

Multisensory Environments (MSEs) in dementia care: the role of design - An interdisciplinary research collaboration between design and health care

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Abstract

An interdisciplinary research project has evolved from a broad consideration in respect to the rising number of people with dementia, rapid growth of an ageing population, over-prescribed use of antipsychotic medication and the need for cost-effective interventions supporting dementia care. Within this context, this research aims to explore the quality of multisensory stimulation offered in homes for residents living with dementia, focusing on Multisensory Environments (MSEs) in particular, and whether design can improve such experiences and maximise therapeutic benefits. MSEs are widely used in dementia care as a meaningful leisure activity and a therapeutic intervention. However, evidence suggests that they often fail to address the specific needs of people with dementia due to inadequate design and poor facilitation. Also, little research has considered the impact of MSE design on engagement and wellbeing. Hence, this research investigates the aesthetic and functional qualities of MSEs currently provided, such as material, colour, imagery, spatial set-up, usability, and accessibility, with the aim of establishing reasons for success and failure. The research includes learning about the approach and challenges care home staff face in their daily work and exploring how they can be supported in providing improved care. Care homes have been visited to examine and record how they facilitate MSEs, applying ethnographic methods that incorporate structured interviews with care staff and managers, observations of sensory sessions and a focus group workshop with care home staff. The results of this study will inform the development of design recommendations for MSEs for people with dementia, potentially maximising the benefits for residents through improved design providing a person-centred experience.

At the time of the conference the project was in its early stage and only preliminary results were available. The paper therefore focuses on the research context and discusses the process of identifying and setting the problem and research question. This research, a collaboration between researchers from design and occupational therapy, is funded by the Arts and Humanity Research Council (AHRC) and supported by Care UK.

(More information under fada.kingston.ac.uk/de/MSE_design_in_dementia_care)

Keywords: dementia, wellbeing of older people, Multisensory Environment (MSE), multisensory stimulation, care home environment, inclusive design, evidenced-based

Introduction

This paper presented at the *Design4Health2013 conference* emerges from an ongoing research project that critically investigates the success and failure of multisensory facilities within a residential care home context for people with dementia, with a particular focus on the role of design. Against the sharp rise of the population affected by dementia, this interdisciplinary research evolved from a broad consideration in respect to the quality of dementia care and the need for cost-effective interventions in this sector. So far, very little research has considered the impact of design on engagement and wellbeing or has addressed the functionality and aesthetic quality of Multisensory Environments (MSEs) for people with dementia and older people in general. As a result, it has rather been left at the discretion of the industry (Anderson *et al*, 2011; Collier *et al*, 2010).

At the time of the conference the research project was in its early stage and only preliminary results were available. Therefore, the first part of this paper focuses on the contextual conditions regarding the MSE and dementia care with reference to publications by the Department of Health and current academic research. In the second part the process of identifying and setting the problem within a design context is discussed. The paper explains preliminary investigations and results leading to the detailed articulation of the research question. This includes observations from initial visits to residential and nursing homes caring for people living with dementia in and around London and conversations with care staff and home managers.

Project background

The project was developed on the basis of prior research by both authors culminating in a unique collaboration between design and occupational therapy. Although coming from different professional backgrounds, the authors identified similar questions, both recognising the need for evidence-based research into the functionality and aesthetics of MSEs for people with dementia and the role of design in this.

Anke Jakob is a design researcher and practitioner with a background in textile design and digital media. Jakob's research focuses on the design of multisensory experiences defined through the experimental use of digital media, projection, light and textiles, and its potential application within therapeutic environments and the health and wellbeing sector (Figure 1; Jakob, 2008). An occupational therapist by profession, Lesley Collier's research explores sensory processing in people with moderate to severe dementia, in particular the efficacy of multisensory stimulation in improving occupational performance as well as mood and behaviour. Her work includes designing treatment protocols to assist with the delivery of multisensory stimulation (Pool, 2012).

Collaborative partnerships were formed involving experts and professionals from design and health care including Care UK, a leading independent provider of health and social care services. The project is funded by the Arts and Humanities Research Council UK (AHRC). A project summary can be found under: fada.kingston.ac.uk/de/MSE_design_in_dementia_care.



