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## Exploring the Effects of Visual and Literary Arts Interventions on Psychosocial Well-Being of Diverse Older Adults: A Mixed Methods Pilot Study

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### Abstract

**Background:** Engagement in the creative arts may have health benefits for older adults. Most research has focused on music and dance; less is known about the benefits of other arts interventions. The purpose of this study was to examine the effects of visual (ceramics and collage) and literary arts (storytelling and writing) on well-being of older adults.

**Methods.**—We used mixed methods to examine the effects of a 12-week visual or literary arts intervention on well-being. Adults age 55 and over from four housing sites were assigned to start an intervention immediately (intervention) or wait 12 weeks (controls). The study included pre/post-test measures of well-being and post-intervention focus groups to query perceived benefits.

**Results:** Compared to controls, participants in the ceramics intervention had significant improvements in interest in life and mastery, while no changes were observed after the storytelling intervention. Seven psychosocial benefits were identified from all four interventions during focus groups.

**Conclusions:** Participation in visual and literary arts for older adults was associated with well-being benefits, which shared some similarities across arts media.

### Keywords

visual arts; literary arts; well-being; mixed methods

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## INTRODUCTION

An increasing number of studies document that engaging in the participatory arts (e.g., music, dance, theater) can help promote health and well-being for adults age 65 and over. Identifying novel strategies to promote health is important because the number of older adults is rapidly increasing in most countries across the world. In 2019, there were 703 million people age 65 years and over across the world, and this number is expected to grow to 1.5 billion by 2050 (United Nations Department of Economic and Social Affairs, 2019). Two recent reviews, mostly of cross-sectional studies, found that participating in the arts is associated with multiple, positive health benefits for older adults (Fraser et al., 2015; T. Noice, Noice, & Kramer, 2014). Stronger evidence comes from longitudinal studies examining the effects of participation in arts interventions over time. For example, several studies have found that older adults who participate in theater, dance, and community choir interventions experience improvements in psychosocial, cognitive, and physical domains of function, which can differ by the type of arts intervention (Johnson et al., 2018; Kattenstroth, Kalisch, Holt, Tegenthoff, & Dinse, 2013; H Noice & Noice, 2009; H. Noice, Noice, & Staines, 2004; Trombetti et al., 2010). Of these domains, psychosocial benefits are the most commonly studied, and improvements have been found in interest in life, quality of life, self-efficacy, and morale as well as reductions in loneliness, anxiety, and depressive symptoms.

Most research to date has focused on music, dance, and theater interventions; less is known about the benefits of other types of arts interventions, such as visual (e.g., drawing) and literary arts (e.g., creative writing). A few qualitative studies involving older adults who participated in visual arts interventions (e.g., painting, pottery, and textile arts) reported multiple benefits, such as experiencing a sense of achievement, enjoyment, improved social connections, meaning in life, motivation, and distraction from everyday problems (Fisher & Specht, 1999; Greer, Fleuriet, & Cantu, 2013; Reynolds, 2010). In one randomized trial, older Korean-Americans who participated in a four week (three times a week) visual arts intervention (i.e., painting and clay art) had significant improvements in self-esteem and reductions in anxiety and negative affect, compared to controls (Kim, 2013). Two randomized longitudinal studies involving expressive writing interventions for older adults found a reduction in depressive symptoms and improvements in self-concept (Chippendale & Bear-Lehman, 2012; de Medeiros, Mosby, Hanley, Pedraza, & Brandt, 2011). Another study focused on the psychosocial benefits of life review writing among older adults (Robinson & Murphy-Nugen, 2018). While evidence is accumulating that engaging in visual arts and literary arts interventions may promote well-being for older adults, additional research should further explore potential effects on well-being to better understand the mechanisms of action. In addition, we were interested in understanding how older adults identified with the arts. Our interest in this concept built from prior studies that documented a link between well-being and identity, particularly in underrepresented populations (Lewis, Boutrin, Dalrymple, & McNeill, 2018; Wanka, 2018) and other studies that focus on the arts and identity, often in the context of mental health conditions (Reynolds & Vivat, 2010; Stickle, 2010).

## METHODS

The purpose of this study was to explore the potential benefits of participating in a 12-week visual or literary arts intervention designed for older adults and determine the feasibility and acceptability of delivering such programs in senior housing settings. Our mixed methods study included a structured assessment (pre/post-test measures of psychosocial well-being) and semi-structured focus groups about the perceived benefits of the interventions. We hypothesized that participation in the 12-week interventions would be associated with improvements in psychosocial well-being.

