A community-based intervention for young people with disability increases physical activity participation: a stepped wedge cluster randomised trial

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Background

Increasing the participation in physical activity of young people with disability is important

- Most do not meet physical activity guidelines
- At risk of developing secondary health conditions
- Missing opportunity for social connections

Exercise interventions are usually implemented in clinical or segregated setting

- Expensive as a high degree of specialist supervision
- Preference for community settings
- Community ‘invisibility’ makes inclusion harder

FitSkills

- A model of exercise for young people with disability that overcomes environmental barriers to participation
- Match a young person with disability with a student mentor
- Pair exercise together at their local gym
- 12-week program, 2 sessions a week (24 sessions total)
- Individualised
- Moderate to high intensity exercise

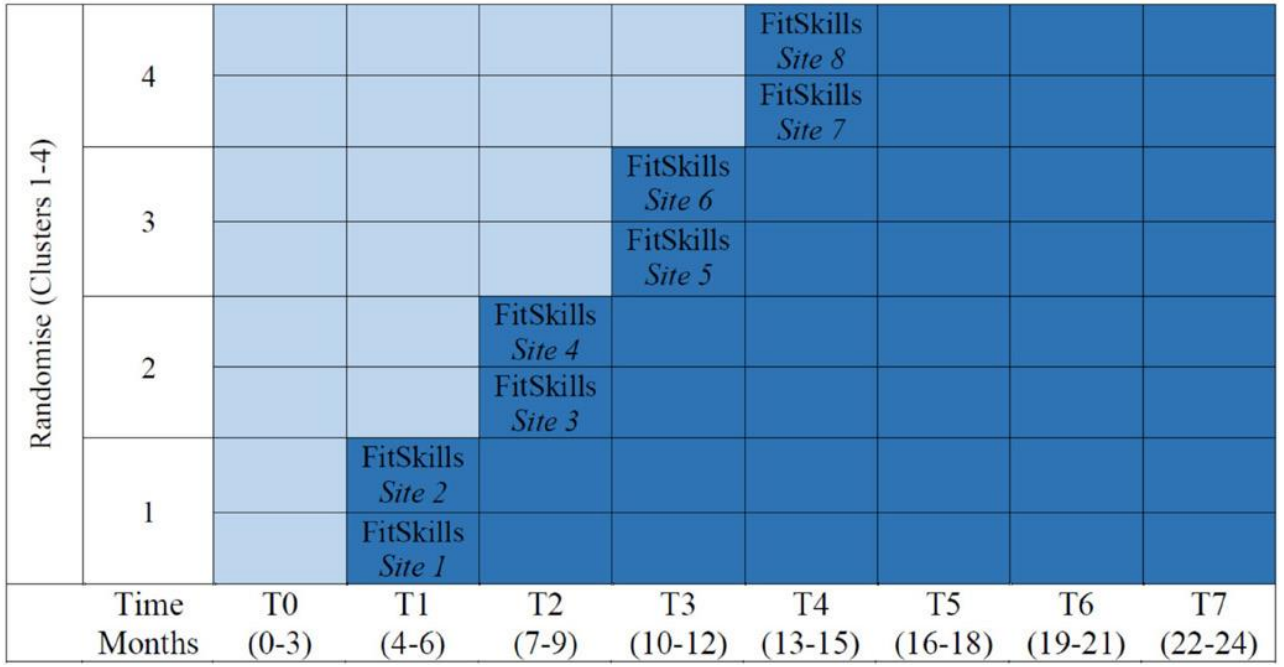
Shields, N et al. Disabil Rehabil. 2019;41(10):1152-9.

Aim

To determine the **efficacy** of *FitSkills* in improving exercise participation compared to usual activities for young people with disability

Study design

- Stepped wedge cluster randomised trial
- 163 young people with disability to train at 11 trial sites (gyms)
  - Each **site** represents a **cluster unit**.
  - Four groups, each containing 2 or 3 **randomly allocated** cluster units.



Participants

- **Inclusion criteria**
  - Aged 13 to 30 years and identify as having a disability
  - Ability to follow simple verbal instructions in English
  - Able to take part in moderate to high intensity exercise
- **Exclusion criteria**
  - Medical condition rendering them unfit to take part
  - Participation in a high-intensity exercise program within 3 months prior to the trial
  - Significant psychological or behavioural challenges that would impact their participation