Figure 1: Examples of Jakob's research investigating sensory experiences through the experimental use of light and colour, projected imagery, textiles and space. (Images © A Jakob)

Dementia and the Multi Sensory Environment (MSE)

The need for non-pharmacological interventions in dementia care

Over 800,000 people in the UK are living with dementia - a figure expected to double in the next 40 years. As there is no cure for dementia currently, treatment focuses on care strategies alleviating the signs and symptoms of the disease. Cost-efficient interventions optimising dementia care are therefore urgently required. *Living well with dementia - a National Dementia Strategy*, published by the Department of Health (DoH) in February 2009, emphasises the importance of providing good-quality care for all with dementia (DoH, 2009). In November 2009, the subsequent publication of a follow-up report made reference to the over-prescription of antipsychotic medication in treating behavioural and psychological symptoms of dementia. The report stated that out of 180,000 people receiving this form of drug therapy, two thirds of prescriptions were deemed unnecessary (DoH, 2009). The Alzheimer's Society argued that behavioural and psychological symptoms can be managed without resorting to antipsychotic drugs: "The person (with dementia) should also be helped to lead an active life, with interesting and stimulating daily activities. In this way it is often possible to avoid the use of drugs altogether" (Alzheimer's Society, 2012). The principles of good person-centred care are posited as crucial in achieving increased wellbeing and happiness in people with dementia. Further, the NICE clinical guidelines, providing recommendations for treatment and care for people with dementia, suggest a number of approaches for non-pharmacological interventions, including multisensory stimulation (NICE, 2009/2012).

MSEs for people with dementia

As an alternative to drug therapy, the use of MSEs – sometimes also referred to as 'Sensory Room' or 'Snoezelen' - represents a potentially valid intervention. Multisensory stimulation aims to actively stimulate the senses of vision, touch, hearing, smell, taste, and movement with limited need for higher cognitive processing. An MSE is a designated space where this stimulation takes place. It can be described as a 'toolbox' that contains a number of different sensory tools to provide different intensity of stimulation. Structured use of multisensory stimulation aims to enhance feelings of comfort and wellbeing supporting positive emotions, relieve stress and pain,

maximise a person's potential to focus, and support communication and memory performance. (Figure 2)

The MSE concept originated in 1966, when American psychologists Cleland and Clark set up several Sensory Rooms they referred to collectively as a 'Sensory Cafeteria' (Cleland, Clark, 1966). Following on from this the first 'Snoezelen' (the term derived from the two Dutch words 'snuffelen' and 'soezen' - the equivalents for English 'sniffing' and 'dozing') was subsequently developed by Dutch therapists Jan Hulsegge and Ad Verheul in the 1970s for adults with severe learning disabilities (Hulsegge, Verheul, 1987). The MSE concept has since been adopted worldwide coming to the UK approximately 30 years ago where it was embraced as a leisure driven activity with a focus on enablement (Hulsegge, Verheul, 1987).



Figure 2: MSE examples: Snoezelen room for people with severe cognitive disabilities in De Hartenberg Centre, Netherlands (© A Verheul); Multisensory Room by ROMPA, one of the leading suppliers of MSE equipment (Source: online, last accessed 12/12/2013, <http://www.rompa.com/multisensory-environments-rooms>); MSE for older people in The Mount Hospital Leeds (Source: online, last accessed 12/12/2013, <http://www.communitycare.co.uk/blogs/mental-health/2010/02/multisensory-snoezelen-room-fo/>)

As an enabling environment, the MSE is particularly effective for individuals with limited cognitive functioning (Collier *et al*, 2010). It offers an alternative way to communicate with such individuals, as communication does not have to take place on an intellectual level through language but on an emotion-orientated level through the senses (Pagliano, 2008). Subsequently, the approach had been broadened, offering a range of activities for diverse populations including people with dementia. A number of studies have shown that the use of the MSE in dementia care has beneficial effects as a resource for meaningful engagement and is a powerful tool in improving function, alleviating psychological and behavioural symptoms e.g. challenging behaviour and depression, increasing appropriate communication, and improving staff morale (Sanchez *et al*, 2013; Collier *et al*, 2010; Staal, 2007). Research suggests that with a carefully constructed assessment and intervention plan this approach can be used both in care homes as well as the community. Van Weert's work illustrated the positive effect on staff /resident behaviour as a result of a multisensory environment approach (Van Weert *et al*, 2011).

However, little research has been published considering the actual design including functionality and aesthetics of MSEs and its impact on engagement and wellbeing. A recent literature review produced only two publications concerned with this issue. The research and practice of British designer Katie Gaudion and Finnish artist and care practitioner Sari Hedman illustrate design thinking and highlight the need for design interventions in relation to currently existing MSEs. Gaudion criticises the lack of multisensory stimulation, the emphasis on sight neglecting other

senses and the predominance of high-tech equipment often to be found in current MSEs (Gaudion, 2011). Hence her research project *Textile props for multisensory environment* focuses on the development of 'Occupational Textiles' (textiles to engage with) and textile props to be used within MSEs (Gaudion, 2011). The props aim to encourage touch, movement and the occupation of play. Hedman identified that the aesthetics of traditional MSEs are not appropriate for older people with dementia, referring to them as childish. Furthermore, items aimed at tactile stimulation such as horsehair were used out of context which was not helpful for this user group (Hedman, 2008). Consequently she started to explore what older people with dementia might want to experience and implemented the results of her research within her design of six multisensory spaces for older people in Helsinki.

