
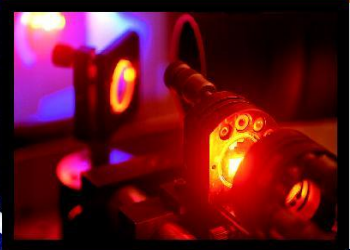




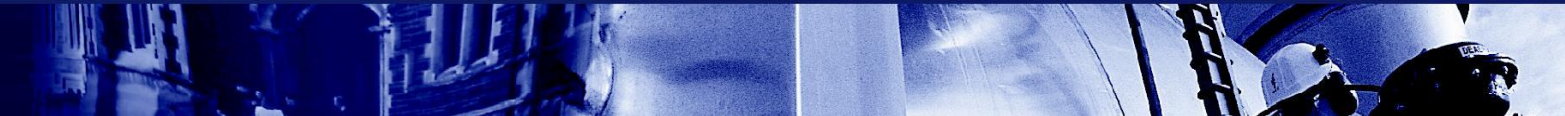
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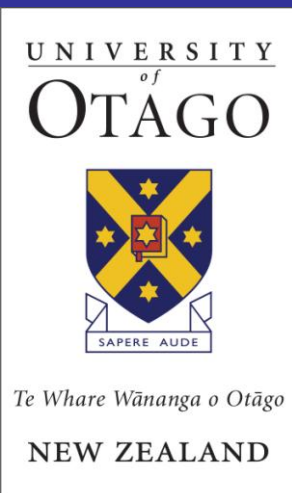


Otago



Preventing falls the
physical way
or

“just like brushing your teeth”



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Falling is a major problem

Thank you to all involved in our previous studies

- About 30% of people with intellectual disability experience falls
- Many will have multiple falls
- In the DBI survey in 2002, 45% of major injuries were from falling
- Injuries frequently to the face and head

Pilot study

- 2 providers in the South Island, 1 in the North Island
- Collected information of potential fall risk factors and counted falls over a 3 month and a 6 month period.

Pilot study

- Consent – 135 adults with ID
- Male = 70 Female = 65
- Age range = mean: 42 years; 22 - 71 years
- Majority (84%) – residential home-living
- 36% – previous history of falls
- 48 = fallers (36%)
- 87 = non=fallers (64%)

	Fallers (n=48)	Non-fallers (n=87)
Epilepsy	21 (44% of 48)	22 (31% of 87)
Medical condition	14 (29%)	26 (36%)
Orthopaedic condition	16 (33%)	10 (14%)
Visual disorder	18 (38%)	20 (28%)
Mood disorder	25 (52%)	41 (57%)
Communication problems	25 (52%)	49 (68%)
Hearing problems	11 (23%)	2 (3%)
Behavioural problems	29 (60%)	45 (63%)
Balance problems	19 (40%)	13 (18%)
Physical problems	10 (21%)	11 (15%)
Walking problems	25 (52%)	1 (4%)
Incontinence	12 (25%)	11 (15%)
Weight issues	8 (17%)	13 (18%)

Possible risk factors for falling

- Complex and multi-factorial
- Common factors for fallers appear to be
 - coexisting medical problems
 - medications
 - environmental factors
 - movement impulsiveness
 - distractibility
 - visual deficits
 - gait disturbances
 - poor balance
 - orthopaedic problems
 - hearing problems

Possible risk factors for falling

- Complex and multi-factorial
- Common factors for fallers appear to be
 - coexisting medical problems, especially epilepsy
 - medications
 - environmental factors
 - movement impulsiveness
 - distractibility
 - visual deficits
 - gait disturbances
 - poor balance
 - orthopaedic problems
 - hearing problems

Fall prevention – the physical way



Prevention of Falls in Elderhood

Large systematic reviews support the use of exercises interventions to reduce falls and fall risk

(Sowen et al, 1996; Gillespie et al, 2009)

Balancing, low impact aerobic and muscle strengthening exercises

So how can this be achieved?

PHYSICAL ACTIVITY

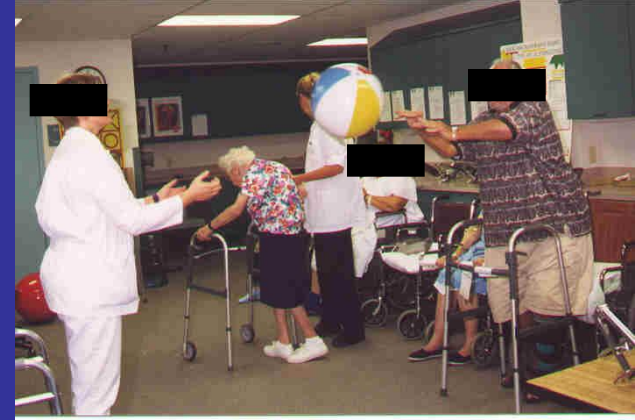
Physical activity that challenges:

