Exploring the Use of Tablet Technology in Older Adults Living in Residential Care

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Introduction

• Rapidly ageing population
• Residential aged care
Mental Health Issues

On one hand....
- Depression
- Anxiety
- Dementia
- Caring
- Grief and loss
- Social isolation

On the other....
- Increased access to healthcare and information
- Better off financially
- Social/family advocates
- Internet and social media
The Role of Technology

- Internet, mobiles/smart phones, tablets, gaming technologies
- Smart homes
- Tracking devices
- Monitoring health
- Assistive technology
2010 Engineering report
National Broadband Network
What do Older Australians Want?

- Live independently
- Limitations:
  - Mobility
  - Disability
  - Social isolation
  - Difficulty accessing services
  - Social support
Three Projects

- NWAMH and St Vincent’s
- Using touchscreen tablets (TTs)
- Challenging behaviours
- Social connectedness
- Self-esteem
- Staff empowerment
Project 1: TT in a Training Program

- Low level facility
- Specialised in supporting older adults with psychiatric disorders

- Improving self-esteem and connectedness
  - Rosenberg Self-esteem scale
  - Hawthorne Friendship scale
  - Internet questionnaire
TT Used in a Training Program 2

- 6 sessions twice weekly, 45 minutes
- Facilitated
- 5 participants
Topics

- Week 1 - basic introduction to iPad
- Week 2 – practicing concepts from Week 1
- Week 3 – email
- Week 4 – consolidation of previous concepts
- Week 5 – use of search engines to look up topics of interest
- Week 6 - presentations
**TT Used in a Training Program: Results**

- 5 participants with a variety of MI
- Mean age 69.9yo

<table>
<thead>
<tr>
<th></th>
<th>Mean (SD)</th>
<th>T score</th>
<th>Significance (2-tailed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre Rosenberg</td>
<td>21.2 (1.48)</td>
<td>1.464</td>
<td>0.217</td>
</tr>
<tr>
<td>Post Rosenberg</td>
<td>18.2 (3.56)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre Hawthorn</td>
<td>2.2 (1.48)</td>
<td>-2.434</td>
<td>0.072</td>
</tr>
<tr>
<td>Post Hawthorn</td>
<td>6.2 (3.35)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre internet/TT</td>
<td>44.2 (11.3)</td>
<td>-1.696</td>
<td>0.165</td>
</tr>
<tr>
<td>Post internet/TT</td>
<td>48.8 (5.72)</td>
<td></td>
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</table>
TT Used in a Training Program:

Discussion

- Limitations
- Importance of facilitators
PROJECT 2: Using TT as a Non-Pharmacological Management for BSD

- Person-centred care
- Using “apps”
- Staff delivered
- RCT
- Participants act as their own control
- Outcome measures – NPI and PRN medications
TT as a Non-Pharmacological Management 2

- Potential “apps”
  - Games
  - Kaleidoscope, Brushes, Line Art, Drawing pad (art)
  - I love fireworks
  - iFishPond
  - Gaze HD – backgrounds
  - Let’s Create Pottery
  - You Tube
  - Augment
  - Flower Garden
## TT as a Non-Pharmacological Management

<table>
<thead>
<tr>
<th>WEEK</th>
<th>TASK</th>
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</thead>
<tbody>
<tr>
<td>Preceding 4 weeks</td>
<td>Staff training 4 X 45 min sessions</td>
</tr>
<tr>
<td>1</td>
<td>Baseline (BL) measures – NPI and PRN medications</td>
</tr>
<tr>
<td>2-4</td>
<td>Control intervention (Ax 1) – reading magazine/newspaper with participant</td>
</tr>
<tr>
<td>5</td>
<td>Ax 1 measures – NPI and PRN meds for weeks 2-4</td>
</tr>
<tr>
<td>6-8</td>
<td>TT intervention (Ax 2)</td>
</tr>
<tr>
<td>9</td>
<td>Ax 2 measures – NPI and PRN meds for weeks 6-8. Staff discussion</td>
</tr>
</tbody>
</table>
TT as Non-Pharmacological Management: Results

- 15 participants
- NPI: frequent sxs expressed by at least 9 participants at all 3 time points – Agitation, Anxiety and Irritability
### TT as Non-Pharmacological Management: Results

