

## Viewing and making art together: a multi-session art-gallery-based intervention for people with dementia and their carers

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### Abstract

**Objectives:** This is the first known study that sought to understand the experience of an eight-week art-gallery-based intervention offered at two distinctly different galleries for people with mild to moderate dementia and their carers. The study examined impact on social inclusion, carer burden, and quality of life and daily living activities for a person with dementia.

**Method:** A mixed-methods pre-post design using standardised questionnaires and interviews involved 24 participants (12 with dementia) and compared similar interventions at a traditional and a contemporary art gallery. Qualitative data was analysed using thematic analysis.

**Results:** No significant pre-post difference was found between the traditional or contemporary gallery groups on quantitative measures. There was, however, a non-significant trend towards a reduction in carer burden over the course of the intervention for both gallery groups. Thematic analysis revealed well-being benefits from both traditional and contemporary art gallery sites that included positive social impact resulting from feeling more socially included, self-reports of enhanced cognitive capacities for people with dementia, and an improved quality of life.

**Conclusion:** Participants were unanimous in their enjoyment and satisfaction with the programme, despite the lack of significance from standardised measures. Further consideration of art galleries and museums, as non-clinical community resources for dementia care, is warranted. The interventions at both galleries helped to foster social inclusion and social engagement, enhance the caring relationship between the carers and PWD, support the personhood of PWD, and stimulate cognitive processes of attention and concentration.

**Keywords:** community-based dementia care; carer burden; quality of life; visual art; well-being; social inclusion; museums; art galleries

### Introduction

Art galleries as intervention sites Theodore Low (1942), an early advocate for art galleries to be socially inclusive places for learning and adult education, argued that museums have social responsibilities to engage a wider public in their activities. Fifty years later the American Association of Museums (1992) documented the development of new roles for galleries and museums, seeking to involve more diverse audiences and to put education at the “centre of their public service role”. Sandell (1998, p. 404), writing at the time of recent cultural policy initiatives in the UK, suggested that social exclusion was an important issue for museums to address.

The shift in emphasis, from museums/galleries as repositories of cultural artefacts to places for learning, social engagement and well-being, provides new opportunities to develop community-based programmes for populations with specific needs. Recent research using gallery and museum collections has documented a range of advances in this area. Roberts, Camic, and Springham (2011) have developed a theoretical understanding of how viewing art in a gallery could psychologically support carers of family members with severe mental health problems. Chatterjee, Vreeland, and Noble (2009) demonstrated that handling museum objects enhanced self-reported patient life satisfaction and health status on in-patient medical wards. Goulding (2012), in a study of older adults, addressed the use of contemporary art galleries to enhance well-being and social engagement.

Silverman (1998) previously addressed the therapeutic potential of museums across different populations, including people with dementia (PWD), where he observed benefits of ‘increased self-esteem, fostering life review, enabling social interaction, and encouraging cognitive stimulation’ (p. 233). The first reported gallery-based programme for PWD and family carers took place at New York’s Museum of Modern Art (MoMA) (Rosenberg, 2009) and involved attendance in a 90-minute, once per-month gallery tour on a day the gallery was closed to the public. Mittelman and Epstein (2009, p. 104) reported the programme provided an ‘increase in intellectual stimulation, social interaction and improved mood within an accepting environment’ for the PWD. Eeckelaar, Camic, and Springham (2012) altered the MoMA model in order to examine the interplay between art viewing and art making by adding an art-making component immediately following the art-viewing session; they also extended the intervention to three sessions in order to intensify the experience. This research sought to ascertain whether structured viewing of art, followed by art making, within a gallery setting, could impact verbal fluency and episodic memory for people with mild to moderate dementia. The results suggested that episodic memory could be enhanced through aesthetic responses to visual art, while effects on verbal fluency were more ambiguous. Two key elements in the studies cited above are creative activity (Cohen, 2009) and social engagement (Greaves & Farbus, 2006), which have also been identified by Zeisel (2009) as important aspects of art-viewing and art-making activities for PWD within an art gallery.

