Leg swing Floorwork: stretching & chair-to-floor transfer Walk with confidence Creative dance: "Afternoon Nap" movement
Sessions 7-8	Balance exercise: Fast weight shifting, tandem walk Floorwork: weight shifting on the floor, chair-to-floor transfer Walk with confidence Creative dance: "Dragonfly" movement
Sessions 9-10	Balance exercise: full set Floorwork: full set & chair-to-floor transfer Walk with confidence Creative dance: "Night Crawlers" movement
Sessions 11-12	Balance exercise: full set Floorwork: full set & chair-to-floor transfer Walk with confidence Creative dance: "mid-night sun" movement



RESULTS

A total of **20** older adults were referred to the study, and **13** participants met the inclusion criteria. Only **9** participants completed all 12 sessions.

As shown in Table 1, the majority were female Chinese. Two-thirds of the participants scored a CFS of 3, and one-third scored a CFS of 4.

About half of them are living with family members or helpers. Zero falls were reported in the past 6 months upon enrollment.

Quantitative Results

Fall rate:

- 0% during the study period.

Attendance rate:

Mean attendance rate was 83.3%.

Table 1: Participants' demographics (n=9)

Variable	
Age, mean (SD)	78.7 (5.15)
Gender	
Male, <i>n</i> (%)	1 (11.1)
Female, <i>n</i> (%)	8 (88.9)
Ethnic Group	
Chinese, <i>n</i> (%)	7 (77.8)
Indian, <i>n</i> (%)	2 (22.2)
Abbreviated Mental Test ≥8, <i>n</i> (%)	9 (100)
Clinical Frailty Scale	
3, <i>n</i> (%)	6 (66.7)
4, <i>n</i> (%)	3 (33.3)
Able to walk independently	
>10m, <i>n</i> (%)	1 (11.1)
>100m, <i>n</i> (%)	8 (88.9)
Living arrangement	
Alone, <i>n</i> (%)	4 (44.4)
With family member/helper, <i>n</i> (%)	5 (55.6)
Fall history in past 6 months	
0, <i>n</i> (%)	9 (100)



Pre-post assessment findings:

As shown in Table 2, only the Dynamic Gait Index (DGI) and Goal Attainment Scale had a significant improvement ($p < 0.05$).

- DGI: increased ability to modify balance in response to the external environment while walking.
- GAS: Personal life goals set at the start of the programme were achieved.

