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<http://dx.doi.org/10.1080/01924788.2020.1796475>

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What are the required elements needed to create an effective visual art intervention for people living with dementia? A systematic review.

## **Abstract**

Although there has been growing interest in visual art interventions for people with dementia, there is a restricted evidence base regarding their theoretical basis. To address this gap, this systematic literature review explored how and why visual art interventions work in dementia care. Common features of successful visual art interventions were identified, including: intervention 'dose', session content, participant choice, artistic ability, the role of the facilitator/therapist, group work, and setting. Understanding the mechanisms and/or processes of visual art interventions is important for future development, evaluation and implementation.

**Keywords:** dementia, visual arts, arts and related therapy, creativity, psychosocial interventions

## **Introduction**

Psychosocial interventions are activities and therapies that aim to support cognitive function, behavior, social development, mood and quality of life (Ionicioiu, David, & Szamosközi, 2014; Logsdon, Gibbons, McCurry, & Terri, 2002), and they make an essential contribution to the treatment and support of people living with dementia (Knapp et al., 2006; Oyebode & Parveen, 2019). The National Institute for Health and Clinical Excellence (NICE; 2006) guidelines on dementia recommend psychosocial interventions for treatment and management of the cognitive and non-cognitive symptoms that can be experienced in dementia. With the number of dementia cases expected to double every twenty years (World Alzheimer's Report, 2009), it

is vital that there is a strong evidence-base to support dementia services to provide a range of effective psychosocial interventions for those with dementia from diagnosis to end of life (Prince, Guerchet, & Prina, 2013). Evidence suggests that psychosocial interventions are most effective when they adopt a person-centered approach and target the individual, specific needs of people living with dementia (O'Connor, Ames, Gardner, & King, 2009; Sörensen, Pinquart, & Duberstein, 2002).

There is growing international recognition of the benefits of arts-based psychosocial interventions, with an emergent literature on the evidence of their benefits to people's health, well-being and quality of life (Roe et al., 2016). Engagement in cultural and creative arts by older people can increase morale and provide opportunities for social connection (Roe et al., 2016). A review completed by the Arts and Health Working Group (Department of Health, 2007) recommended that the arts are also integral to healthcare provision for people with dementia as they lead to a range of benefits, including enhanced self-esteem, confidence, cognition, quality of life and communication (Eekelaar, Camic, & Springham, 2012; Rentz, 2002; Rusted, Shepherd, & Waller, 2006). Visual art interventions, such as 'drawing, painting, sculpture, and other art forms' (British Association of Art Therapists; BAAT, 2014) are a widely utilized art-based psychosocial intervention format and are noted to be beneficial when they adopt a person-centered approach (Sauer, Fopma-Loy, Kinney, & Lokon, 2016). Interventions using visual arts can adopt a variety of formats, for example, as therapeutic visual art or as a visual art therapy. Art therapy has a specific therapeutic aim and is delivered by trained therapists (Fancourt, 2017) Conversely, therapeutic art making uses creative expression to bring pleasure, new knowledge and skills, and is a vehicle for self-expression. There is no overt emphasis on the uncovering and exploring of emotions as there is in art therapy (Collie, Botorff, & Long, 2006).

Visual art interventions in dementia care can be described as complex, due to their multifaceted nature, incorporating a range of components (Medical Research Council; MRC, 2006). These components often differ across research studies, and the variation of these elements can influence the outcomes. Subsequently, this results in challenges identifying the active and successful components that bring about any observed changes (MRC, 2006). Many issues surrounding complex interventions relate to the difficulty of standardizing an interventions design and delivery (Hawe, Shiell, Riley, & Gold, 2004; Rifkin, 2007). In order to develop an effective intervention, a good theoretical understanding about causal mechanisms for change is required, so that key components are included and weak links in the causal chain can be identified and strengthened (MRC, 2006). However, there is little robust empirical evidence of the underpinning active components and/or processes through which any positive impacts of visual art interventions for people with dementia may occur (Burnside, Knecht, Hopley, & Logsdon, 2015; de Medeiros & Basting, 2013; Zeilig et al., 2014). De Medeiros and Basting (2013) suggest a better understanding of arts interventions is required, in particular how and why they may result in positive impacts. The priority should not be to determine which art form is most effective, but rather, seek clarity around what exactly it is that makes the visual arts effective.

In response to this, Windle et al. (2017) aimed to explore how and why visual art interventions in dementia care may ‘work’ and subsequently lead to positive outcomes for people living with dementia. By conducting a qualitative exploration and a realist synthesis, Windle et al. (2017) reported that effective creative interventions can be understood through essential attributes of two key conditions: (1) a provocative and stimulating aesthetic experience, and (2) a dynamic and responsive artistic practice. The findings reported by Windle et al. (2017) provide a strong

foundation for what may ‘work’ in visual art interventions within dementia care. However, further research is required to refine and strengthen the evidence base for the arts in dementia care, as understanding the underpinning components of interventions are vital for development, evaluation and implementation (MRC, 2006). Thus, the current review aims to identify the active components or qualities of visual art interventions that are effective, acceptable and feasible. This will contribute to the evidence base and further advance visual art research within dementia care.

The questions this review aimed to answer were:

- (1) Are visual art interventions effective in improving quality of life, well-being or other psychosocial outcomes for people living with dementia?
- (2) What are the active components or qualities of effective, acceptable and feasible visual art interventions for people with dementia?
- (3) Are visual art interventions acceptable and feasible for people with dementia and those delivering the intervention?

This paper also includes recommendations and implications for improving future visual art interventions within dementia care. The review protocol is registered on PROSPERO number CRD42017075301.

## **Methods**

## *Search Strategy*

In May 2018, a systematic literature search was conducted in PsycINFO, PsycARTICLES, CINAHL (EbscoHost) and PubMed. These databases were selected based on those utilized for existing visual arts and dementia reviews (e.g. Beard, 2012; Cowl & Gaugler, 2012). In addition, they cover millions of research articles from thousands of social science and health-related journals including the fields of psychology and related disciplines, medicine, nursing and other allied health subjects, which are appropriate for the topic of arts as applied to supporting the social and psychological needs of people with a specific health condition, namely dementia. Keyword searches were employed with the terms ‘*art therap\**’, ‘*dementia*’, ‘*arts-based approaches*’ and ‘*creative arts*’, in combination with keywords indexing dementia and visual art interventions, for the years 1990 through to 2018. Reference lists of included papers and identified systematic reviews of art interventions were manually searched to identify any further studies. The full search terms and search combinations are available from the author on request.

*Inclusion criteria:* were that studies (a) involved group or individual art therapy provided by a Health and Care Professions Council registered art therapist or international equivalent; or involved visual art-based approaches led by other art professionals; (b) included participants with a diagnosis of dementia; known memory problems or known cognitive impairment deemed to be indicative of dementia. *Exclusion criteria:* were that studies (a) involved non-visual arts; (b) involved non-arts-based groups or activities, e.g. gardening and cooking; (c) involved visual arts adjunct to other interventions or services; (d) involved self-initiated arts, where activities were not supported by a professional; (e) did not specify or report on an outcome of the art intervention; (f) involved participants that had a co-diagnosis of other

conditions that may include symptoms such as memory problems or cognitive impairment. Lastly, although the search strategy was conducted for the years 1990 through to 2018, a pre-2000 exclusion criteria was subsequently added in order to focus on current evidence-based best practice. Those studies conducted pre-2000 had less of a person-centred perspective of people with dementia and thus, were not relevant to current practice.