The MSE in care homes: what is currently on offer?

As a consequence of reported benefits, MSEs have been established within a number of dementia care settings to be used as a meaningful leisure activity and a therapeutic intervention. However, evidence suggests that such facilities are often underused and sensory sessions are not performed. Also, the MSE fails to address the specific needs of people with dementia due to inadequate design and poor facilitation. A report by Dalke and Corso *Living with dementia: can design make a difference?* states that "Reports on various kinds of sensory rooms have not been positive; poor design, non-independent use by residents, fear of the spaces by both staff and visitors leave them locked up." (Dalke, Corso, 2010).

This gave reason to investigate further into the problem, and 40 care homes in and around London were contacted to find out if they had either a Sensory Room or mobile sensory equipment. The care homes were selected from a list already available through previous research projects at Kingston University (Dalke, Corso 2010). Approximately two thirds of contacted homes did not provide such facilities for various reasons such as: no space for an extra room; no funding; management was not convinced it would make a difference if offered to their residents. One care home stated that MSEs were not required by residents.

Subsequently, initial visits were arranged with six care homes who confirmed having a Sensory Room, to view their facilities and interview staff about their use. Only two of the care homes visited made regular use of the Sensory Room with the activity co-ordinator playing an active role in providing multisensory stimulation. In the other homes the facilities were rather neglected, not used very often, and installed equipment was not accessible to users. Overall, from a design perspective, none of the rooms were suitable for people with dementia in terms of aesthetics and functionality. (Figure 3).

In particular, the aesthetics were often not age-appropriate. Imagery applied was sometimes juvenile and appeared patronizing. One member of staff commented that the Sensory Room was not used very often as "the flashing lights might not be appropriate for this age group, who are not familiar with disco lights as we are". Often the spaces were cluttered with distracting and unnecessary accessories or furniture; in some cases the room was used as a storage space. In all homes there was insufficient range of multisensory equipment, in particular for tactile stimulation. In most cases the rooms' appearance in respect to seating, curtains, and carpet did not differ significantly from the rest of the home, missing the chance of offering a different spatial

experience. The furniture did not offer an alternative seating position; the vestibular sense was neglected completely.



Figure 3: Existing MSE facilities / Sensory Rooms in some of the care homes visited

Furthermore, interviews with staff revealed that few had been trained in how a sensory approach should be applied. Almost all of staff interviewed were not satisfied with the MSE equipment or MSE items available through suppliers. Staff felt overwhelmed and uninspired by the suppliers' catalogue and the researchers experienced a sense of helplessness amongst some of the staff.

Research question and problem

These preliminary visits were extremely informative, revealing a number of issues. It is apparent that there is a large gap between research regarding the benefits of a MSE in dementia care and how it might be implemented in practice. Often simple practicalities prevent the frequent use of the Sensory Room such as that it is located too remotely from the daily action of the care home, or there is not enough staff to take residents there. It is also evident that there is often a significant lack of guidance and training about how to use a MSE as well as lack of inspiration and ideas amongst staff.

In conclusion it would appear that MSEs / Sensory Rooms have been installed with little thought to their design or how they are to be used. Often care homes rely on the supplier to design and set up the room with little or no involvement of care home staff. Subsequently, the MSE does not always achieve the beneficial effect for the person with dementia and staff become despondent as

a result. The consequence is an unused space that is perceived as being of little value. Identifying the design features that potentially can improve accessibility for older people with dementia will help care homes to create an environment that is appropriate for residents and their families as well as staff.

Ongoing Research

Following this first investigation, a more in-depth study has been undertaken involving 16 care homes with MSEs in Greater London and the Southampton area with the aim of examining and recording the current use of MSEs, the design features and the opinions of staff using these facilities. Ethnographic methods have been applied to collect data including structured interviews, observations of sensory sessions from the point of view of the person with dementia, and a focus group workshop with staff. The research does not directly include people with dementia and/or their immediate relatives, as this is beyond the remit of this research project. The study focuses primarily on care staff and home managers aiming to learn from their experience and approach, to develop understanding and insight of the daily tasks and challenges care homes and their staff face, and how they can be supported in their work. The outcomes of the study will be published in a subsequent paper.

Based on the results of this study, preliminary design recommendations tailored towards the needs of care homes and their residents will be developed, to potentially support and improve age appropriate multisensory stimulation. The design outcomes of this research, which will be accessible online, aim to contribute towards improved care services positively enhancing the lives and wellbeing of people living with dementia.

On the basis of the results of this project, subsequent research will be undertaken to establish a 'proof of concept' study involving residents with dementia, family members and staff.

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