We began by developing a preliminary conceptual framework of how these types of arts-based programs might affect psychosocial wellbeing. This framework was based on methods described in the National Endowment for the Arts guide (Chapline & Johnson, 2016) and our other studies (Johnson et al., 2015; Johnson et al., 2020). Psychosocial engagement, defined as participating in psychologically meaningful activities in a social context, is one hypothesized pathway by which the visual and literary arts interventions might influence well-being. For example, we propose that providing opportunities to take on new challenges and master new skills with practice over time promotes self-efficacy. Table 1 summarizes the preliminary framework used to guide this study.

### Community Partners and Settings

The project was a partnership between the University of California San Francisco and a community-based organization that provides a variety of classes to older adults. EngAGE, Inc. embraces a whole-person approach to creative and healthy aging by providing arts, wellness, lifelong learning, and intergenerational programs to older adults living in 36 affordable apartment communities in California. For this study, we selected four EngAGE, Inc. affordable senior housing sites in southern California based on their readiness to participate in a research study and geographic location (for ease of study implementation). These housing sites were available to persons age 55 and over; three were classified as 100% affordable housing, and the fourth was 20% affordable housing.

### Arts Interventions

The study explored two types of visual arts interventions and two types of literary arts interventions from the array of programs offered by EngAGE, Inc. We describe these, the interventionists, and the format of the sessions. Each of the four interventions was documented in a manual prior to starting the study to standardize the intervention according to the EngAGE, Inc. basic class structure and to document intervention content.

**Visual Arts: Ceramics and Collage.**—Two EngAGE, Inc. visual arts interventions were used in the current study: ceramics and collage. *Ceramics* involved working with clay using different techniques of building, glazing, and firing the work. Techniques in hand building, kiln firing and glazing were explored. Participants created works that reflected their personal interpretations of thematic elements derived through the group process. *Collage* involved creating a collage and mixed media painting using family photographs that depicted a particular time in their lives. Participants learned how to select materials,

locate and prepare images, and layer pieces. Participants were guided through the process of color selection and overall design composition. They explored several painting and collage techniques, incorporating these techniques into their own original works.

**Literary Arts: Creative Writing and Storytelling.**—Two EngAGE, Inc. literary arts interventions were also used for the study: creative writing and storytelling. *Creative writing* involved learning about and practicing writing in various literary genre, such fiction, poetry, and essays. Participants shared their writings in the group and gave and received feedback on each other's writing. They also discussed their favorite literary works from each genre. *Storytelling* included learning basic storytelling skills, sharing and listening to stories from each other's lives, writing the stories, giving and receiving feedback, editing the work, and performing the stories.

**Intervention format.**—Ninety-minute classes were held once a week for 12 weeks at each site. Classes followed the EngAGE, Inc. basic class structure that includes: opening/warm-up (intention-setting), class activity, group feedback, reflection (goal setting), and a ritual close (acknowledging the work done). All interventions concluded with a culminating event, including exhibitions for the visual art classes and a reading performance or publication of the literary works.

**Interventionists.**—We identified four professional teaching artists from southern California (two were visual artists and two were literary artists). These four teaching artists delivered one of the four arts interventions. All teaching artists completed training about the study protocol using the program manual; this training emphasized the importance of maintaining the overall structure and class content.

## Study Design

Overall, our mixed methods study included a structured assessment (pre-post scores on measures of psychosocial well-being) and semi-structured focus groups about the perceived benefits of the programs. Participants were asked to complete the baseline and 12-week survey. We examined potential changes in well-being outcomes by comparing both of the immediate-start groups (one visual: ceramics and one literary arts: creative writing) and the delayed start groups. For this, we combined the two delayed-start groups into one control group. We examined feasibility and acceptability in the two immediate-start intervention groups only. We explored potential perceived benefits of participating in the intervention using focus groups at all four sites after completion of the intervention at each site. Thus, focus groups were held after 12 weeks for the immediate-start groups, and after 24 weeks for the delayed-start control groups. Human subjects approval was obtained from the University of California San Francisco Committee on Human Research.

## Participants and Recruitment Procedures

Inclusion criteria were age 55 and over, living in one of the four affordable housing sites, having sufficient visual and hearing acuity (with assistive devices), and being fluent in English (self-report of fairly well to very well). Exclusion criteria included having a

self-reported diagnosis of dementia, a serious medical condition that would interfere with participation in the study, or plans to move out of the area within six months.