All database hits (n = 1,588) were downloaded into Endnote software, and duplicate entries were removed leaving 1,346 individual papers (see Figure 1). Titles and abstracts of all articles were reviewed by the first author to identify potentially eligible articles for inclusion. Studies were excluded if they clearly did not meet the inclusion criteria. Papers excluded at this stage were independently reviewed by the second author to ensure consensus. Articles that appeared to meet the criteria, or where it was not feasible to determine this from the title/abstract, went forward to the full-text review. A full-text review was completed of these articles and those failing to meet inclusion criteria were excluded. Excluded and included papers were then reviewed by both the second and third author and consensus was reached between the three authors on final papers to be included in the review. Included studies are summarized in Table 1.

[Insert Figure 1 here]

## **Quality Assessment**

Version 11 of the Mixed Methods Appraisal Tool (MMAT; Pluye et al., 2011) was used to assess each study. Following the tool's guidance, studies meeting all of the assessment criteria scored 100%, and scores of less than 100% were awarded when fewer criteria had been met (Pluye et al., 2011) (see Table 1). The first and second authors independently assessed and rated the included studies and compared scores. There was independent agreement on 20 out of the 21 papers (95%) and disagreement on one item on the remaining paper which was resolved through discussion. Studies of lower quality were not excluded from the review, as the primary objective was to gain knowledge on active components of visual art interventions and highlight facilitating conditions and elements. Thus, a quality review was conducted to permit a description of quality of the evidence base within the analytic process.

## **Analysis**

The type of available evidence did not permit a meta-analysis to ascertain formal assessment of efficacy/effectiveness (as per the first research question) due to the heterogeneity of included studies and lack of methodological rigour. However, it was possible to assess the active components of interventions deemed to be effective by their authors. Therefore, a critical synthesis of the evidence was used, an adapted form of Critical Interpretative Synthesis (Dixon-Woods et al., 2006). This method allows for synthesis of diverse studies and is of particular use when the included studies utilize varying research methods. This flexible approach permits inclusion of qualitative, quantitative and mixed-methods studies. CIS is recommended when the aim of the review is to inform evidence-based practice and decision-making. This method comprises four steps for conducting analysis of existing literature:



- (1) Approaching the literature:** Extensive notetaking was made throughout the preliminary stages of analyzing the literature. Reflexivity was embedded within the analytic approach to challenge any pre-existing assumptions the authors may have held.
- (2) Systematically gathering the data:** Data was extracted from the papers using an extraction table, with a range of column headings to guide the data extraction process. These included research methodologies, intervention content, mode of delivery, frequency and duration, and outcomes of the intervention.
- (3) Interrogating the literature:** Literature was examined to inductively determine what meaningful interpretations could be made.
- (4) Interpreting the analysis into a synthesized form:** The information was organised and synthesized within separate common features, with a narrative description for each feature.

## Results

A total of 21 papers were included in the review, evaluating 21 different visual art interventions. Table 1 summarizes the characteristics of each study and Table 2 summarizes the outcome measures and key findings of each study. Across the included studies, three main outcomes were reported: (1) social inclusion and connectedness; (2) well-being, encompassing a range of areas such as pleasure, enjoyment, quality of life, self-esteem; (3) cognitive stimulation. Studies utilized a range of methods and data collection approaches including validated measures (e.g. Camic, Tischler, & Pearman, 2014; Eekelaar et al., 2012; Sauer et al., 2016; Young, Tischler, Hulbert, & Camic, 2015) and qualitative post-session questionnaires (e.g. Flatt, Liptak, Oakley, Gogan, Varner, & Lingler, 2015; Johnson, Culverwell, Hulbert, Robertson, & Camic, 2017). Behavioral observation was utilized across some studies to capture changes in well-being (e.g.

Kinney & Rentz, 2005; Sauer et al., 2016), and engagement (MacPherson, Bird, Anderson, Davis, & Blair, 2009).

[Insert Table 1 and Table 2 here]

Common features of successful visual arts interventions were identified across the papers including: (1) intervention ‘dose’; (2) session content; (3) participant choice; (4) artistic ability; (5) the role of the facilitator/therapist; (6) group work, peer support and socialization; (7) setting.

### ***Intervention Dose***

Intervention dose consisted of three components: session duration, frequency of engagement and overall duration of the intervention. The duration of session length differed across interventions (see Table 1). The most common length of individual sessions was either 60-minutes or two-hours. Six studies involved interventions that lasted 60-minutes (Gross, Danilova, Vandehey, & Diekhoff, 2015; MacPherson et al., 2009, Pöllänen & Hirsimäki, 2014; Rentz, 2002; Rusted et al., 2006; Sauer et al., 2016). Over half of these interventions (n = 4) reported statistically significant positive results for outcomes related to well-being, self-esteem, pleasure, engagement and enjoyment during the session. Rentz (2002) reported 80% of participants expressed pleasure during the sessions, MacPherson et al. (2008) observed people with dementia were engaged from the outset, and Pöllänen & Hirsimäki (2014) observed sustained attention and increased interaction. This indicates sessions of this length can engage participants and provide enjoyment.

For studies lasting two-hours (Camic, Baker, & Tischler, 2016; Camic et al., 2014; Young, Tischler, Hulbert, & Camic, 2015), they consisted of two separate activities which both lasted 60-minutes each. Camic et al. (2014) found no significant pre-post difference for outcomes including quality of life and activities of daily living for people with dementia. Camic et al. (2016) collected field notes and conducted interviews with participants, and found participants felt the art gallery was a physically valued place that provided intellectual stimulation and offered opportunities for social inclusion. Young et al. (2015) did not report any statistically significant findings on outcomes such as verbal fluency and memory in their study. Overall, as with sessions of 60-minutes duration, participants appeared to engage with and enjoy the activity. However, there is no evidence to support two-hour sessions with regard to outcomes such as self-esteem, sustained attention and overall well-being.

Of note is that in sessions lasting 60-minutes, participants commonly had more advanced dementia (Gross et al., 2015; Pöllänen & Hirsimäki, 2014; Rusted et al., 2006; Sauer et al., 2016), whereas in studies where the art intervention was 60+ minutes, participants had mild-moderate dementia (Camic et al., 2014; Camic et al., 2016; Eekelaar et al., 2012; Flatt et al., 2015; Johnson et al., 2017; Tietzen & Richards, 2017; Tietzen et al., 2018; Ullán et al., 2013; Young et al., 2015). Most authors, however, did not specify why they selected participants with specific and similar degrees of cognitive impairment. Johnson et al. (2017) stated participants had mild to moderate dementia, with preserved language to the extent they could engage in a group that relied on verbal communication skills. Similarly, Flatt et al. (2015) had no exclusion criteria in place but the samples were limited to those who were physically able to participate. There was a large difference in the frequency of engagement in the interventions (see Table 1), however, the most common frequency was one session a week (Brownell, 2008; Camic et al., 2014; Camic et al., 2016; Eekelaar et al., 2012; Hattori et al., 2011; Kinney & Rentz, 2005;

MacPherson et al., 2009; Rentz, 2002; Rusted et al., 2006; Sauer et al., 2016; Tietzen & Richards, 2017; Young et al., 2015). The majority of interventions that were delivered once a week produced positive results, including improved well-being (Kinney & Rentz, 2005; Sauer et al., 2016); intellectual stimulation (Camic et al., 2014) and social inclusion (Camic et al., 2016; MacPherson et al., 2009). The consistency of once per week may have facilitated these outcomes. All studies with quantitatively significant results were delivered once per week, and only one study activity exceeded 60 minutes (Tietzen et al., 2018).