An Australian study found that for those with moderate to severe dementia art-gallery programmes can be worthwhile, even if not being able to demonstrate longer-term impact, citing the importance of social, cognitive and emotional benefits even if they occur ‘only in the moment’ (MacPherson, Bird, Anderson, Davis, & Blair, 2009, p. 751). The present study incorporated aspects of the Meet Me at MoMA dementia programme (Rosenberg, 2009) and expanded the MacPherson et al. (2009) and Eeckelaar et al. (2012) studies by developing a more intensive multiple session intervention undertaken simultaneously at two different art galleries: the first, focusing mostly on 17th/18th century European art, housed in a 200-year old Georgian building and the second, showcasing contemporary international art, in a 5-year old ultra-modern building. Previous studies have used only one style of painting or did not indicate a style at all.

The present study sought to explore the experience of a greater number of lengthier sessions (e.g. MacPherson et al., 2009), involving dissimilar types of art viewed in different art-gallery environments and how such an intervention could impact carer burden, the PWD–carer relationship, social and cognitive domains, social inclusion and quality of life for the PWD. The study also wanted to explore if different styles of artwork might act as different stimuli thus triggering different positive or negative cognitive, emotional or social reactions and experiences, which could be explored in future studies.

### Theoretical framework

In developing this research we drew from different theoretical perspectives. The context in which this research was carried out helped to define our research questions and is a critical component of the intervention. The constructivist museum model (Hooper-Greenhill, 1997), which framed the intervention, explains how visitors learn within a museum or gallery and is based on coconstruction of knowledge from an interactive experience with a gallery educator, the artwork and visitor-group discussion, analogous to a ‘triangle of knowledge’. Knowledge is constructed in this model, not by increasing one’s factual information but by ‘reorganizing and recreating what is understood in relation to prior knowledge, memories, the surrounding environment, and people’ (Jung, 2011, p. 335). While new learning takes place, it is not contingent on taking in ‘facts and figures’ about an artwork and its artist.

The second theoretical perspective that guided both the research and the relationships between the gallery staff, researchers and participants has been that of social flexibility, akin to what Bateson (2000) described as ‘uncommitted potentiality of change’. In this model the sense of control does not exist in a hierarchical relationship between the art educator and visitor or between the university researchers and gallery staff. Social flexibility allows control to be shared and is dependent on interactivity where discussion, exploration and testing out take place across and between people and where the outcome is not known in advance.

A third theoretical influence has followed from the work of Cohen et al. (2006) and their research with older adults attending professionally conducted cultural programmes, which has led to a better understanding of the positive influences and mechanisms the arts have on health promotion. In particular, the current study draws on the influence of two psychological growth phases related to creativity and ageing identified in older adults by Cohen (2009): the liberation phase, seen to emerge from one’s mid-50s to mid-70s and the summing-up phase, frequently occurring in the late 60s and into the 80s.

In the current study we incorporated these theoretical perspectives to help us better understand how a more prolonged intervention involving art-viewing and art-making sessions in a gallery context might impact PWD and their carers. We also hypothesised that carer burden would decrease and the quality of life for the PWD would increase.

### Method

**Participants and intervention sites** There were two intervention sites, Dulwich Picture Gallery and Nottingham Contemporary. After receiving ethics approval, recruitment occurred through the Alzheimer’s Society, Extra Care Charitable Trust and the host galleries. While all participants were able to give consent, carers also signed consent forms agreeing to act as a personal consultee (proxy), if necessary, at any time during the study. Eight PWD–carer pairs (Dulwich) and five pairs (Nottingham) were recruited and consented to participate (N = 26). Twenty-four participants completed the intervention (PWD age range = 58–94, M = 78.3, SD = 8.8; 17 white-British, 4 white-Europeans, 2 British-Asian, 1 black-British); although 12 people had visited an art gallery within the last five years, there was no requirement to have interest or previous experience in visual art. One PWD from Dulwich (and her accompanying carer) dropped out due to another health-related concern.

Inclusion criteria required diagnosis of dementia within a mild to moderate range and age equal or greater to 55 years. Exclusion criteria were physical incapability to attend, severe mental health problem or life threatening illness. To determine inclusion within a mild-to-moderate range of dementia, the Addenbrook's cognitive examination revised (ACE-R) (Larner, 2007), incorporating the mini-mental status exam (MMSE), was administered along with the neuropsychiatric inventory (NPI-Q), a tool used by carers to identify neuropsychiatric symptoms in older adults (Kaufer et al., 2000). Researchers administered the ACE-R with the PWD and the NPI-Q with the carers, acting as proxy. MMSE scores ranged from 10 to 24 ( $M = 20.1$ ), placing PWD in the mild to moderate range of dementia. ACE-R scores ranged from 18 to 73 ( $M = 52.8$ ,  $SD = 18.4$ ), with higher scores indicating better cognitive functioning. NPI scores for the number of psychological symptoms present in the PWD ranged from 4 to 12 (out of a maximum of 12), with severity of symptoms scores ranging from 4 to 18 (out of a maximum of 36).