Flyers about the study were posted at all four sites for two months, and prospective participants were invited to attend informational presentations about the study. Those who were interested in the study were asked to complete the screening questions and, if they met inclusion criteria, a consent form.

At baseline, we collected demographic data for descriptive purposes: age, sex, race/ethnicity, education (years), marital status, living arrangement (alone, with others), prior experience with visual and literary arts (years), and length of time (years) living at current residence. A checklist of 12 standard chronic medical conditions (e.g., diabetes, hypertension) and a single question each about overall health and well-being also were collected.

### Methods for Exploring Feasibility and Acceptability

We collected feasibility and acceptability metrics regarding adherence of participants to the intervention, fidelity of the teaching artists to the intervention (as described in the program manual), and satisfaction of participants with classes. *Adherence* of participants to the intervention (feasibility) was examined by recording attendance at each class session. *Fidelity* of implementation of the program (acceptability) at each site was evaluated (by author J.C) at one time point (around 3 weeks after start of program) using a 16-item survey with a 4-point scale, which was adapted from a community choir intervention study (Johnson et al., 2015). The fidelity survey focused on: (a) implementation of the key components of each program, (b) leadership/communication skills, and (c) artistic skills.

After the end of immediate start groups, participants were asked to complete a satisfaction survey. One question asked them to rate the overall quality of the class on a 5-point scale (poor to excellent). They were then asked their agreement with several statements on a 5-point scale (not at all true to very true): I would recommend this class to others; I learned new skills in the class; The class was fun; The class was frustrating.

### Methods for Evaluating Changes in Well-being

We used both quantitative (i.e., survey) and qualitative (i.e., focus groups) methods to explore potential changes in well-being. All assessments were conducted in person at each of the sites.

**Survey Measures of Well-being.**—Six measures of well-being were administered at baseline and after 12 weeks (after completing the program for the intervention groups and after completing the 12-week delay for the controls).

**Interest in Life.**—The self-report short-form of the National Institutes of Health (NIH) Toolbox Apathy scale (Salsman et al., 2013) was used to assess interest in life. Items query the frequency the participant felt interested in things, got things done, saw a job through, got things started on one's own, did interesting things, and was motivated. The scale yields a total score with higher scores suggesting more interest in life (or less apathy).

**Personal Growth.**—Self-perception of personal growth was measured using a 7-item scale from the Health and Retirement Study (Psychosocial and Lifestyle Questionnaire) (Smith et al., 2013). Participants were asked to rate topics related to personal growth, such as self-development, expanding horizons, trying new things, and learning new things. Higher scores suggest more personal growth.

**Perceived Mastery.**—Mastery was measured using a 5-item scale from the Health and Retirement Study (Psychosocial and Lifestyle Questionnaire) (Smith et al., 2013) based on Pearlin and colleagues (Pearlin, Nguyen, Schieman, & Milkie, 2007). Items focused on doing things one wants to do and finding ways to get things done. Higher scores suggest higher perceptions of mastery.

**Loneliness.**—The self-report short form of the NIH Toolbox Loneliness scale (Salsman et al., 2013) was used to assess feelings of loneliness. It was previously used in a randomized trial of a choir intervention for older adults (Johnson et al., 2018). The scale yields a total score with higher scores suggesting more loneliness.

**General Belongingness.**—A sense of belonging was measured by the 12-item self-report General Belongingness Scale (Malone, Pillow, & Osman, 2012). Items focus on concepts of acceptance, connection with others, bonds with family or friends, and a sense of belonging. Higher scores suggest a greater sense of belonging.

**Perceived Neighborhood Cohesion.**—The perception of how connected individuals feel with their neighborhood was assessed using 5-item scale that measured self-perception of neighborhood social cohesion (Mendes de Leon et al., 2009). Items focus on perceptions about how people in the neighborhood are trusted, get along, and willingness to help. Higher scores suggest higher social cohesion of the neighborhood.

**Qualitative Methods to Evaluate Perceived Changes in Well-being.**—To explore potential perceived benefits of participation in the intervention not tapped by the survey measures, focus groups were conducted on completion of all four interventions (including the delayed-start controls). Following the post-intervention assessment, we sequentially invited up to 10 participants at each site to participate in a focus group to provide their perspectives on the intervention at their site; thus, there was one focus group for each intervention group.