Intervention duration ranged from a single session (Flatt et al., 2015) to one session a week for 40 weeks (Rusted et al., 2006). For the studies with clearly defined durations, the median intervention duration was 8-weeks. Studies where the intervention produced quantitatively significant results ranged from one weekly 1-hour session for ‘several sessions’ (Rentz, 2002) to one weekly 1-hour session over 40-weeks (Rusted et al., 2006). Although Rusted et al. (2006) found that mental acuity, sociability, calmness and physical engagement increased for the art therapy group, only limited participants had a full data set over 40-weeks. Of the 45 participants recruited, only 21 completed the full nine-months of group work, and the two follow-up sessions. Reasons for attrition were attributable to participants passing away or moving throughout the study period, and nine had incomplete data. This suggests it may be challenging to sustain attendance at an intervention over a time period of this length. However, this is perhaps unsurprising for this participant group. Similarly, Gross et al. (2015) stated their intervention period was a duration of 12-weeks, yet the average number of sessions attended was 7.8. Despite this, facilitator ratings of participant well-being during sessions showed statistically significant improvements from baseline measurements. However, the care facility staff ratings of well-being outside of the sessions did not show significant changes across the

12-weeks. This suggests any benefits for well-being of art interventions may not extend outside of the sessions.

Six interventions were delivered over a shorter period, with a maximum of six-weeks. Although the majority of these studies were qualitative, positive participant reactions were reported. For example, MacPherson et al. (2009) stated participants were engaged from the outset, and Walsh et al. (2011) found participants felt attending had enhanced their well-being. Furthermore, all studies reported that participants attended all of the available sessions. While the quality of this evidence is weak, it does suggest a longer intervention may be unnecessary for impacting well-being and may be a barrier to regular attendance.

In summary, sessions that are delivered once a week promotes consistency, and appears to lead to positive outcomes. One-hour sessions have been shown to engage participants, provide enjoyment, and enhance overall well-being. The duration length may not necessarily be an important element, as interventions of varying lengths have reported positive outcomes. The session content and other active ingredients may be more important to consider compared to the intervention duration.

### ***Session Content***

The visual art interventions encompassed: (1) art production only; (2) viewing and discussing artwork, or (3) a combination of the two. Six interventions evaluated a combination of art-viewing and art-making (Camic et al., 2014; Camic et al., 2016; Eekelaar et al., 2012; Flatt et al., 2015; Ullán et al., 2013; Young et al., 2015). Camic et al. (2014) used validated measures but did not find any significant outcomes, possibly due to the small sample size. Other studies

reported using validated measures of cognitive function (Eekelaar et al., 2012; Young et al., 2015), and tentatively suggested cognitive improvements. The remaining three studies analyzed interview data to evaluate participant responses to the sessions. Camic et al. (2016) reported the sessions had a positive impact on participants, enhancing social inclusion and intellectual stimulation, Flatt et al. (2015) indicated high levels of intervention satisfaction, and Ullán et al. (2013) reported participant interest in learning new things, and utilized observational data to indicate participants' high levels of engagement during the activity.

However, combining two components can make data vulnerable to a recency effect. Johnson et al. (2017) addressed the recency effect of combined art-viewing and object-handling within an intervention through counter-balancing the sessions so the order of the activities differed. Johnson et al. (2017) found well-being scores significantly increased from baseline, irrespective of order. Furthermore, this study was given a high-quality rating, providing confidence for the validity of its results. Participants seldom commented on their preference of individual elements in these interventions, but Flatt et al. (2015) reported that participants commented favorably about the art-making elements, indicating it was their favorite aspect of the programme. While the quality of this evidence is weak, it does suggest hands-on activities may help to create an engaging and cognitively stimulating environment (Flatt et al., 2015).

For studies that focused on art production alone, the results collated from the quantitative studies appear to support the potential benefits of visual arts on similar psychosocial outcomes. Rentz (2002) used an observational tool, and reported 83% of participants sustained attention, and weekly sessions contributed to individual's sense of well-being. Two studies compared their art intervention to a control group that consisted of a selection of recreational activities (Kinney & Rentz, 2005; Rusted et al., 2006). Rusted et al. (2006) reported significant

improvement in behavior, depression, mood, sociability and well-being, and Kinney and Rentz (2005) reported significant increases in well-being, a domain that encompassed interest, attention, pleasure, self-esteem and normalcy. Similarly, Sauer et al. (2016) used an observational tool, and indicated a higher intensity of well-being, engagement and pleasure in their person-centered visual art intervention, compared to traditional visual art activities. While the quality of this evidence is weak, there were common features in the content of these interventions, ensuring the sessions were pleasurable, failure-free, and taking into account the individual's needs and abilities. The participants were encouraged to express themselves, take pleasure in the creative process, and a variety of art materials were presented for use within sessions to stimulate different senses. Furthermore, the structure of these interventions followed similar parameters, with small groups participating in a one-hour visual art activity each week.

Three studies evaluated artistic programmes that gradually increased in complexity (Tietzen & Richards, 2017; Tietzen et al., 2018; Walsh et al., 2011). The aim of the former two studies was to create opportunities for participants to fully engage in learning, whilst preparing them to meet new challenges with a greater likelihood of success. Tietzen and Richards (2017) used observational data to report enhanced mood, self-esteem and social interaction. Subsequently, Tietzen et al. (2018) used standardized measures to compare this visual art intervention to a control group that involved art discussion and painting. Although they found no significant differences immediately post-intervention, significant improvements were found in caregiver burden and self-esteem for people with dementia at the six-month follow up. Tietzen et al. (2018) suggested this could be attributed to participants successfully meeting different challenges and viewing their artwork at home post-intervention had improved self-esteem. In a high-quality study, Walsh et al. (2011) collected observational data for a comparable

approach, and indicated enhanced well-being, showing promising results for increasing the novelty and challenge of the activities.

In summary, the content of the intervention is important, and should be designed to ensure the sessions are enjoyable, stimulating and meaningful. Incorporating a hands-on activity appears to be valuable and increasing the complexity each week has led to reported positive outcomes. Common features of an art-making component appear to underpin positive outcomes, such as creating a pleasurable and failure-free environment for the participants to express themselves. Furthermore, presenting a variety of art materials appeared to be promote autonomy and control during the sessions.