The distress of symptoms to the carer scores ranged from 0–32 (out of a maximum of 60). Based on the carer reports using the NPI-Q, only one participant was reported to experience severe neuropsychiatric symptoms or behavioural problems. At initial screening there were no statistically significant differences between participants at either site, on MMSE, ACE-R or NPI-Q scores.

### Procedure

The intervention consisted of eight two-hour sessions over an eight-week period at both sites. The sessions were divided into two sections: one hour of art viewing and discussion followed by one hour of art making. During the first week, introductions took place, nametags were provided and sketchbooks for drawing and writing were given to the participants. The group then moved to one of the gallery rooms where chairs were arranged in front of an artwork. An art educator began with a brief introduction to the work followed by a discussion based upon a series of different questions which varied somewhat depending on the artwork. Over the first four weeks two artworks per session were explored in this manner; on two occasions a third work was added and on two other occasions each PWD–carer pair was asked to choose and discuss a third work with each other.

After art viewing the group moved to a studio for art making which was facilitated by a professional artist with experience in community-arts programmes. Each week different materials were provided depending on the art-making task and included water-based paints, pastels, coloured pencils, collage material, glue, quick-drying modelling clay and printmaking supplies. Completed work was stored at the gallery and given back to the participants at the final session. Sessions were audiorecorded for later analysis.

### Design

The study was a mixed-methods pre-post design that sought to examine the impact of an art-gallery-based intervention conducted at two distinct types of galleries. As one aim of the study was to assess the feasibility of the intervention across two different types of art galleries, a control group was not included.

### Measures

After the initial screening was completed, three measures were administered pre and post intervention. A health related quality-of-life measure, the Dementia Quality of Life (DEMQOL-4) questionnaire (Smith et al., 2005), a 29-item, 4-point Likert scale where a higher score indicates better quality of life, was used with the PWD. Inter item and test–retest reliability were reported to exceed the standard criterion. Carers completed the Zarit Burden Interview (ZBI) (Zarit, Reever, & Bach-Peterson, 1980) and the Bristol Activities of Daily Living scale (BADLS) (Bucks, Ashworth, Wilcock, & Siegfried, 1996). The ZBI is a 22-item, 5-point Likert scale to assess the severity of carer perceptions of burden or stress in caring for a PWD. Higher scores indicate greater burden (range . 0–88). Inter-item and convergent reliability have been reported as high (Scott, Roberto, Hutton, & Slack, 1985).

The BADLS is a brief 20-item measure of a PWD's ability to undertake activities of daily living (ADLs) as assessed by a carer. Test–retest reliability was judged to be good to very good for 14 items (0.60 to 1.0), with six items being judged to be fair to moderate (0.21 to 0.60). Semi-structured interviews were conducted by the authors with the PWD and carers 2–3 weeks after the groups ended; the interviews, which were audio recorded and transcribed, occurred in the participant's home and lasted 50–90 minutes. Topics included participation in the viewing and making of art components, relationships, communication and gallery context. Field notes (Simonds, Camic, & Causey, 2012) including detailed observational data kept by the researchers who also

attended each session were shared and discussed among the research team throughout the intervention at both the galleries.

### Data analysis

Parametric and non-parametric statistical tests, using SPSS 19, were used; accepted significance level was  $p < 0.05$ . Interview and observational data were analysed using thematic analysis, a qualitative methodology to help focus on meaningful themes across a data set by examining shared 'experiences, meaning and the reality of the participants' (Braun & Clarke, 2006, p. 81). Themes were iteratively coded by the first and third authors and were examined for consistency by the second author and an independent reviewer. Few inconsistencies were identified but for those that were, further discussion and reexamination of transcripts resolved them.

Theme development was both inductive and theory-driven as we were interested in the experience of the intervention as well as emerging issues raised relating to the nature of relationships between research participants, art viewing and art making within a gallery setting.