<table>
<thead>
<tr>
<th>NPI score</th>
<th>Mean (SD), range</th>
</tr>
</thead>
<tbody>
<tr>
<td>BL total</td>
<td>21.1 (11.3), 1-41</td>
</tr>
<tr>
<td>BL total disrupt</td>
<td>6.2 (5.2), 0-17</td>
</tr>
<tr>
<td>Ax 1 total</td>
<td>17.7 (14.9), 0-52</td>
</tr>
<tr>
<td>Ax 1 total disrupt</td>
<td>51. (4.9), 0-17</td>
</tr>
<tr>
<td>Ax 2 total</td>
<td>10.6 (7.9), 0-32</td>
</tr>
<tr>
<td>Ax 2 total disrupt</td>
<td>4.1 (3.8), 0-12</td>
</tr>
</tbody>
</table>

- **PRN medication**
TT as Non-Pharmacological Management: Discussion

- Staff discussion
- Mean age 49.7 years, range 39-60yo
Android & IOS Tablets

IOS:
- 1 x PGNH (65 days)

Android:
- 1 x PGNH (65 days)
- 1 x Low care (79 days)

- App usage
- Staff questionnaires (pre & post)

Challenges: No internet +…
Challenges

Accessibility, Security & Safety
Challenges
Set Up
Android Tablet Use

- 3 tablets, stands, charger cables
- Instruction sheet
- Table with suggested apps

- Weekly support visits
  - Problem solving
  - Modelling
  - Support

- App usage:
  - Background app tracker
  - Recording use
  - Notes
Top 10 Apps Used

**Auburn House**

1. Talking Ginger
2. 3D bowling
3. Jigsaw puzzle
4. My talking Tom
5. Nature relax music
6. Animal quiz
7. Tic tac toe
8. NR shooter
9. Pocket piano
10. Talking Ben the dog

1 23% of use, 2 44%>30 mins

**Prague House**

1. 3D bowling
2. Solitare
3. 4 pics 1 word
4. Pocket piano
5. 4 squares
6. Word search
7. Food
8. My talking Tom
9. Onet vegetable garden
10. Scratch that logo

3 54%>30 mins, 4 46%>30 mins
4 residents
2.5 hours (2.7%)
7 episodes
  - 3D bowling
  - Talking Ginger

Our residents loved it and 2 player games, because of games some residents were able to spend quality time together.
Staff Perceptions

*Pre-Questionnaire*

- 61 staff

**Proficiency in Using Tablets**

- Turn on/off: 100%
- Lock/unlock: 80%
- Use home key: 60%
- Operate touchscreen: 80%
- Open apps: 80%
- Close apps: 60%
- Charge it: 70%
Staff Perceptions

Pre-Questionnaire

Preferred Modes of Learning

- Self-directed
- Practice
- Handouts
- Step by step
- Group inservice
Staff Perceptions

Post Questionnaire

21 staff

Do you think the residents enjoyed using the tablet?

- Yes: 80%
- Unsure: 20%
- No: 0%

Overall, how beneficial was the tablet in engaging residents?

- Not beneficial: 0%
- Neither: 0%
- Beneficial: 100%
Staff Perceptions

Post Questionnaire

Would you recommend other staff use tablets with residents?

Yes: 80%
Unsure: 20%

Would you use tablets with residents now and into the future?

Yes: 100%
Unsure: 0%
No: 0%
A resident liked the cat, she had a pet can and she was so happy playing it and spent a long time doing so.

Resident has not stopped since arrival at 9am

Residents enjoying different apps each week. Bowling was popular in module Opal last week and its talking Ginger this week. They love talking Ginger.

Residents more aware of where the tablets are esp if they need charging or use them for bowling or basketball.

TT useful and beneficial for residents who don’t use English as their first language and also incorporate culture into activities.

She plays with it every opportunity and it has been helping to stop her behaviours.
Feedback

- Resident did not cope with the tap and drag motion.
- Resident enjoyed 10 pin bowling, talking Ginger and likes to trial new apps with staff.
- Residents who usually sit alone engaged with games and wanted to show what they had achieved to staff.
- Resident liked the touch pad but he said it is not for me. Later: Resident enjoyed playing 10 pin bowling for short periods of time.
- Need to limit the time for use, one resident used it for hours daily and ended up having a sore neck.
- Best activity for residents. Can see all smiles and laugh on the residents faces while using the app, Talking Ginger.
Conclusions

- Demonstrate utility and feasibility of TT
- Aged care facility “culture”
- How to intervene in ACF?
  - Staff education
  - Freely accessible
  - Matching apps
  - Costs?