### ***Participant Choice***

Participant choice was either offered or not during the interventions and could relate to the type of media the participant used to make art and choice of activity or art output within the session. In a number of studies participants were encouraged to use different media and techniques (Brownell, 2008; Camic et al., 2016; Rusted et al., 2006; Sauer et al., 2016; Young et al., 2015). Freedom of choice was felt to enhance the individual's sense of independence, and to stimulate different senses and the person's curiosity (Brownell, 2008; Sauer et al., 2016). Two studies evaluated interventions that supported participant choice, compared to control groups that did not (Rusted et al., 2006; Sauer et al., 2016). Rusted et al. (2006) found positive effects on standardized measures of mental acuity, physical engagement, calmness and sociability in their art therapy group, compared to the control group involving a selection of recreational activities. Sauer et al. (2016) compared a person-centered visual art intervention; *Opening Minds through Art*, to traditional visual art activities that did not support participant choice. Sauer et al. (2016)



found significantly higher scores for *Opening Minds through Art* in well-being, engagement and pleasure, as well as significantly lower scores for disengagement. While the quality of this evidence is weak to moderate, it does suggest participant choice may be important for impacting well-being and engagement.

Within the majority of included studies, however, participants engaged in pre-determined, clearly defined art activities per session employing certain materials. While offering an abundance of materials, many studies focused on a specific material each week dependent on the planned art activity (Brownell, 2008; Camic et al., 2014; Camic et al., 2016; Tietzen & Richards, 2017; Tietzen et al., 2018; Walsh et al., 2011). Within these interventions, emphasis was placed on activities that were visually and tacitly stimulating as well as simplistic and familiar, to support a failure-free approach. Tietzen et al. (2018) compared their visual art intervention that focused on a certain material each week, to a control activity that involved painting only. At the six-month follow up, they reported significant improvements in caregiver burden and self-esteem for the people with dementia in the art intervention compared to the control group. Furthermore, Camic et al. (2014) reported that participants commented on the beneficial learning experience of the group when different materials and techniques were used each week, suggesting encouragement to try new materials was experienced positively. While not offering choice around materials or activities within their intervention, Walsh et al. (2011) gave participants opportunities to make choices during the structured activities, as they wished to incorporate ‘freedom to choose’. Choices included, “*From these paints, choose several of your favorite colors*”, and “*Can you choose a body from this workbook that shows what type of work or activity you like?*” (Walsh et al., 2011, p.67), indicating participant choice can be incorporated in different ways.

In comparison, some interventions just used one media type throughout (Esker & Ashton, 2013; Flatt et al., 2015; Gross et al., 2015; Ullán et al., 2013). For example, Esker and Ashton (2013) delivered a one-to-one art intervention, providing watercolors only, and participants were requested to paint scenes based on an allocated theme. Esker and Ashton (2013) observed passive behaviors such as decreased activity, loss of interest and apathy. Although participant choice was not emphasized in these interventions, they were designed to be failure-free, using good quality media and having an aim of maximizing the abilities of the participant. These studies reported positive psychological impacts on participants, including autonomy, mastery and pride (Flatt et al., 2015), and improved confidence in their own abilities (Camic et al., 2014; Ullán et al., 2013).

In summary, participant choice appears to be important to offer greater opportunities for engagement and pleasure than other traditional arts and crafts activities. Freedom of choice appears to enhance an individual's independence and learning experience. However, it is also important to combine participant choice with an enjoyable, failure-free environment, maximizing the participant's abilities and resulting in positive outcomes.

### ***Artistic Ability***

Artistic ability and prior exposure to or enjoyment of art was discussed across the majority of the studies. Studies suggested that participants did not require any previous artistic experience or artistic ability to participate ( $n = 20$ ), with the exception of one high-quality study that required a craft background (Pöllänen & Hirsimäki, 2014). In this study, the purpose was to explore the benefits of crafts as memory triggers for participants who had previous crafting experience. Pöllänen and Hirsimäki (2014) observed participants reactions in response to

different triggers. They found that multi-sensory triggers stimulated recall of forgotten, positive craft experiences, suggesting the benefits of reminiscence in visual art.

A number of studies included individuals regardless of their previous arts experience and ability, and subsequently reported positive outcomes. Rentz (2002) collected observational data and reported individuals worked with sustained attention, and had a pleasurable, sensory experience. Likewise, Kinney and Rentz (2005) reported their study included participants who had never had any artistic experience prior to their enrolment in the intervention and they demonstrated significantly higher levels of interest, sustained attention, pleasure, self-esteem and normalcy during the visual art sessions compared to the control, recreational activity. Camic et al. (2014) also reported that although 12 participants out of the 24 had visited an art gallery within the last five years, there was no requirement to have an interest or previous experience in visual art. Although Camic et al. (2014) found no significant pre-post difference on quantitative measures of quality of life and activities of daily living, post-intervention interviews showed participants felt more empowered, engaged, and socially included. While this evidence is weak to moderate, it does suggest positive outcomes can be obtained regardless of prior artistic experience and ability.

Flatt et al. (2015) noted that an existing interest in visual arts may be a limitation. They commented that this may have influenced their findings, such as the enjoyable aspects of the programme and participant's favorable opinions of the intervention. However, Camic et al. (2016) reported that when participants were asked during interviews, the majority did not express interest or participation in recent art activities. Camic et al. (2016) collected qualitative data through interviews and field notes and reported intellectual stimulation and social inclusion for participants with dementia and their caregivers. While the quality of this evidence

is moderate, it does suggest the appeal of, and benefits of visual art interventions may in fact be applicable to a wider population rather than restricted to those with a background in the arts.

In order to appeal to individuals despite their previous knowledge of, or interest in art, eight interventions sought to facilitate imaginative and emotional responses that focused on ‘being in the moment’, as opposed to recollection of memories or artistic abilities (Camic et al., 2014; Eekelaar et al., 2013; Flatt et al., 2015; Gross et al., 2014; Johnson et al., 2017; MacPherson et al., 2009; Ullán et al., 2013; Young et al., 2015). By doing so, the art-viewing activity allowed those with memory impairments to participate in a meaningful way. While the quality of this evidence is weak to moderate, it does suggest these strategies triggered learning new skills (Camic et al., 2014; Flatt et al., 2015; Ullán et al., 2013), knowledge seeking (Eekelaar et al., 2013), reminiscence (Flatt et al., 2015; Gross et al., 2014), and thinking and learning (MacPherson et al., 2009).

In summary, visual art interventions may initially appeal to those with prior interest or experience in the arts. However, the results suggest that benefits of such an intervention may in fact be applicable to a wider population. The findings indicate that creative activities can be valuable and can provide a unique and cultural experience for people with dementia, regardless of their artistic background.

### ***The Role of the Facilitator/Therapist***

The facilitators played an important role in all of the studies, regardless of their occupation (see Table 1). One key contextual feature underpinning good outcomes was that the facilitators were not only knowledgeable about artistic practice, but they also had knowledge and expertise of

the impact and experience of those living with dementia. This was often provided through specific training from a professional organization (e.g. Flatt et al., 2015; Gross et al., 2015; MacPherson et al., 2009), a psychiatrist/psychologist (Young et al., 2015) or members of the research team (e.g. Sauer et al., 2016). Alternatively, the facilitators had existing experience working with individuals with dementia (e.g. Camic et al., 2016; Pöllänen & Hirsimäki, 2014; Hattori et al., 2011; Rusted et al., 2006). The combination of artistic skill and dementia awareness appeared important for skilled facilitation, adopting a perspective of seeing the potential of what could be achieved and focusing on participant strengths (MacPherson et al., 2009; Sauer et al., 2016). Sauer et al. (2016) attributed the finding of greater intensity of engagement during intervention sessions, not only to the features of the programme, but also the training of the facilitators. Conversely, sessions delivered by high school art students (Brownell, 2008) did not find any statistical significance between the level of engagement of the participants in the control and the intervention group. Although the quality of this evidence is weak, it does appear that skilled facilitation is essential.