## Results

### Standardised measures

Table 1 displays the results of all quantitative analyses. Tests of normality (Shapiro–Wilk test) were carried out on all data (Table 1). No difference in scores was found between the sites for carer burden (ZBI), activities of daily living (BADLS) and quality of life (DEMQOL). Data from both the sites were therefore combined. ZBI scores were not normally distributed, therefore, the Wilcoxon signed rank test was used. There was, however, no statistically significant difference between the combined scores at the two time points, although there was a slight trend towards a reduction in burden over the course of the intervention, which was more strongly supported by thematic analysis. BADLS pre- and post-intervention scores were normally distributed. A paired t-test found no significant pre-post difference between the scores, indicating that over the course of the intervention there was no change in the PWD ADLs nor a change in dependency on the carer. The total DEMQOL score was normally distributed pre- and post-intervention. A paired t-test found no significant difference between pre-post DEMQOL, demonstrating that although PWD self-reported quality of life did not improve, it appeared to remain stable over the course of the intervention.

### Thematic analysis

Thematic analysis resulted in three overarching main themes, comprised of eight categories (Table 2). We focussed on themes found across all participants (Boyatzis, 1998) in order to maximise validity and to focus on areas that were relevant to all respondents. The themes presented here were identified in the data from the PWD and carers from both the gallery settings and can be considered to be central findings for this study.

### Social impact

This theme consisted of two categories: the social aspect of the group and the intervention's impact on the caring relationship between the PWD and carers. Positive responses regarding the social aspect of the group included: All of us sitting around the table, all doing different things. It was a companionship sort of thing (N-P).<sup>2</sup> Doing art, making art, occupying yourself, all of these things are good. . .but it isn't very easy to do sitting at home. So to get together with a group of people to interact like that, that's what I think makes it successful (D-C). Regarding the impact on the caring relationship, responses were unequivocal even though this area may have been more complex to discuss in the presence of both the members of the pair: It has been pleasant doing something together other than taking her to the doctor (D-C). It helped me, it certainly did. . .the only time we go out together except for medical things (D-C). It was uplifting for me psychologically and allowed me to do something together with him (D-C).

Table 2. Themes and categories from thematic analysis.

Themes	Categories
Social impact	Social aspect of group
Caring relationship	
Cognitive capacities	Engagement
New learning	
Memory	
Art gallery setting	Empowering
–Social inclusion	

-Feeling valuable  
-Comparison to healthcare services  
Engaging with artwork  
Intervention structure

Table 1. Results of quantitative analyses for carer burden, activities of daily living for PWD and quality of life of PWD before and after the intervention.

Dulwich Picture Gallery Nottingham Contemporary

Pre Post Pre Post

Carer burden (ZBI) p . 0.15 p . 0.73 p . 0.33 p . 0.10

Paired t-test t . 0.65, df . 6, p . 0.54 t . 1.51, df . 4, p . 0.21

Wilcoxon signed-rank test Pre: (p . 0.01, range . 2–53, x . 37.7, SD . 17.5)

Post: (p . 0.61, range . 4–58, x . 32.7, SD . 20.4)

Z . 1.335, p . 0.18

Activities of daily living (BADLS) p . 0.65 p . 0.36 p . 0.35 p . 0.94

Paired t-test t . 0.52, df . 6, p . 0.63 t . 0.24, df . 4, p . 0.82

Pre: (p . 0.91, range . 2–46, x . 21.1, SD . 12.4)

Post: (p . 0.50, range . 10–33, x . 22.1, SD . 7.8)

t . 0.590, df . 11, p . 0.57

Quality of life (DEMQOL) p . 0.23 p . 0.37 p . 0.27 p . 0.03

Wilcoxon signed-rank test Z . 0.68, p . 0.50 Z . 1.76, p . 0.08

Paired t-test Pre: (p . 0.61, range . 72–122, x . 91.5, SD . 14.7)

Post: (p . 0.09, range . 55–111, x . 92.2, SD . 17.4)

t . 0.155, df . 11, p . 0.88

### Cognitive capacities

Cognitive capacities were not the primary focus of the intervention yet they were spontaneously mentioned by the carers and PWD as something that they observed over the course of the intervention. An increased and enhanced level of cognitive engagement for the PWD was highlighted, during both art viewing and art making, but there were also reports of this carrying over outside the group. The engagement involved a cognitive and emotional component: She would be coming back (from the gallery) a bit more mentally sharp, a bit more with it on those days (D-C). He would focus on a painting very clearly and be able to say what he liked and what he didn't (D-C). She never wandered off in the gallery or art making sessions; she always stayed focused (D-C). He was more actively absorbed in the viewing and making than he is at home, where he watches television and falls asleep (N-C).

