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Alexandria L. Varshawsky
avarshaw@uow.edu.au

Victoria Traynor
University of Wollongong, vtraynor@uow.edu.au

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Abstract

Dementia-friendly designs are important in residential care homes but an aspect that remains neglected is the potential role of door designs in promoting wayfinding. A pilot project in NSW, Australia, tested the effects of unique room door designs for a small group of individuals living with dementia in a residential care home. Internal doors were transformed using a giant adhesive poster created by a commercial graphic designer. The poster replicated the look of traditional front doors, including a range of bright bold colours and architectural features, such as brass doorknockers, letterboxes and door guards. The Revised Algase Wandering Scale (RAWS) was used to identify the effects of introducing the doors on persistent walking, eloping behaviours and spatial disorientation. A total of nine individuals living with dementia participated in the project. The post-intervention data demonstrated that there was a reduction in persistent walking, eloping behaviours and spatial disorientation. In addition, ongoing anecdotal evidence found that individuals continued to seek out others to showcase their unique door.

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Graphic designed bedroom doors to support dementia wandering in residential care homes: Innovative practice

Alexandria L Varshawsky

MSc Gerontology and Rehabilitation, B.S. Exercise Science (Health Professions)

University of Wollongong, Wollongong, Australia

avarshawsky@warrigal.com.au

Contact: +61 4 7685 8872

Professor Victoria Traynor

PhD, BSc (Nursing Studies) Hons, Professor

University of Wollongong, Wollongong, Australia

vtraynor@uow.edu.au

Contact: +61 2 4221 3471

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Abstract

Dementia friendly designs are important in residential care homes but an aspect that remains neglected is the potential role of door designs in promoting wayfinding. A pilot project in NSW, Australia, tested the effects of unique room door designs for a small group of individuals living with dementia in a residential care home. Internal doors were transformed using a giant adhesive poster created by a commercial graphic designer. The poster replicated the look of traditional front doors, including a range of bright bold colours and architectural features, such as brass doorknockers, letterboxes and door guards. The Revised Algate Wandering Scale (RAWS) was used to identify the effects of introducing the doors on persistent walking, eloping behaviours and spatial disorientation. A total of nine individuals living with dementia participated in the project. The post-intervention data demonstrated that there was a reduction in persistent walking, eloping behaviours and spatial disorientation. In addition, ongoing anecdotal evidence found that individuals continued to seek out others to showcase their unique door.

Keywords

dementia, environment design, innovation, nursing homes, wandering behaviour

Introduction

Older people living with dementia commonly experience a significant degree of disorientation when moving around their environment due to memory related skill loss (McGilton et al. 2003). The importance of interior design on promoting well-being is known but research into the effects on individuals with dementia is limited. A brief search of the literature reveals clinical papers exploring the effects of wandering, colours and architectural design (Benbow 2013, Gulwadi 2013, Cipriani et al. 2014). This project however further expanded on environmental design and showcased a successful new approach to dealing with disorientation for people with dementia. The project observes graphic designed room doors that are visually appealing and demonstrates that designs similar to house doors would be a successful approach and environmental change to reduce wandering. It also assesses wandering behaviour commonly demonstrated by people with dementia and observes the ability for individual wayfinding.

The need for a supportive design plan for wandering people with dementia

Since 2014, the number of people 65 and older has more than tripled to 3.4 million (Australia Institute of Health and Welfare 2017) resulting in a need for new residential care homes that demonstrate literature's successful approaches to environmental design. However, developing an environment for individuals with dementia is becoming more difficult with dementia affecting every individual differently. Today's aged care market focuses on building residential care homes that demonstrate a pristine design style similar to that of a hotel defined only by nursing stations and traditional ward style hallways (Morgan-Brown et al. 2013). Although the design is ideal for independent individuals who need limited support, the environment has been recognised as problematic for people with dementia. We know that individuals living with dementia can experience wandering and often wandering can be a distressing experience. Wandering can simply be wayfinding

difficulties, getting lost or a psychological response, such as repetitive pacing or desperately seeking to leave a restricted area. This often results in feelings of anxiety and distress for the individual (Beattie et al. 2005, Chiu et al. 2005, Cipriani et al. 2014, McGilton et al. 2003). Design features can help individuals who wander, in particular colour and architectural design (Benbow 2013; Gulwadi 2013). Unfortunately further studies on the role of these features for individuals living with dementia are lacking, therefore highlighting a gap in the current research, which would benefit from further projects.

Developing a supportive design for people with dementia: A local solution

In 2016, as part of work to assess and improve the environment of people living with dementia in a residential care home, a creative and colourful design plan was reviewed. The project developed as part of a research assistant's Masters degree highlighted the need for more innovative approaches to environmental design in dementia care. With support from the facility stakeholder and a local university, the research team used current literature suggestions to develop a new creative approach to test custom graphic designs for individual room doors of people with dementia in residential care homes. Initially, multiple local design companies were contacted regarding the need for a tough graphic design product that could be customised to the home. A design print company was selected to help transform the traditional eleven doors in the home for people living with dementia into doors that looked similar to that of a commonly seen home front door.

The collaboration of the research team and the graphic design company highlighted eleven different coloured doors with unique design styles that were customised to fit each door. In addition to the colour and architectural design, the room number was also implemented. Each door provided multiple approaches to assist with wayfinding and visual recognition: colour, location, architectural design, and originality. This research project demonstrated an untraditional approach by implementing a supportive design that encouraged curiosity in addition to assisting with wayfinding and recognition. The graphic design project encouraged independence of people with dementia and further expanded current research to develop an environment that was individualised and personal.