Skilled facilitation also required the facilitators to play an important role in keeping the activity interesting, and helping participants to feel comfortable, accepted and engaged (Flatt et al., 2015). People with dementia may feel anxious or overwhelmed when beginning a new intervention, especially if they have no previous artistic experience. The facilitator must be able to demonstrate techniques, provide encouragement and make suggestions as necessary. For example, the intervention delivered by Sauer et al. (2016) was designed so the facilitators encouraged and supported participants, ensuring they felt in control of the art-making process. Young et al. (2015) ensured the facilitator demonstrated different techniques to participants, and Esker and Ashton (2013) encouraged participants to go at a pace comfortable for them.

Lastly, consistency and predictability are important key elements. All studies (n = 21) were delivered by the same facilitators throughout the intervention. It is beneficial for the same facilitators to run the group to ensure the participants feel comfortable and have a sense of familiarity (Gross et al., 2015). This also gave participants ample opportunities for relationship building with those delivering the intervention (Sauer et al., 2016). By enhancing the participant/facilitator relationship, the facilitator is more likely to understand the needs of each individual, thus ensuring the intervention follows a person-centered approach. Sauer et al. (2016) suggested that the consistent facilitation could aid the development of a mutual relationship, in which the facilitator is able to interact in ways sustaining the selfhood of the participant. In summary, the skill set, and experience of the facilitator appears to be a key contextual feature underpinning good outcomes. The data suggests the attributes of experienced and responsive artistic practice underpins the success of a visual arts intervention.

### ***Group Work, Peer Support and Socialization***

Sessions were either delivered on a one-to-one basis, or in a group setting. Only two studies delivered their intervention on a one-to-one basis (Esker & Ashton, 2013; Walsh et al., 2011). The results found by Esker and Ashton (2013) evidence that their watercolor painting sessions were effective in reducing passive behaviors. However, it is difficult to claim whether the results are due to the art activity itself, or whether they were due to the 1:1 interaction. These were two factors attributable to reduced passive behaviors, and the study did not separate them. Similarly, Walsh et al. (2011) collected observational data and found their one-to-one creative bonding intervention displayed evidence of enhanced participant well-being. However, Walsh et al. (2011, p.69) discussed how “*the residents seemed to be thirsting for contact*”, perhaps

suggesting the benefits are attributable to the focused one-on-one interaction, rather than the art activity itself.

The remaining studies ( $n = 19$ ) used group-based interventions. Some groups included participant and caregiver dyads ( $n = 7$ ), and the remaining groups involved only people with dementia ( $n = 13$ ). With regards to the seven interventions that recruited participant dyads, only three reported quantitative results, and only one found significantly positive results (Tietzen et al., 2018). However, the qualitative data from five of these studies suggested that when a caregiver was present during the intervention, the caring relationship was enhanced (Camic et al., 2014; Camic et al., 2016; Eekelaar et al., 2012; Flatt et al., 2015; Johnson et al., 2017). Despite this, MacPherson et al. (2009) indicated the presence of a caregiver can negatively impact the person with dementia. Drawing on observational and interview data, they argued that in the presence of caregivers, participants appeared to lose confidence. When caregivers were absent, this enabled participants to interact with the facilitator and their peers, resulting in high levels of engagement and enjoyment. MacPherson et al. (2009) suggested participants with dementia can achieve more than expected if the intervention promotes independence, and this may be diminished if the participant does not have total control over their own artwork. Although the quality of this study is weak, it does suggest benefits of delivering visual art sessions to people with dementia without a caregiver being present.

Studies that did not recruit family caregivers often found significant quantitative improvements for participants (e.g. Gross et al., 2015; Hattori et al., 2011; Kinney & Rentz, 2005; Rusted et al., 2006; Sauer et al., 2016; Tietzen & Richards, 2017). Furthermore, Sudha et al. (2013) used standardized measures to assess social connectedness and although not statistically significant, found a positive trend towards improvement. During interviews, one participant reported:

*“Well, I’m usually a shy person [...] but it made me a less shy person”* (p.356), suggesting the benefits of a group format. Two qualitative studies reported that participants would often compliment their peers’ work, and these compliments were met with gratitude and a sense of pride (Rentz, 2002; Ullán et al., 2013). Through observations, Ullán et al. (2013) reported the intervention was seen to promote communication between participants, as it led to establishing spontaneous conversations about various topics. Likewise, MacPherson et al. (2009) reported social enjoyment came from the opportunity for discussion and a broadening of ideas that is likely to come from a group setting. Lastly, Rentz (2002) suggested that delivering an intervention to a group of people who have had similar experiences may be a comforting notion.

In summary, this data highlights the importance of providing stimulating activities that promote socialization, and opportunities for people with dementia to develop new relationships. The potential impact of caregiver absence is seldom investigated. Thus, it would be beneficial to develop interventions for people with dementia only, which promote participant autonomy, control and empowerment.

### ***Setting***

The setting varied significantly across all of the studies. Often, interventions were conducted in residential or nursing homes (Brownell, 2008; Esker & Ashton, 2013; Gross et al., 2015; Pöllänen & Hirsimäki, 2014; Sauer et al., 2016; Tietzen & Richards, 2017; Walsh et al., 2011), or in art galleries or museums (Camic et al., 2014; Camic et al., 2016; Eekelaar et al., 2012; Flatt et al., 2015; Johnson et al., 2017; MacPherson et al., 2009; Young et al., 2015). Generally, the public environments hosted individuals with milder dementia, whereas interventions in care facilities were delivered to those with moderate to advanced dementia.



Art galleries and museums were noted as a beneficial environment that could result in well-being benefits. Art galleries were typically seen as a physically valued place that enhanced intellectual stimulation and opportunities for social inclusion, as reported during interviews in qualitative studies (Camic et al., 2014; Camic et al., 2016; Eekelaar et al., 2012; MacPherson et al., 2009). It was also acknowledged that museum environments facilitated reminiscence and the opportunity to learn new skills (Flatt et al., 2015; Johnson et al., 2017). Camic et al. (2016) reported the benefits of the art gallery being open to the public during the intervention sessions, suggesting that this enhances a sense of normalcy, equality and personhood. The nature of the public setting also allowed for the general public to be involved with the group discussion. However, it is likely this may be anxiety provoking for individuals who are unfamiliar with the setting. Furthermore, if the intervention is delivered at a public venue, transportation may be an issue (Flatt et al., 2015). Transportation was not identified as a barrier if the intervention is delivered at a site where the participant resides, or at a day care center that provides transportation (e.g. Kinney & Rentz, 2005).

Although art galleries and museums are highlighted as special and valued places, it is feasible to create a place of value in a care facility. Creating places of value does not have to come at a high financial cost and could include setting aside a space for creative activities (Camic et al., 2016). Ullán et al. (2013) showed how the gallery experience could be taken into a care facility, with a museum collection being viewed digitally, followed by an art-making process. They observed high levels of engagement and participant satisfaction. While the quality of this evidence is moderate, it does suggest there are opportunities for effective visual art interventions to be delivered in a range of settings.