- Lower limb muscle strength
- Lower limb flexibility
- Balance reactions and strategies
- Cardiovascular fitness
- Cognitive function

School of Physiotherapy

- School based “clinic”
- Home visits
- Day services

School & home based clinic



- 3 x week for 6 weeks
- 3rd year Physiotherapy students and a clinical supervisor
- Transport provided to School clinic
- Home visits
- Problems were encountered



Participants

- 14 participants (9 male, 5 female)
- Average age = 60.9 years (range: 25-80 years).
- 2 = regular seizures
- 5 = vision related problems
- 3 = poor hearing
- 1 = excluded from further intervention after 4 sessions due to behavioural problems during treatment and unsafe behaviour when travelling to and from the treatment sessions. Decision made by all concerned.

Subjective Outcomes

- 5 = more confident in daily activities, more involved in tasks and their ability to walk appeared to be less unstable.
- 1 = “had begun holding my hand less”
- 1 = more active around the home and wanted to walk more to the park.
- No reported worsening of balance related concerns

Name of test	Number of attempts	Completed	Completed modified
Berg Balance	22	3	18
10m Timed Walk Test	14	12	2
Timed Up and Go	21	11	6
Sit To Stand	15	5	10
Functional Reach	16	3	10
Modified Ashworth Scale	4	4	0
Manual Muscle Testing	5	4	0
Rhomberg Balance	11	0	11

Treatment Intervention	Modification used	Outcome of Modification
Balance Exercises e.g. single leg standing	Demonstrated the task Assisted getting the participant into the position. Held a competition with other participants	Could lose focus on the specific task e.g. laughing at tester and stop doing task
Walking aids	Walking aids used e.g. stick. Education on use with simple cues.	Patient more stable and able to complete task.
Balance reaching outside of Base of Support exercises	Pointing to pictures of celebrities Attaching leaves to a model tree Turned into a game.	Visual goals assisted maintaining interest in the task.
Stair Climbing	Incentives placed at top of stair case and participant instructed to collect the item. Colourful stickers placed on steps.	Goal orientated instruction increased motivation.
Dance	Music Group activity dance games such as “Congo lines”.	Familiarity and enjoyment encouraged interested in the task.
Obstacle courses	Course demonstrated to participants.	Participants able to see what was required

Day services

- 3 day services trialed
- Day service 1:
 - participants worked best individually
 - required the use of many innovative ideas to gain participation, e.g. tenoquoits and sit to stand exercise
 - easily distracted and lost interest
 - coercion?
- Day services 2 and 3:
 - successful engagement in classes
 - many modifications required to cater for different levels of intellectual and physical capabilities
 - really enjoyed
 - students help +++
 - outcomes? – observed better mobility and sit-to-stand

Student educational objectives


- Broaden the scope of physiotherapy practice
- Develop students' ability to problem solve, clinically reason & critically reflect by applying previously acquired knowledge to this new & challenging area of practice
- Enhance all aspects of students' communication skills
- Introduce students to clinical research by integrating theory, practice and research.

Student outcomes

- **Clinic and home based service** (questionnaire):
 - Significantly improved
 - Confidence levels & anxiety
 - Knowledge of intellectual disability
 - Communication
 - Clinical skills
 - No significant improvements
 - Future willingness
 - Attitude
 - Clinical reasoning skills
- **Classes at day service** (anecdotal)
 - So far so good
 - Scared stiff at first
 - “We actually enjoyed it”
 - “I hope I get on the ID placement!”

Student outcomes

Communication was identified as the main learning expectation and identified as challenging



“Had to think about how to communicate... get patients to do and understand tasks”

Way forwards

- Trying to think of ways to deliver our service for optimal benefit with least impact on staff
- Reach many people
- We know that developing trusting relationships takes time
- Acknowledge that physiotherapy appointments can be expensive



Just like brushing your teeth

- ↓ PA – inactivity
 - increasing load on staff
 - may result in transition to rest home
 - ↓ health
- Important to keep the person mobile and safe – effort invested now – saves later
- Routine PA – just do it – like brushing teeth

An Idea

- Workshop for staff – importance of PA
- PT assessment
- Individualized programme developed from a “tool box” of ideas - 1 or 2 key things – but things that the person would like to do and ideas of how to get it done within day-to-day living
- Taught 2-3 times by PT to individual and support worker/family/whanua
- PT supports the individual and their support worker/family/whanua
- Supports by using txt or phone or e-mail or
- Re evaluation 6 months later (earlier if needs be)

Ideas from the floor



Thank you