It was important to evaluate the implementation of our initiative using an evidence based tool. The commonly used and well validated tool Revised Algate Wandering Scale (RAWS) (Chiu et al. 2011; Yayama et al. 2013) was adopted to evaluate effects of the change on wandering among the individuals. Wandering was tested using RAWS before (pre-intervention) and after (post-intervention) implementation of the new door design in the morning and early evening. After the pre-intervention test was completed, the graphic designs were installed onto the doors of the bedrooms. One week after the graphic designs were installed the post-intervention testing was undertaken using RAWS to record any changes in wandering demonstrated by individuals living with dementia.

Figure 1. The figure demonstrates an initial residential care home door (left) followed by the final look after the graphic designs were installed to the doors (right).

Reviewing the use of graphic designed bedroom door in practice

A total of eleven doors were installed and a total of nine individuals living with dementia participated in this project about the effects of the doors on wandering. Two of the individuals were not at all mobile and therefore ineligible to participate in the project. Brief interactions with those who received the new doors immediately demonstrated that all individuals were positive about the introduction of the new doors. This anecdotal evidence was combined with our research evidence to review the effectiveness of implementing the new door designs for individuals living with dementia in residential care homes. A total of 16 hours RAWS data was recorded (equal share between morning and early evening observations). The RAWS was entered into SurveyMonkey as a questionnaire and iPads were used onsite to record the observations using RAWS in SurveyMonkey. Data were downloaded into Excel to compare pre and post intervention findings. No statistical

analysis was undertaken since the sample size was limited to nine individuals. Post-intervention, after the door designs were implemented, there was an overall improvement in wandering in the mornings and early evenings (Figure 1 and Figure 2).

Figure 2. Revised Algae Wandering Scale results for the morning prior to and following implementation of supportive door designs.

Figure 3. Revised Algae Wandering Scale results for early evening prior to and following implementation of supportive door designs.

Reductions in all behaviours were demonstrated after implementation of the new door designs. In the morning, the persistent walking decreased the most from 22 ± 6 and 17 ± 7 . In the early evening, a decrease from 22 ± 8 and 18 ± 7 was found. Findings were observed in elopement behaviours with a decrease of the behaviour from 9 ± 3 and 7 ± 2 in the morning and from 8 ± 2 and 7 ± 2 in the early evenings. In addition spatial disorientation, changes were observed including early morning from 14 ± 3 and 12 ± 3 and evenings from 12 ± 3 and 11 ± 4 . The door designs clearly had positive effects on wandering for individuals living

with dementia in residential care homes. These door designs have the potential to reduce the agitation and other psychological stresses experienced when wandering occurs. It seems that the effects of the doors on spatial disorientation and eloping behaviours were limited. However, anecdotal evidence from the project was similar to the findings generated from using RAWs. Individuals showed great interest in their bedrooms after implementation of the door designs.

The observations confirmed that the implementation of the graphic designs to the bedroom doors improved the environment, developed ownership and supported older people living with dementia. The individuals were observed commenting on the colour of their door with visitors to ensure they knew which room they lived. Others more actively showed staff and visitors by taking them on a tour highlighting the door that was their own. Staff was also observed commenting on how positive the change to the home was with an increased colour and vibrancy to the home. Overall, the graphic designs were accepted on a very positive scale. Individuals living within the residential care home were curious and developed an interest in their door during the installation.

Future development

There is clear evidence that the design of residential care homes has an overall effect on individuals living with dementia. This includes the characteristics of residential care homes, such as small-scale size, corridor length, direct visual access, reference points, minimal repetitive elements and 'ledgible' rooms (Benbow 2013). This project further adds evidence to a cost effective and simple solution to implementing a 'ledgible' room. Evidence from this project presents improvement to what Algate describes as persistent walking, spatial disorientation and eloping behaviours. In addition, the anecdotal evidence overwhelmingly endorsed the quantitative findings. This was a small-scale clinical innovation project, which has influenced a regional provider of aged care services in NSW, Australia. Currently, every residential care home in this company has doors being fitted with designs. For further research, a larger scale evaluation of the effects of these doors is now possible. The findings of this project can now be used to review results at another home and further expand on the benefits of this innovative practice.

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Alexandria Varshawsky is a Honorary Clinical Fellow and research assistant at the University of Wollongong. She works as part of a management team for an aged care community in the Illawarra region of NSW, Australia. Alexandria completed her Master of Science Gerontology and Rehabilitation with Distinction at the University of Wollongong.

Prior to relocating to Australia from the US in 2015, Alexandria completed a Bachelor of Exercise Science (Health Professions) at California Lutheran University. After completing her degree, Alexandria found a passion for working with and improving the lives of older people.

Professor Victoria Traynor works in the School of Nursing at the University of Wollongong. Victoria's experience combines research education, and clinical experience in aged and dementia care. The focus of her work is on improving dementia care services using qualitative research and practice development techniques across care settings with multi-disciplinary teams. A summary of these works can be found at Aged and Dementia Care Health Research and Education (ADHERe).

Key achievements are development of a range of resources for delirium care, including national clinical pathways, nursing and multi-disciplinary dementia care competencies, interactive workshops for the implementation of person centred care and a Dementia and Driving Decision Aid (DDDA) booklet. Victoria was also the inaugural Director of the NSW/ACT Dementia Training and Study Centre and the postgraduate co-ordinator of fully-distance multidisciplinary Master of Sciences and Graduate Certificates in Gerontology and Rehabilitation Studies and Dementia Care. Current projects include, evaluating a physical activity programme for individuals living with a dementia in residential accommodation, special observation practices in the acute care setting and evaluating the effects of daylight on the health and well-being of older people.

Prior to relocating from UK in 2006, Victoria held positions with University of Nottingham, the Royal College of Nursing Institute (Gerontological Programme), Oxford Brookes University and with the University of Edinburgh where she completed her PhD studies and nursing honours degree.