Using a semi-structured interview guide, an experienced qualitative interviewer led a focus group at each of the four sites. Initial open-ended questions and follow-up probes were developed to investigate general perceived benefits and specific perceived benefits relating to well-being. Focus groups were audio recorded and transcribed verbatim.

## Data Analyses

We describe our methods of analysis for the research questions: Does participation in a 12-week visual or literary arts intervention reduce feelings of loneliness and increase personal growth, a sense of mastery, and identity with the arts?

**Statistical Methods for Quantitative Data.**—To assess changes in well-being at 12 weeks, we compared well-being scores across three groups: two intervention groups and the combined control groups. Note that we combined the two delayed control groups for purposes of analysis. Descriptive statistics, means and standard deviations for continuous variables and frequencies and percents for categorical variables, were generated. We assessed each continuous outcome as a separate model using a mixed model with random intercepts. The mixed model was used to account for clustering across time points (Laird & Ware, 1982). For each model, we first examined each demographic variable in a bivariate model that included site. We then adjusted each model with the demographic variables that were statistically significant to account for potential confounding. In addition, we performed a sensitivity analysis (per-protocol analysis) that removed participants responses who were assigned to the respective intervention but never participated, even if they completed the surveys. For the outcome, perceived mastery, the following variables were statistically significant and then controlled for in the final multivariable model: time in residence, general health and quality of life. For the outcome, general belongingness, general health and quality of life were statistically significant and then controlled for in the final model. For the outcome, interest in life, we controlled for general health and ethnicity, and for the outcome, loneliness, we controlled for age, living arrangement, general health and quality of life. Finally, for personal growth the following variables were statistically significant in the bivariate models, we therefore controlled for them in the final multivariable model: general health, quality of life and education. T-tests using estimate statement in SAS proc mixed were used to compare sites. The adjusted estimates that controlled for potential confounders and associated 95% confidence intervals were presented. We did not account for multiple testing due to exploratory pilot data. Two-sided p-values less than 0.05 were considered statistically significant. SAS v.9.4 was used for the analyses.

**Methods for Qualitative Analysis.**—We completed a content analysis of the focus group transcripts using ATLAS.ti software to identify codes and themes (Miles, Huberman, & Saldana, 2020). First, codes were created to describe any perceived benefits of each intervention separately. Two coders, who were not involved in data collection, independently reviewed the transcripts and reconciled differences by discussion until consensus was reached (Miles et al., 2020). Next, axial coding and analytical memos were used to identify overarching themes for each intervention separately. Thematic saturation was reached once no new codes or themes emerged (Charmaz, 2006). Themes that reached saturation for each intervention were entered into a spreadsheet and compared across interventions.

## RESULTS

### Participants

Study recruitment took place over 6 weeks (June – July 2018). We enrolled 69 participants, and 60 completed the 12-week assessment (study retention of 87%). Table 1 summarizes the demographic characteristics of participants. The sample included 60 older adults with a mean age of 70 years (SD: 8); 84% were women. Sixty-five percent of the sample were black/African American, 23% white, and 8% were Latino/Hispanic.

The nine participants who did not complete the study had similar demographics to the participants who completed the study (mean age = 69.7 years; 89% women; 67% non-white; mean education = 13.3 years; and mean time in residence = 3.1 years). Three each dropped out of the ceramics, creative writing, and storytelling interventions.

### Feasibility and Acceptability

Participants in the ceramics class attended 77% of the sessions, and those in the creative writing attended 56% of the sessions. Fidelity checks (direct observation) at the fourth session for creative writing and the second session for ceramics found that expectations were met for a mean of 5 out of 6 artistic skill items, 9 out of 9 leadership/communication items, and 4.5 out of 6 intervention program component items. In terms of satisfaction with the interventions, 86% of participants in the ceramics and creative writing programs rated the quality as good to excellent. For the other satisfaction questions, we calculated the percent who report ratings of true or very true. Thus, 89% indicated that they would recommend the class to others; 74% indicated that they learned something new; 93% reported that the class was fun; and 81% reported that the class was “not at all” frustrating.