One of the more controversial areas of dementia care is the concept of new learning and whether PWD are capable of learning new skills and knowledge. Recent research involving PWD and carers in singing groups suggested that learning new lyrics, melodies and movement was possible for people in the early and mid-stages of dementia (Camic, Williams, & Meeten, 2013). Likewise, in the present study, we were able to substantiate that the PWD were able to demonstrate new learning within a gallery setting. The carers welcomed it in particular: You can't just say that there is no point in learning new things, there is a point at the moment at the time you are doing it and there is a purpose in learning and doing (D-C). I didn't realise I could still learn new things (N-P). The PWD were often surprised that learning about art and making it was enjoyable and worthwhile: I enjoyed learning with others and finding that I knew more than I thought I did (N-P). I learned to look at art in a different way to appreciate the use of colour and how light is balanced (D-P).

Variations in memory functioning during and after the gallery sessions were another area identified. For the PWD, memory enhancement often came as a welcome surprise and likewise for the carers: It set me memory going. . . I sometimes sit in here and I take me memory back. . . even further than I thought I could remember (N-P). I would walk in (to the gallery) and find out exactly where things were in the paintings, it was great (D-P).

### The art gallery setting

We were particularly interested in the impact of the intervention within the open access public setting of two galleries which differ greatly in terms of architecture and exhibitions. Categories identified within this theme included the art gallery as an empowering and special environment that helped to support the participants to feel like active members of the society, who were socially included and valued as individuals: The gallery was a nice quiet place for your brain to work (D-P). It's much more valuable than you might think; it was inherently

empowering because she is doing something, looking at and talking about art, making it and (the staff) getting people to talk about the art they've made (D-C). Some contrasted the gallery with conventional service provision: I was treated so well, it made me feel I wasn't a drain. I've never been made to feel this welcome in services (D-P). The art gallery is a friendlier world (D-C). It was better than the memory clinic because we did something – and we made something – together; it was an absolute gift (N-C). I was very conscious at the gallery that we were people working together and were treated as equals and not as a person with a memory problem but as two people with something to contribute, and that was a good thing (D-C). The artwork, both viewed and made, was described as an important part of the intervention: This is where it differs from some local project where people go and just produce things. I think the stimulus of seeing great art is most important (D-C). Talking about the artwork was a good way to draw them (PWD) into the atmosphere of the whole project; they were surprised by the artwork they saw and they produced (D-C). To be actually engaged in looking at art in a small group and being asked to comment about it, and be in your 70s or 80s, when let's face it, there isn't much society values you for, is very powerful (D-C). Alex does not remember the name of the gallery but he has remembered some of the paintings through their stories (N-C). The present study sought to understand how a more intensive structure (viewing and making art, two hours per week over eight weeks) contributed to outcomes. The responses here were some of the most impassioned with strong opinions expressed: It opened a door for me. I often feel locked out because my brain doesn't work well but not at the gallery. I became part of the paper (D-P). As the weeks went on he gradually got an understanding about why he was there and where he was. I think he did enjoy it towards the end because he kept asking about it (N-C). Eight weeks was just right. We came to all but one session and now we both can come back to the gallery and continue this (D-C).

## Discussion

This study developed and evaluated an intensive multisession art-viewing and art-making intervention for PWD and their carers within the community settings of a traditional and a contemporary art gallery. Although standardized measures did not demonstrate significant difference to carer burden, quality of life for the person with dementia or daily living activities, thematic analysis indicated potential benefits of this novel intervention. Methodological considerations The selection of validated and routinely used standardized measures, with a small sample size, can prove problematic in detecting change, particularly so for PWD (Banerjee et al., 2009). Taking this into consideration, we felt it essential that research questions incorporate quantitative and qualitative components. Possible reasons why standardised measures did not detect change may be related to the following: lack of measure specificity in relation to the type of intervention; the expressed preferences of participants to talk about their experiences in depth with another person rather than respond to a questionnaire and too small a sample size. It is also worth noting that although the results were not statistically significant, there was, moreover, no difference between the gallery sites. Without a control group, it is difficult to fully interpret this new finding on its own.

