Impact of the Care Environment on people with dementia
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The needs of a person with dementia can be complex and community services are not always there to meet them...

institutional care may be the only option

However

Weiss Institute, Philadelphia Geriatric Center

First research based design
'Homelike' settings
Cluster arrangement
Common accessible space
Access to people and activities
Areas of peace, quiet and privacy
Influential

Research

- 1980’s - 16 studies in this area
- 2000 - 54+ studies


Debates

- 'big versus small'
- 'integrated versus segregated'
Integrated or segregated?

SCU minuses
No impact on:
- Wandering
- Cognition
- Functionality


SCU pluses
- Improved quality of care and quality of life
- Improved health and behaviour
- Increased autonomy
- Improved visiting patterns
- Increased community access

No consensus but studies suggest segregation preferable (Specialist Care Units)
- Appears to benefit cognitively intact
- Reduced behavioural disturbances
- Reduced apathy
- Improved or slow decline in mobility, communication skills, self-care skills

Design Principles & Features

Universal Design Principles
1: Equitable Use
2: Flexibility in Use
3: Simple and Intuitive Use
4: Perceptible Information
5: Tolerance for Error
6: Low Physical Effort
7: Size and Space for Approach and Use

Dementia Design Principles
- compensate for disability
- maximise independence
- enhance self-esteem and confidence
- demonstrate care for staff
- be orientating and understandable
- reinforce personal identity
- welcome relatives and local community
- allow control of stimuli

Dementia Design Features
- Small size
- Familiar, domestic, homely
- Scope for ordinary activities
- Discreet concern for safety
- Different rooms = different functions
- Age appropriate furniture and fittings
- Safe outside space
- Signage
- Control of stimuli (especially noise)
- Visual Access
Larger sized units associated with:
- resident agitation levels
- intellectual deterioration
- emotional disturbances
- territorial conflicts
- space invasions
- aggression toward other residents


NB. There is some conflicting evidence (Zeisel et al., 2003)

Smaller sized units associated with:
- anxiety
- depression
- mobility

Ref: Annerstedt, 1997; Skea and Lindesay, 1996

Dutch comparative study on the effects on people with dementia living in small group homes v’s traditional nursing homes:
- Less help with ADLs
- More social engagement
- Having a greater sense of aesthetics
- Being better occupied
- Less physical constraints prescribed

(Boekhorst et al. 2009)

The later the stage of dementia – the less important the environment?

Increased staff-resident interaction in small group living? (Fleming, 2008)

Independent small house model

The Green House Concept

“Intended to be a self-contained home for a group of 7-10 elders….a Green House © blends architecturally with other homes in its neighborhood”

The Gerontologist, Vol. 46, No. 4, pg. 538
Low occupancy
Lack of corridors
Visual accessibility*
Kitchen at heart of home

Small house village, Saskatchewan

Household/Neighbourhood model
Evergreen at Creekview, Wisconsin
• Small scale environment
• Discrete clusters
• Decentralized social and staff areas

Evergreen at Creekview
• Community involvement
• Welcoming for families and friends

Castleross, Carrickmacross
• Nursing and convalescence
• Retirement village
• Independent Living Units

Castleross
• Household model
• Dementia specific 'Woodlands' unit
• Kitchen at the heart
• Shop-fronted amenities
Moorehall Lodge, Ardee

Household model

- Dementia specific household

Familiar, Domestic & Homelike

- Comfy seats & Coffee tables
- Pictures & books
- Own bed & bedroom furniture
- Fireplace & mantelpiece

Also
- Homelike eating environment
- Kitchen like home

Features of a domestic environment

Also:
- A pleasant milieu
- Homelike eating environment
- Kitchen like home
- Light and airy
- Serene
- Unrestricted
- Inviting for friends and relatives

Features of a domestic environment

- Improved Quality of Life and reduced anxiety (Reimer, Slaughter, 2004)
- Lower levels of overall aggression (Zeisel et al, 2003)
- Residents chose homelike setting over institutional setting (Cohen-Mansfield and Werner, 1998)

But best results come when combined with well trained staff, positive philosophy of care and strong management (Fleming, 2008)

Homelike Environment – the evidence
Everyday Activities

- Person not a passive recipient of services
- Capable of making a contribution
- Residents viewed as partners in the care process (Khilgren, Hallgren, 1994)

Everyday Activities – the evidence

Reimer, Slaughter et al, 2004. Study of a Special Care Facility:
- Sweeping the floor, helping in the kitchen, access to garden.

