**Promoting Social Engagement in People with Dementia**

R. Mark Mathews  
University of Sydney  
Eastern Australia Dementia Training Study Centre  
27 September 2007

---

**Prevalence of Dementia**

In 2005 about 200,000 cases in Australia

- Less than 0.8% of the population under 65 years of age
- About 5% of the population over 65 yrs old
- 20% of the population 80 or older
- 30% of the population 90 or older
- Incidence of 1,000 new cases per week
- Projections suggest 730,000 cases of moderate to severe dementia in Australia by 2050

---

**Assessments of Nursing Home Resident Activities**

  Direct observation of nursing home residents  
  Simple, 16-item checklist  
  Participation  
  - 64% - none  
  - 12% - eating  
  - 8% - social  
  - 5% - television  
  - 3% - radio

  Direct observation of nursing home residents  
  Computer-assisted real-time observation system  
  Activity  
  - 86.6% - none  
  - 10.1% - eating  
  - 1.4% - bathing  
  - 1.1% - dressing  
  - 0% - engaged with materials

  The Gerontologist, 31, 124-127  
  53 item checklist where each item is rated on dimensions of:  
  a) frequency, b) availability, and c) enjoyment  
  - Being outside; doing a jig-saw puzzle; being with animals or pets; having friends come to visit; having coffee with friends; going to museums; looking at photo albums; singing; gardening; participating in or watching sports; getting/sending letters; playing cards or games; stamp collecting ...

---

**Redesigning Social Environments**

- Examples of impact on resident behaviour


---

**Setting & Participants**

- Assisted Living Facility with a small Special Care Unit for 8 Residents with Dementia

  - Two Certified Nursing Assistants  
    - One on AM shift; one on PM shift  
    - Months worked: 16, 21
  - Five Older Adults with Dementia  
    - Four women, one man  
    - Age: 85-94  
    - MMSE: 4 - 18
**Observation Procedure**

- 50 min. sessions, twice each week during the morning and afternoon shifts
- Sequential time-sample procedure every 30 seconds with each participant
- Activities: Every time “engaged” was scored, the activity was noted

**Activities During Baseline**

- Conversing
- Eating
- Exercising
- Playing with a ball
- Reading
- Singing
- Walking

**Activities During the Check-In Procedure**

- Caring for plants
- Clearing dishes from table
- Conversing
- Crafts
- Dancing
- Drying dishes
- Eating
- Exercising
- Feeding & caring for the bird
- Feeding & caring for the dog
- Folding laundry
- Planting flowers
- Playing games

- continued on next slide

**Redesigning Physical Environments**

- Playing the piano
- Playing with a ball
- Polishing silverware
- Putting dishes away
- Putting laundry away
- Reading
- Setting the table
- Serving dinner
- Singing
- Sweeping the patio
- Taking out trash
- Walking
- Walking the dog
- Washing dishes

**Examples of impact on resident behaviour**


Setting & Participants

Long-term Residential Care Facility with a Special Care Unit for 40 Residents with Dementia

- Three Residents with Dementia
  - Women
  - Age: 84-90
  - MMSE: 4 – 7
  - Lived in facility for 13-34 months

Criteria for Participation

- History of difficulty locating her own room
- Availability of portrait-like photograph of resident from earlier in life
- Demonstrated ability to respond to verbal requests
- Demonstrated ability to identify herself in an array of four similar portrait-like photographs

Observation Procedure

- Observations conducted five times per week over a two-month period
- Observation started when resident room was not in direct line of sight
- Request for resident to show the observer her room
- Observer walked beside and slightly behind the resident

Environmental Design

Recommendations

Recommendations often suggest spatial organization that might reduce problem behaviours by people with dementia

Rarely provide any empirical evidence

Observation Considerations

- Direct observation of behavior
- Ability to link behavior to physical environment
- Observations conducted by facility staff
- Limited time available for observations
- Need for observations over time and at different times of day
Behaviours of Interest

- **Resident Behaviour**
  - Behaviour excess (problem behaviours, aggression, screaming, cursing, etc.)
  - Behaviour deficits (failure to initiate daily living activity)
  - Appropriate behaviour (engagement in daily life)
  - Resident affect when engaged

- **Staff Behaviour**
  - Interactions with residents
    - Voice tone during interactions
  - Work-related tasks that don’t involve residents (e.g., making the beds)
  - Off task or non-work related activity