Although interventions delivered in care facilities did not report any advantages or disadvantages to the environment, Walsh et al. (2011) noted that care staff reported the artwork displayed in the residents' room facilitated new topics to discuss with one another. Additionally, the feeling of familiarity for participants is often sought for during the intervention (Gross et al., 2015), and delivering the intervention within the home or frequently attended day center may help to contribute to this sense of familiarity and facilitate feelings of comfort and safety from the beginning.

In summary, although art galleries and cultural venues have considerable potential for positive outcomes, there is little evidence of these sites being successfully used for people who may have more advanced dementia. There are also great opportunities for an effective visual art intervention to be delivered in other settings such as residential care or day care centers and indicates the potential for further development.

## **Discussion**

Despite a growing interest in visual arts in dementia care, there are important gaps in the evidence base, and noteworthy empirical weaknesses, presenting a gap in the knowledge about 'what works' in visual art interventions. Authors of previous reviews (e.g. Beard, 2012; Cowl & Gaugler, 2014; Young, Camic, & Tischler, 2016) have described research and drawn conclusions about the general effectiveness of art therapies in dementia care. However, no reviews have identified individual, active elements or processes of visual art interventions that appear to be effective for bringing about positive outcomes and leading to successful implementation. This paper has contributed to this gap by identifying the key features of visual art interventions, which appear to lead to positive outcomes. Due to the varying quality of the

included studies, the results must be treated with some caution. However, including a broad range of studies with varying methods, sample sizes and designs has permitted some common features to be identified across visual art interventions.

A common element in the studies involved the ‘dose’ of the intervention. Interventions were most likely to lead to a positive outcome if they were delivered weekly. Previous research has found that successive activity involvement is more beneficial than sporadic activity involvement (Beerens et al., 2016). Weekly participant is important, especially as new interventions rely on structure and repetition to help optimize and facilitate performance (Me de Werd, Rikkert, & Kessels, 2013). The majority of studies included in this review were smaller scale exploratory or pilot studies. Although a one-hour session is a small ‘dose’, the length of this session is ideal to test feasibility of implementing a psychosocial intervention (Rao et al., 2009). An hour can also incorporate introductions, the production of art, and an ending reserved for reflection, discussion and sharing (Pielech, Sieberg, & Simons, 2013). A longer session may be feasible for individuals with milder dementia, whereas shorter sessions may be necessary for those with more advanced dementia, to support individuals to concentrate and maintain attention. Thus, when designing an intervention, it may be beneficial to consider the individual abilities and impairments that can be supported and to decide on session duration based on the needs of the intended participants.

In addition, the review has identified that it is important for the content of a psychosocial intervention to be meaningful for people with dementia. The interventions that offered participant autonomy and choice reported positive results. Given the personal nature of the visual arts, this is an important but often overlooked consideration in research design. To take on intrinsic therapeutic value, participants should be allowed to make their own decisions and

create visual art free of restrictions. Thus, the goal throughout the intervention should be to provide participants with opportunities to engage in high-interest and enjoyable activities, tailored to them (Losinski, Hughey, & Maag, 2016).

The session structure was also a common element in the current review. Six studies incorporated combined activities of art-viewing and art-making. As these interventions combined two components, it is difficult to extricate whether the subjective benefits identified were due to the art-making, the art-viewing or a combination of both. Furthermore, combining two components can make data vulnerable to a recency effect, as the art-making component always followed the art-viewing activity. However, this was inevitable in all of the interventions that combined the two, as the art-making activity was based upon the prior art-viewing. Despite the order of activities being unavoidable, this may have affected results as participants may have felt more relaxed and confident in the art-making section, or conversely, may have led to boredom or fatigue effects. However, the findings reported by Johnson et al. (2017) suggest well-being significantly increased in both activities, irrespective of the order in which they were presented.

In a previous review, Cowl and Gaugler (2014) concluded that the mechanism for why creative artworks is still not completely known. Uncertainties exist around whether positive outcomes seen in some studies were due to creative engagement, or whether the results were due to a sense of belonging that emerged as a result of group work. For example, although Esker and Ashton (2013) found their art intervention was effective at reducing passivity, it is difficult to claim that the actual art activity itself resulted in engaged behavior. The intervention process involved both the art and a one-to-one interaction between the facilitator and participant, thus suggesting engagement could have resulted from the focused interaction.

However, this review has identified that the socializing aspects of art interventions were as important as the art activities themselves, especially as individuals with dementia are at risk of becoming socially isolated (Brataas, Bjugan, & Wille, 2010). For example, studies in the current review identified the benefits of peer support (e.g. Rentz, 2002; Ullán et al., 2013), social enjoyment (e.g. MacPherson et al., 2009), and social connectedness (Sudha et al., 2013). Visual art interventions thus have the potential to create a social network for individuals with dementia and improve their social environments. Engaging in a meaningful, social interaction with others plays a vital role in terms of positively influencing well-being and quality of life in people with dementia (McDermott et al., 2018; Woods, Aguirre, Spector, & Orrell, 2012). Furthermore, delivering sessions to groups has been argued to be essential for realization of the benefits of visual art interventions (Hanevik, Hestad, Lien, Teglbjaerg, & Danbolt, 2013; Potash, Ho, Chick, & Au Yeung, 2013). This indicates the group dynamic should be considered alongside the activities and materials used. This combination may help to facilitate successful uptake and implementation.

Another component to consider was participants previous artistic ability. The majority of studies in the current review suggested that participants do not require any previous artistic experience, or any existing artistic ability to participate in the sessions ( $n = 20$ ). However, Pöllänen and Hirsimäki (2014) did require the participants to have a crafts background due to the purpose of the study. Although the reported findings are not generalizable considering the small sample size of three participants, the principle could be translated into art interventions that do not require previous art experience through creating personalized art activities that combine reminiscence themes. Thus, tapping into remaining strengths, which could benefit individuals with a range of skills and abilities.

Another active component identified in this review was the role of the facilitator. It was clear in this review that a successful intervention did not require a trained art therapist. Rather, a skilled facilitator had knowledge in visual art practice, the impact of dementia, and was able to focus on participant strengths, rather than focusing on their deficiencies or symptoms associated with dementia, echoing the results found by Windle et al. (2017). Sauer et al. (2016) provided person-centred training to facilitators prior to intervention delivery, during which an understanding of Kitwood's (1997) Positive Person Work was fostered experientially. This type of communication between participants and facilitator has the potential to enable a transactional flow of positive interactions (Sauer et al., 2016), and appeared to lead to positive outcomes. Conversely, sessions delivered by high school art students (Brownell, 2008) suggested a lack of facilitation expertise and understanding of dementia. The students who delivered the intervention had not previously worked with people with dementia and did not have any training prior to the intervention. The findings reported by Brownell (2008) may be attributable to the absence of skilled facilitation.

Lastly, the current review could not identify any definitive distinctions between settings, or in terms of outcomes, attributable to the absence of evidence in the included studies. However, art museums and galleries were often considered a place of value. Despite this, there is restricted evidence of these venues being used for people who have more severe dementia, indicating a gap in the literature for future development and evaluation. In addition, creating a place of value does not necessarily have to come at a high financial cost and could include setting aside a quiet space where people with dementia can engage in creative activities. Although many of the included studies did not focus on the advantages and disadvantages of the environment, it is important to consider the setting and provide an adequate space to deliver an intervention (Rusted et al., 2006).