Findings:
- Less decline in ADLs (compared to control)
- Decreased anxiety
- Increased interest

- Actively engaged residents in personal care and food preparation
- Led to improvement in Quality of Life
  * Dependent on focused staff intervention

Everyday Activities – the evidence

Safety

Walking about / exit seeking

- Obvious locked doors and alarms link to depression
- Camouflaged exits and silent electronic locks – less depression

Why?
Greater sense of control, empowerment and freedom – less need to try and exit the care setting
Walking about / exit seeking

Best option: Access to safe outside space
Namazi and Johnson, 1992a.
• Open (unlocked) door
• Dramatic reduction in aggression, agitation and wandering

The down side?
• Low et al, (2004) Harmful behaviours (risk taking, passive self harm) associated with better safety features
• Torrington et al (2006) Safety and health only domains associated with negative impact on Quality of Life

Safety

Rooms, Function and Furniture

• Familiarity
• Personalisation
• Rooms for specific function

Rooms, Function and Furniture

• Privacy, personalisation, individualised space
• Less aggression
• Variability in common space = less social withdrawal
Zeisel et al, 2003

Variety of spaces in environments for pwd:
• Anxiety and depression
• Social interaction
• Way finding

Rooms, Function and Furniture

OUTDOOR SPACES
Gardens

- Reduce agitation & agitated behaviours (Detweiler et. al., 2008; Calkins & Connell, 2003; Namazi & Johnson, 1992a)

Outdoor Spaces

- Keeping active and engaged
- Exercise & Vitamin D maintain bone and muscle quality
- Main benefit is staff interaction (Cox, Burns et al, 2004)

Outdoor spaces - Safety

- Unobtrusive safety features
- Non-poisonous plants, trees etc.
- Enclosed garden
- Pathways – non-slip, hand rails, seating etc
- Shelter

Nursing home garden, London

How do we encourage people to go outdoors more?

- Visible, easily accessible and user friendly
- Adjoining dining/sitting area
- Visible seating
- ’Halfway house’ (porch or conservatory)
- Covered areas/verandah (heated?)

How do we encourage people to go outdoors more?

- Highly prominent doorway(s) leading outside
- Access - level & barrier-free
- Comfortable ‘linger’ area inside door
- Comfortable ‘linger’ area outside door
- Easy to open doors* (unlocked)
- Fun things to do
- Improved wayfinding
- Reduction in behavioural symptoms (Bianchetti et al, 1997)

NB. Exit signs and panic bars can lead to increased attempts to leave.

**Signage**

- Easy to read
- Large enough for those with VI (size, colour contrast)
- Pictorial plus written words
- Easy to see colours
- Contrast with surroundings
- Correct height (low down)
- Consistency (same signs or cues)

**Signage**

- Should indicate function of room
- Pictures can help cue people to what the room or area is for. Use recognisable images - e.g. an image of a toilet will help cue someone to the function of the room better than an image of a man/woman.

**Signage**

- Memory boxes can act as prompts
- Personally significant memorabilia effective with people with a moderate dementia (Namazi, Rosner et al. 1991)
- Photographs of person in their youth? (Nolan, Mathews et al. 2002)

**Objects for orientation**
Marquardt & Schmeig (2009) findings:
- Increase no. residents in living area = á disorientation
- Straight circulation system = easiest for residents
- Where direction changes – having only one kitchen/dining/living area as a reference point aids orientation
- If accessed via kitchen/living/dining area – outdoor space is better located by residents
- Importance of direct visual access to all patient relevant areas regardless of circulation system

People with dementia:
- Problems with high levels of stimulation
- Less able to ‘screen out’ unwanted stimuli
- á confusion, anxiety, agitation

Less verbal aggression where sensory input controlled and understandable (Zeisel at al, 2003)

Noise is sound that is loud or unpleasant or that causes disturbance
Noise can cause stress, anxiety and general unhappiness
Good acoustics are important to well-being
Noise
- Locate residents away from noise producing areas (e.g. kitchens, delivery points, refuse collection)
- Use noise insulating materials
- Regularly maintain noise-producing equipment
- Understand environmental factors that contribute to intrusive noise
- Regularly assess and accommodate for vision & hearing loss
- Regularly assess the effect of noise levels on PWD

Alzheimer Knowledge Exchange

Light
- Not just about reducing stimuli
- Caution needed with light
- Reducing light can impact on safety & wayfinding

Benefits of Bright Light
- Ceiling mounted luminaires
- "à in restless behaviour
- "à in feelings of depression
- Improved sleep
- "Delay in cognitive decline
(Fleming, 2008; van Hoof et al., 2009ab.)

Benefits of Daylight
- Vitamin D
- Circadian rhythm
- Seasonal Affective Disorder (SAD)
- Therapeutic effects:
  - Reduced stress
  - Reduced analgesic use
  - Shorter hospital stays
  - Happier staff and patients
(Ulrich, 2002)

Summary
- Positives:
  - Increase in research in this area
  - Some arguments already won – e.g. single rooms
  - Strong evidence for lower numbers of people in a space, visual accessibility and improved lighting
- Negatives:
  - Lack of innovation in Irish nursing home design?
  - Research equivocal in some areas e.g. gardens
  - More (rigorous) research needed

"DESIGN MAKES GOOD CARE EASIER. IT DOES NOT MAKE IT HAPPEN."
(Marshall, 2001)
References

- Coe et al. (2007). Morgan et al. (2004); Doody et al. (2005); Skea et al. (2005).

References


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