Behavior Mapping Studies – Atrium Use

<table>
<thead>
<tr>
<th>Setting</th>
<th>SCU residents</th>
<th>Data collected</th>
<th>Rounds (Observations)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resthaven Care Center</td>
<td>40</td>
<td>1997-98</td>
<td>110 (4,938 observations)</td>
</tr>
<tr>
<td>Iosco County Care Facility</td>
<td>28</td>
<td>2003-present</td>
<td>148 (4,588 observations)</td>
</tr>
</tbody>
</table>

- 89.7% commons
- 7.0% hallways
- 1.9% resident room
- 1.4% garden atrium
- 42.5% commons
- 23.9% hallways
- 32.9% resident room
- 0.7% garden atrium

When residents are in the atrium, staff are present. Staff also use the room during breaks and to meet with other staff. When visitors are present in the atrium, they tend to be with other visitors.

These data suggest that the garden atrium areas were rarely used by residents with dementia.

Provision of Care

- **Examples of impact on resident behaviour**

Participant and Setting

- 96-year-old, non-ambulatory women with a diagnosis of dementia of Alzheimer’s type
- Referred for because of aggression against staff – at risk of removal from nursing home
- Physically restrained in bed or wheelchair throughout much of the day due to her severe aggression
- Chemical restraint - Ativan (0.5mg per day)

Behaviour Plan

(in place for one year before this study began)

- **Hierarchy of four responses**
  - a) Attempt to soothe her with a calm voice
  - b) Try to redirect her
  - c) Provide quite time with a snack
  - d) Administer Ativan as needed (0.5 to 1.0 mg)
Wheelchair Transfer Routine
• Three staff members assigned
  – Two to assist in transfer
  – One to hold her hands to keep her from hitting staff

Dependent Variable
Hitting - whenever the participant made forceful contact with a closed or open fist with a staff member
Attempts to hit (strike at a staff member, but miss) were not recorded

Direct Observation of Behaviour
• Observation session lasted between 3 and 5 minutes
• Data sheet divided into 10-second interval
• Observer recorded if “hit” took place during each interval
• If no hitting occurred during an entire 10-sec interval, it was scored as a non-occurrence

Nurse Aid
• 21-year-old female CNA
• 3rd year in local college nursing program and had worked in the setting for 10 months
• No experience with behavioral assessment or intervention
• At various times another staff member was present during the observations

Phase 1: Antecedent Analysis
• Identifying antecedents associated with aggression is necessary in designing an effective intervention
• Staff interviews suggested toileting routine was most common situation when hitting occurred. It involved staff proximity for the longest amount of time throughout the day.
• Aggression during the bathroom routine was compared to that observed while a staff member was seated within arm’s reach outside of the bathroom context

Phase 2: Functional Analysis
• Three conditions
  – Contingent Attention
  – Contingent Escape
  – Control
CNA Training

- Prior to conducting the functional analysis, the CNA was taught to implement the 3 conditions
- Training took approximately 30 min
- No feedback was provided on consequence delivery during observation sessions

Contingent Attention

CNA systematically provided verbal reprimands (similar to those used during the bathroom routine of the setting analysis) contingent on every episode of aggression

CNA instructed not to step away when hit during this condition

Contingent Escape

The CNA provide an opportunity to escape during the toileting session by stating, "Ok, I'll stop," and then moving back one meter for ten seconds, immediately following each episode of aggression

Control Condition

Similar to the control condition in the antecedent analysis (CNA sat in chair next to the participant)

CNA instructed to: a) deliver attention noncontingently, b) place no demands on the participant, and c) provide no differential consequences for hitting

Phase 3: Treatment

- Highest rate of hitting occurred during the contingent escape condition.
- An intervention designed to provide the time-based delivery of the reinforcer maintaining the participant’s aggression was designed
- Average latency (time between start of session and first hit) 33 seconds
- Average inter-response time (rate of hitting) 27 seconds

- Demonstrates the efficacy of a rather simple intervention for decreasing aggression by an elder with dementia who resided in a nursing home
- Intervention was clearly superior to Ativan® which either did not affect aggression (see sessions 1 through 20) or did so by possibly eliminating both aggression and socially relevant behavior (see session 37)
Strategies for Improving Resident Behaviour

- Social environment and staff interaction style

- Physical environment though external memory cues

- Care delivery strategies and routines