In examining the characteristics and qualities of intervention components that appear to lead to positive outcomes, a common thread of person-centeredness is present. Authors frequently designed their intervention to reflect a person-centered philosophy. For example, designing the activities so they promote the participants' sense of personal value and identity (Ullán et al., 2011); delivering activities while considering distinctive needs and abilities, thus ensuring each activity provided a pleasurable and failure-free session (Kinney & Rentz, 2005; Rentz, 2002); providing a programme that met the individual's psychological needs for attachment, comfort, inclusion, identity and occupation (Sauer et al., 2016), and creating opportunities for participants to engage fully in learning while preparing them to meet new challenges (Tietzen & Richards, 2017; Tietzen et al., 2018). These studies contribute to the overall discussion about the positive impact of person-centered, creative activities on people with dementia.

## **Limitations**

A limitation of this review is that it can only reflect the evidence from which it is derived. For the majority of studies included in this review, there was an inadequate clarification of study design and intervention description. A second limitation is that this review only included papers published in English, excluding non-English language studies that might have contributed further understanding. Furthermore, the search strategy did not involve hand-searching websites to identify grey literature on this topic. Therefore, the information extracted on each study may not include all of the published details on each intervention, since it relied on what was reported in the peer-reviewed journal papers located using the systematic search strategy. Lastly, a synthesis rather than meta-analysis was utilized to analyze the studies. A meta-analytic approach could not be utilized to conduct pooling of effect sizes due to the heterogeneity of interventions, outcomes and study design. Additionally, this review included

studies from multiple levels of evidence including low-quality evidence as the objective was to gain knowledge on the active components of visual art interventions. However, even low-quality evidence allowed for extraction of elements that appeared to be successful or favorable to the participants involved. This paper substantively contributes to understanding how and why visual art interventions achieve positive outcomes. This strengthens the evidence-base for the visual arts in dementia care, and subsequently provides a stronger foundation to inform future practice.

## **Implications**

For artists, practitioners, care staff and caregivers, this review offers a direction for evidence-based best practice when delivering visual art interventions for people with dementia. The knowledge of component parts can be used to inform the approach and content of visual art activities. For funders and commissioners, these elements and processes can form the foundation for service specification descriptions and art intervention outcomes and impacts for people with dementia. The description and exploration of the elements and processes in practice will bring greater clarity to proposal applications by helping to illustrate the effects that visual art can have for people with dementia. Lastly, for researchers, the findings demonstrate the complexity of the experience of engaging with visual art, showing the need for further exploration and robust investigation.



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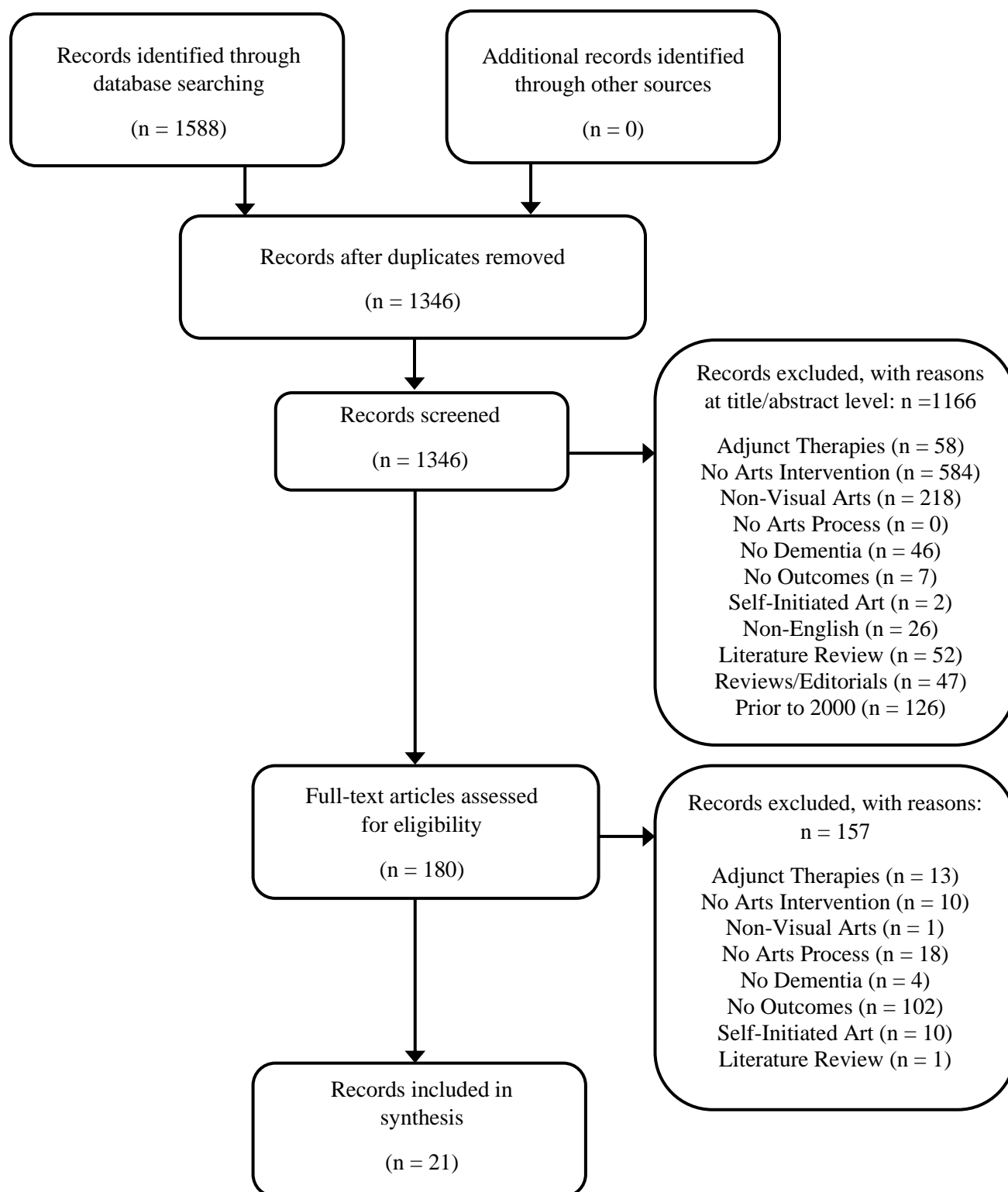
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**Figure 1.** Flow diagram of paper selection process