Qualitative results, however, lend support for the use of different types of art and art galleries for PWD – from traditional figurative to more abstract and conceptual – and while art viewing is not risk free, participants at both galleries enthusiastically responded to viewing the vastly different collections and were highly engaged in art-making sessions. Carer burden, an important aspect of dementia care, slightly decreased over this time period, yet this was not statistically significant. Although it is unknown whether a larger scale study may have been able to show significance, qualitative findings from the present study suggested high levels of carer enthusiasm, interest and impact across several themes. One explanation for the decrease in carer burden may have been the opportunity to socialize and take part in novel activities. Likewise, for the PWD, although quality of life did not show a measurable change on the DEMQOL-4, self reports and reports from carers indicated otherwise. Theoretical contribution and reflexive practice The constructionist museum A central tenet of the constructionist museum model is based on an interactive understanding between, and a shared experience with, the visitor, artwork and gallery educator (Hooper-Greenhill, 1997).

Within this study we attempted to adhere to this model of reflexive coconstructed learning in order not to pressure the PWD to rely on possibly hard-to-recall memories, nor to expect any participant to be knowledgeable about visual art, but rather to make use of the immediate gallery experience of viewing art and making art, as primary and fundamental. The experience was more than a 'good time out' (although that seems like a fine goal in itself) as was evident from the 'cognitive capacities' theme, which suggested that the constructionist approach helped to shape the social setting of the gallery experience and created an environment for people to engage cognitively, physically and emotionally, while allowing new learning to occur, supporting findings from other qualitative studies involving art making with PWD (Ullan et al., 2011).

## Social flexibility

This project was conceived and developed with the active and on-going involvement of gallery staff, researchers and stakeholders (previous gallery-based research participants). Decisions involving the intervention's design, recruitment and data collection were jointly negotiated. This resulted in a sense of shared responsibility for the project that incorporated ideas from all involved. Social flexibility, while creating uncertainty, also increases the potentiality for change and discovery (Bateson, 2000). It was decisively not a hierarchical approach but one that involved an iterative practice of reflexive discussion between staff at both the galleries, academics from two universities and stakeholders. Art galleries and museums can be, for some, intimidating places that require previous social and factual knowledge in order to engage effectively. Yet, the themes of 'social impact' and 'gallery setting' suggest that such cultural institutions, as communities of place and shared interest (Means & Evans, 2012) have potential utility for well-being enhancement as stimulating and empowering places that can foster social inclusion (Greaves & Farbus, 2006).

## Limitations and future research

The study was limited by the small sample size to which we attribute the non-significant quantitative results. A larger-scale study with a control group is needed to determine if factors such as the reduction found in the carer burden may become significant. In regard to qualitative findings, the results can only be assessed in the novel context of a group intervention within traditional and contemporary art-gallery settings. Future research needs to be undertaken at different types of galleries and museums in order to explore potential differences that might be discovered in these settings and at non-gallery settings offering similar programmes such as day activity facilities. Future research would benefit from audio or video analysis of sessions, which could be quantitatively and qualitatively analysed, in order to better understand the nuances and subtle changes that occur during the process of viewing and making art in a gallery setting. In qualitative analysis we chose to use only themes relevant to all participants. While this increased validity it also may have omitted information that may have influenced our interpretation. We did not, however, exclude any negative or critical comments from the results.

## Conclusions

Although it is difficult to draw generalisable conclusions from this study due to its small scale and lack of a nonintervention control group, qualitative results support the continuing development of art-gallery-based programmes that involve people with mild to moderate dementia and their carers. Such programmes appear to be able to foster social inclusion, enhance the caring relationship between the carers and PWD, support the personhood of PWD, stimulate cognitive processes of attention and concentration, be socially engaging, and have the potential to become a part of community-based, non-clinical dementia care policy across different countries (e.g. Living well with dementia (Department of Health, 2009)). In future research, while undertaking a randomised controlled trial (RCT) involving galleries/museums with an active control and usual care groups might be ideal, the problem of standardising the intervention over several different cultural institutions would be challenging if not impossible. An alternative approach could be to consider a natural experiment design, in different types of galleries and museums, that makes use of a range of existing programmes without requiring experimentally controlled conditions (Dunning, 2005).

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## Notes

1. The questions are available from the corresponding author.
2. P denotes person with dementia and C carer. All names are anonymous and some details altered to assure confidentiality.

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