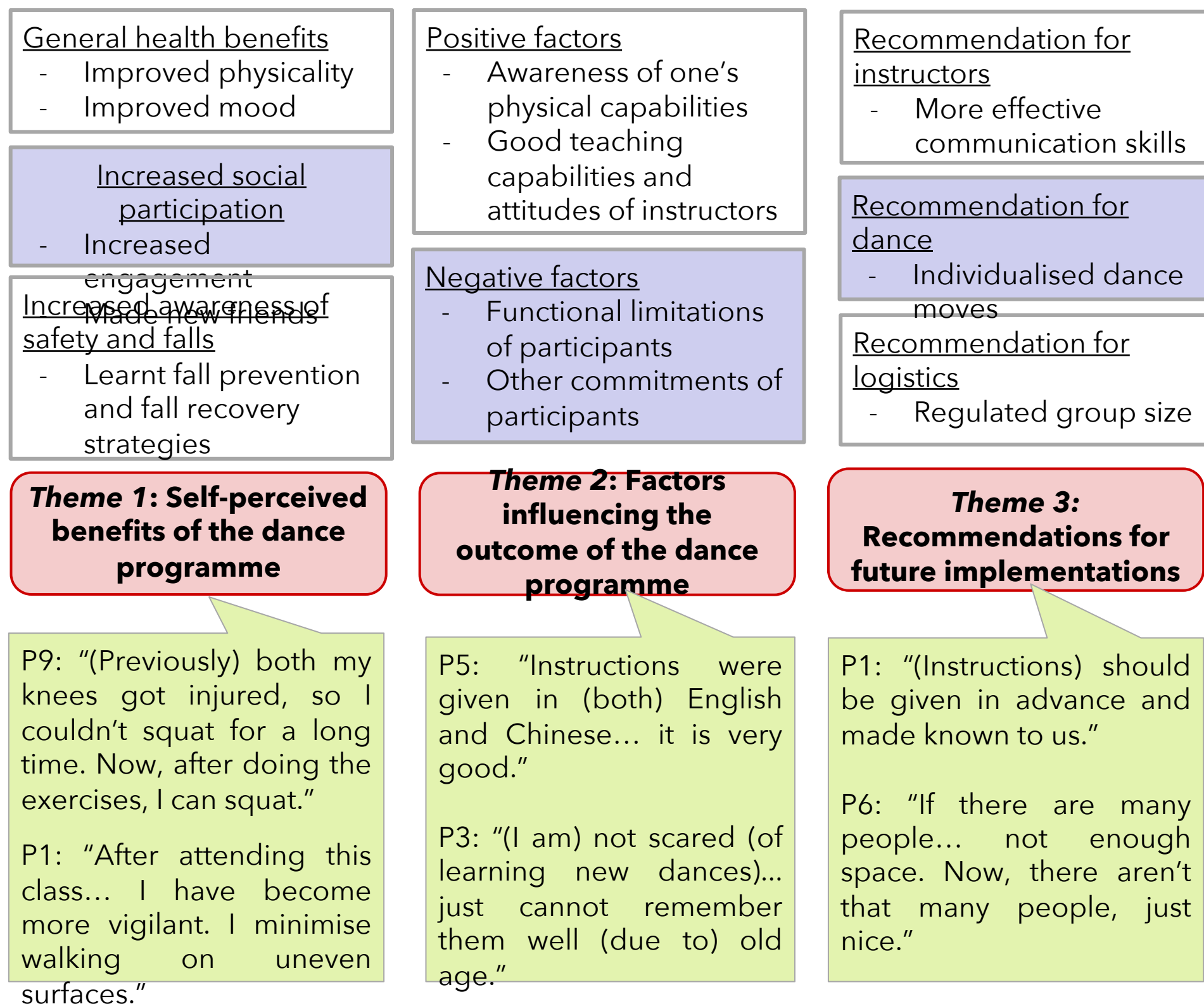
Table 2: Participants' status at baseline and post-intervention assessment, mean (SD)

Dance up Participants, <i>n</i> = 9	Baseline	Post-intervention	Significance
Clinical Frailty Scale (CFS)	3.33 (0.5)	3.33 (0.5)	1.00
Right Grip Strength	19.76 (8.83)	19.17 (8.18)	0.286
Left Grip Strength	19.78 (6.38)	18.70 (4.43)	0.767
Falls Efficacy Scale - International (FES-I)	30.67 (4.80)	30.89 (10.78)	0.906
Short Physical Performance Battery (SPPB)	10.33 (2.24)	10.33 (2.18)	0.915
Dynamic Gait Index (DGI)	19.56 (3.32)	22.67 (1.887)	0.028 *
Four Square Step Test (FSST)	15.09 (4.95)	16.30 (3.65)	0.441
Sitting-Rising Test (SRT)	2.11 (3.02)	0.89 (2.67)	0.197
Visual Analog Scale (VAS)	2.44 (2.96)	1.56 (2.60)	0.414
EQ-5D-5L (Health Score)	81.67 (14.79)	83.33 (9.01)	0.750
Goal Attainment Scale (GAS)	38.13 (0.83)	46.22 (4.33)	0.012 *

Qualitative findings

All 9 participants were interviewed, with each interview lasting 15 to 30 minutes. Thematic analysis revealed three overarching themes (see Figure 1).

Figure 1: Three major themes and sub-themes from thematic analysis



DISCUSSION

- Attendance rate and interview findings suggest its feasibility and acceptability.
- Factors affecting program outcomes include the selection of participants, Intrinsic motivators, competency of dance instructors, and more sensitive assessment tools.

Recommendations

- Include older adults with CFS 3-5 and interest in dancing
- Dance instructors should undergo training in effective group facilitation (Xu et al., 2025).
- Prescription of homework
- The use of Life-space assessment

Limitations

- Small sample size is not representative of the local community-dwelling older adult population
- Non-sensitive assessment tools for this group (e.g., FES-I, FSST, SRT, SPPB)

CONCLUSION

The Dance-up programme was well received by participants, but requires fine-tuning, and other assessment tools should be explored in future studies.



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Key References

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