**Table 1.** Individual Study Characteristics*Pwd: People with dementia*

Author	Design	Country	N	Intervention Type	Facilitator Role	Intervention Length	Follow Up	Quality Score
Brownell (2008)	Quasi-experimental	USA	37 pwd, 5 students	Intergenerational art program	Senior art students	45 min, 1x/week, 5 months	0	25%
Camic et al. (2014)	Quasi-experimental; pre-post design	UK	13 pwd-carer pairs	Art viewing and art making	Artistic educator and professional artist	2hr, 1x/week, 8 weeks	2-3 weeks	50%
Camic et al. (2016)	Quasi-experimental	UK	12 pwd-carer pairs	Art viewing and art making	Artistic educator and professional artist	2hrs, 1x/week, 8 weeks	2-3weeks	50%
Eekelaar et al. (2012)	Quasi-experimental; pre-post design	UK	6 pwd-carer pairs	Art viewing and art making	Artistic educator and art therapist	90min, 1x/week, 3 weeks	4 weeks	25%
Esker and Ashton (2013)	Quasi-experimental	USA	3 pwd	Art activity with watercolors	Researcher	30 min, 5 times in a 7-day period, twice	None	50%
Flatt et al. (2015)	Quasi-experimental	USA	10 pwd-carer pairs	Art viewing and art making	Museum's education curators	3hrs, one session	None	25%
Gross et al. (2015)	Quasi-experimental	USA	76 pwd	Memories in Making® activities	Student interns	60 min, 1x/week, 12 weeks	None	50%
Hattori et al. (2011)	RCT	Japan	39 pwd	Art therapy	Speech therapists and designer/artist	45 min, 1x/week, 12 weeks	None	75%
Johnson et al. (2017)	Quasi-experimental crossover design	UK	36 pwd, 30 carers	Object handling and art viewing	Does not specify	45 min object handling, 45 min art viewing, 11 sessions	None	100%
Kinney and Rentz (2005)	Quasi-experimental	USA	12 pwd	Memories in Making® activities	Artist facilitators and activities staff	40 min, 1x/week, 8 weeks	None	0%



MacPherson et al. (2009)	Quasi-experimental	Australia	15 pwd, 6 staff	Artwork discussion	Artistic educators	45-60min, 1x/week, 6 weeks	2-3 weeks	25%
Pöllänen and Hirsimäki (2014)	Case study	Finland	3 pwd	Reminiscence sessions using crafts	Specialized nurse	55-65min, 3 sessions	None	100%
Rentz (2002)	Quasi-experimental	USA	41 pwd	Memories in Making® activities	Artist facilitators	60 min, 1x/week, several sessions	None	0%
Rusted et al. (2006)	RCT	UK	21 pwd	Art therapy	Art therapists	60 min, 1x/week, 40 weeks	1 and 3 months	50%
Sauer et al. (2016)	Quasi-experimental	USA	38 pwd	Opening minds through art (OMA)	Student volunteers	60min, 1x/week, 12 weeks	None	25%
Sudha et al. (2013)	Quasi-experimental	USA	60 pwd in intervention, 31 pwd in evaluation process	ARTmail exchange program	Site staff and student volunteers	10 weeks	None	50%
Tietzen and Richards (2017)	Quasi-experimental	USA	8 pwd	Art activities	Does not specify	90min, 1x/week, 8 weeks	None	50%
Tietzen et al. (2018)	RCT	USA	26 pwd-carer pairs	Art activities	Art education instructors	90min, 1x/week, 8 weeks	6 months	50%
Ullán et al. (2013)	Quasi-experimental	Spain	21 pwd	Contemporary artistic educational program	Artistic educators	60-90min, N of sessions ranged between 5 and 22	Focus groups post intervention – time of follow up NS	50%
Walsh et al. (2011)	Case Series	USA	4 pwd	Creative bonding intervention	Interventionist	30 min, 12 sessions total over 3 weeks	None	75%
Young et al. (2015)	Quasi-experimental	UK	13 pwd-carer pairs	Art viewing and art making	Artistic educators	2hrs, 1x/weekly, 8 weeks	None	100%

**Table 2.** Summary of outcome measures and key findings for each study*Pwd: People with dementia*

<b>Author and Year</b>	<b>Outcomes</b>	<b>Key Findings</b>
Brownell (2008)	Pwd: Engagement, mood, agitation	No significant difference in level of engagement, no significant difference in mood (with exception of time 3: residents not participating in arts project showed significantly more anxiety/fear), no significant difference for agitation (with exception of time 3: residents not participating in arts project displayed more verbal agitation).
Camic et al. (2014)	Social inclusion, carer burden, QoL	Thematic analysis revealed well-being benefits from both art gallery sites, which included positive social impact. Self-reports of enhanced cognition and improved QoL. There was a non-significant trend towards a reduction in carer burden over course of intervention.
Camic et al. (2016)	Intellectual stimulation, social inclusion	Art gallery environment is a physically valued site that provides intellectual stimulation and offers opportunities for social inclusion that can change how dementia is perceived.
Eekelaar et al. (2012)	Cognition	Episodic memory could be enhanced through aesthetic responses, effects on verbal fluency are ambiguous. Family caregivers reported pwd showed improved mood, confidence and reduced isolation.
Esker & Ashton (2013)	Passivity	Painting sessions found to be efficacious in reducing passive behaviors of pwd.
Flatt et al. (2015)	Subjective experiences	Three positive key themes identified from participation in activity: cognitive stimulation, social connections and self-esteem.
Gross et al. (2015)	Well-being	Quantitative evidence for effectiveness of programme is unclear, but anecdotal observations indicate benefits for pwd.
Hattori et al. (2011)	Cognition, mood, QoL, apathy, caregiver burden	Significant improvement in the Apathy Scale in art therapy group, and in QoL. Significant improvement in the MMSE score in the calculation group. No significant differences in the other items between two groups.
Johnson et al. (2017)	Well-being	Well-being significantly increased during session, and evaluation questionnaire indicated experiences of sessions were positive.
Kinney & Rentz (2005)	Well-being	Participants demonstrated significant positive interest, sustained attention, pleasure, self-esteem and normalcy during the programme. No differences in negative affect or sadness between two activities.
MacPherson et al. (2009)	Engagement	Participants engaged from the beginning and maintained engagement. Improvement in confidence and social process.
Pöllänen and Hirsimäki (2014)	Memory	Multisensory triggers stimulated recall of forgotten, positive craft experiences.
Rentz (2002)	Well-being, affect, self-esteem	Preliminary data suggests participation in weekly sessions contributed to sense of well-being, enhanced self-esteem and pleasure

Rusted et al. (2006)	Cognition, behavior, depression, sociability, well-being, mood	Positive impact on behavior, depression, sociability, well-being and mood.
Sauer et al. (2016)	Well-being and ill-being	High percentage of moderate or high intensities of well-being during OMA sessions with little to no ill-being. Significantly higher scores for OMA in the domain of engagement and pleasure, as well as significantly lower intensity scores for disengagement.
Sudha et al. (2013)	Mood, social connectedness	Findings suggest improved mood from baseline to end point.
Tietzen & Richards (2017)	QoL, self-esteem, mood	Five of 8 participants increased QoL, 1 remained the same and 2 slightly decreased. Six of 8 participants showed improvement in self-esteem, 1 showed no improvement and 1 showed decline. Five of 8 activities improved mood.
Tietzen et al. (2018)	QoL, self-esteem, ADL	Six-month experimental group's post-test results showed significantly improved QoL, self-esteem and ADL compared to control group.
Ullán et al. (2013)	Subjective experience	Observed high levels of commitment to activity, and commitment in learning new things. Observed participant satisfaction during creative process.
Walsh et al. (2011)	Self-transcendence, well-being	Six themes emerged during analysis: trusting, thirsting, following, connecting, choosing and reminiscing. Findings suggest self-transcendence and well-being enhanced.
Young et al. (2015)	Cognition	Intervention did not negatively affect cognitive ability in dimensions measured, but any increases in semantic clustering and lifetime memory were not linear in nature and there was variation between sessions.