Outcomes measuring participation

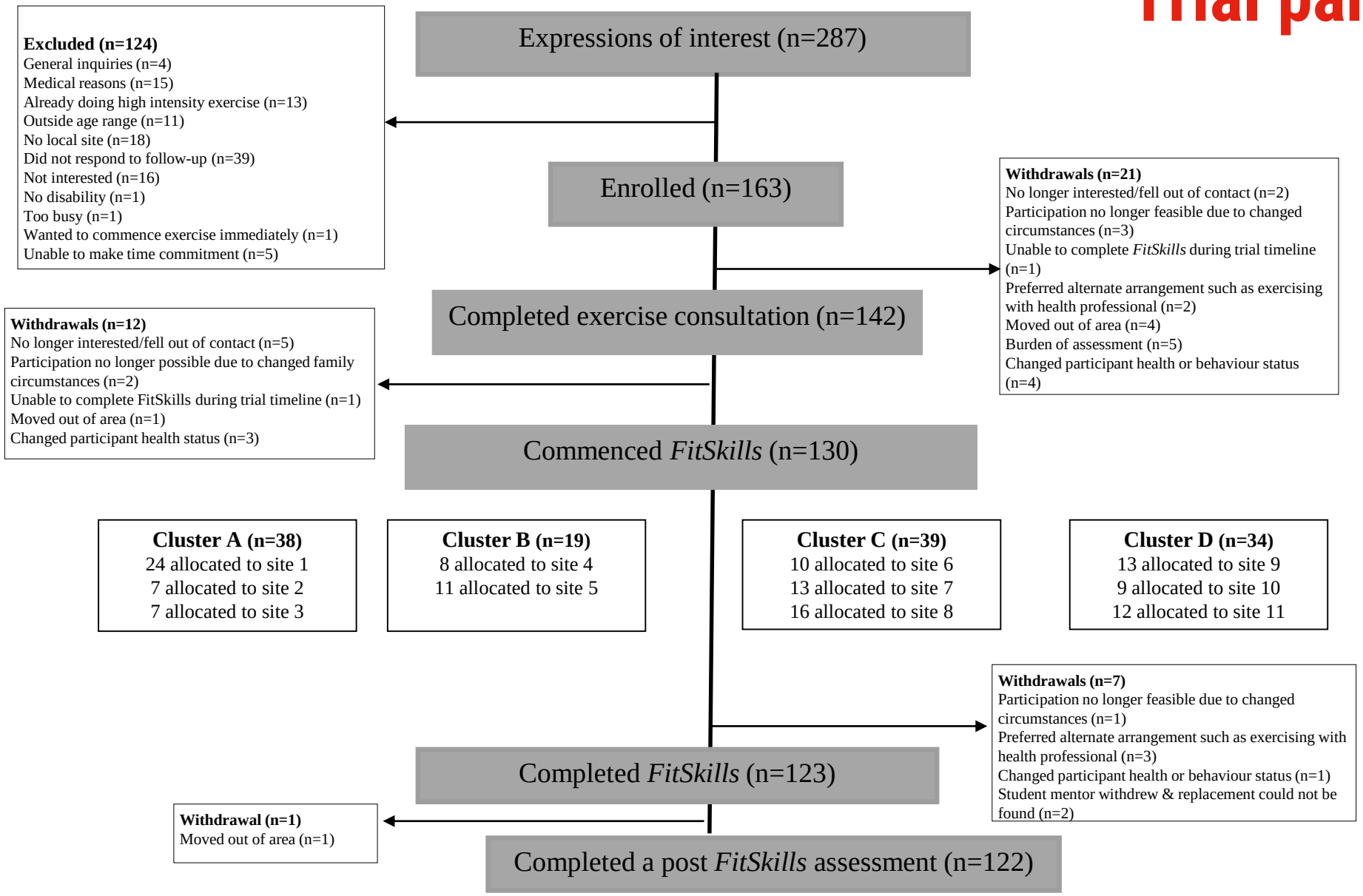
Domain	Measure	What	Scored
Attendance	Physical Activity Recall	Formal activities Informal activities	No of activities Duration
	Sedentary Activity	11 sedentary behaviours	Duration
	CAPE	16 physical activity items	No of activities Frequency
	PEM-CY	10 community items	Frequency
Involvement	PEM-CY	10 community items	Involvement Desire for change
Preference	PAC	16 physical activity items	Preference

Bowen DJ, Kreuter M, Spring B, et al. How we design feasibility studies. *Am J Prev Med* 2009;36:452-57.

Data analysis

- Intention to treat analysis
- Self-report and proxy-report data were combined
- Data were analysed using linear mixed effects models and generalized estimating equations
- Analyses were adjusted for baseline data (e.g. age and gender)
- Non-normally distributed outcomes were log-transformation and estimates reported as percentage change
- Outliers - a robust version of a linear mixed-effects model was used
- Sensitivity analysis for missing data

Trial participants



Results – Participant demographic data

	N (%)
Sex (female)	61 (37)
Primary diagnosis	
Cerebral palsy	59 (36)
Down syndrome	40 (25)
Autism	30 (18)
Other (e.g. ID, ABI, VI)	34 (20)
Difficulty with communication	78 (48)
Behavioural challenges	39 (24)
Required support with mobility support	46 (28)

Mean age 19 years 3 months (SD 4y 10mo)

Mean number of co-occurring conditions 1.1 (SD 1.0)

Overall results

Domain	Scored	Measure	Results
Attendance	Duration	Physical Activity Recall	✓
		Sedentary Activity	✓
	Frequency	CAPE	✓
		PEM-CY	✓
	No of activities	Physical Activity Recall	No change
		CAPE	No change
Involvement	Involvement	PEM-CY	No change
	Desire to change	PEM-CY	✓ ?
Preference		PAC	

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Implications

- Context of international physical activity guidelines (Bull et al 2020)
  - some physical activity is better than none
  - more physical activity is better
  - reducing sedentary behaviours is recommended

- Strengths and limitations
  - A large longitudinal pragmatic trial in a community setting testing a model of exercise addressing the wants of young people with disability
  - Self-reported outcomes with participants who could not be blinded

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FitSkills Steering committee members

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