### Survey Measures of Well-Being

Table 3 summarizes the results on the survey measures. After the 12-week ceramics intervention, compared to the delayed start controls, there were statistically significant improvements in perceived mastery (adjusted difference 0.5, 95% CI: 0.2 to 0.7,  $p = 0.003$ ) and interest in life (adjusted difference: 0.3 95% CI: 0.1 to 0.6,  $p = 0.007$ ), and there was an improvement in general belongingness (adjusted difference: 0.2, 95% CI: 0.1 to -0.0,  $p = 0.11$ ), but this result did not reach statistical significance. Other well-being outcomes (i.e., loneliness: (adjusted difference: 0.0, 95% CI: -0.2 to 0.2,  $p=0.99$ ) personal growth (0.0, 95% CI: -0.2 to 0.2,  $p=0.72$ ), and neighborhood cohesion (0.0, 95% CI: -0.5 to 0.4,  $p=0.8$ ) did not change for participants in the ceramics intervention. There were no statistically significant improvements on the well-being outcomes after the 12-week creative writing intervention. While there was an improvement in interest in life (0.2, 95% CI: -0.1 to 0.48,  $p = 0.11$ ), it did not reach statistical significance.

### Perceived Benefits of Program

Qualitative data are available from the focus groups held after all four interventions. Participants in the focus groups included 8 of the 17 who completed the ceramics program, 6 of the 12 from the creative writing, and 9 of the 18 from the collage program; only one of the 13 who completed the storytelling intervention participated in the focus group.

Participants in the focus groups identified multiple psychosocial and cognitive benefits. The majority of benefits were identified in both types of arts programs (i.e., visual and literary arts), but a few benefits were specific to one arts medium. Below, we report the perceived benefits identified in all four programs. No negative comments were offered.

**Psychosocial Benefits.**—Multiple psychosocial benefits were identified by participants in all of the programs. Seven psychosocial benefits were identified in all four interventions,



including emotional well-being, social network and social support, interest in life / purpose, self-efficacy, and artistic identify.

**Emotional Well-Being.**—Participants in all four programs made multiple comments about how participating in both the visual and literary arts classes made them “feel good”. They described how the classes provided enjoyment and facilitated happiness and laughter, which contributed to their overall sense of emotional well-being. One participant in the collage class remarked, “Everybody was laughing and talking and mingling with each other, passing back and forth the colored wax, the (paint) colors, and different things.” A similar feeling was noticed in the creative writing class: “We enjoyed each other, and we fed off each other. Things that were said made us laugh.”

**Social Network and Social Support.**—Another overarching theme in all four classes related to social support. The older adults in the classes described connecting and strengthening bonds with others in addition to providing and receiving support. Some participants made new friends. One participant in the collage class remarked, “When we got to discuss, in depth the things that was happening on our collage, I think that helped us understand each other, to know each other better and to become closer to each other.” Another in the same focus group added, “We encourage each other.” A participant in the storytelling class shared, “I learned about the other ladies here, about their life.”, and another person in the ceramics class noted, “I gained a new friend.” Thus, the arts programs provided a context in which to meet new people and offered opportunities to develop meaningful relationships and provide support.

**Interest in Life / Purpose.**—The arts classes also provided somewhere to go and something meaningful to do. For example, one participant in the creative writing class described how the class motivated her in the morning saying, “I enjoyed just getting up and putting on my clothes and saying I’m just going to talk with the ladies and see what’s going on in their lives.” Another participant in the same class added, “I could find myself finishing what I was going to do so I could make it back here - to make sure that I made the class. So it put a little fire up under me to complete something. So that’s one of the changes.” Another participant in the collage class remarked, “I really did enjoy it, and I looked forward to going to the class every Tuesday.” A participant in the ceramics class talked about the interest in life saying, I never know what’s going to happen next. It’s exciting that way.”

**Self-efficacy.**—The visual and literary arts classes also helped improve self-efficacy, by building confidence in own abilities, feelings of accomplishment and pride, and personal growth. In the collage class, one participant remarked, “In the end, it turned out really good. And so there’s no limit to what we can do.” Another participant in the same focus group added, “I go to the museum and (look at) some of the artwork; ours is better than theirs.” Another participant in the ceramics class shared, “I felt really good because people told me how much they admired the work that I had done.” Fewer comments about building self-esteem were shared in the literary arts classes, but one participant in the creative writing class shared, “I do consider myself a pretty good writer.”

**Artistic Identity.**—When asked how they would describe from both visual and literary arts classes shared a range of responses. Those in the ceramics class called themselves “artists in progress” or “learning artists”. Participants in the collage class commented on their identity in a different way. One noted, “I learned I had talent.”, while another remarked, “I’m very artistic.” After some laughter, another participant remarked, “I’m no painter, but this came out terrific.” Participants in the creative writing class had yet a different framing. They called themselves “creative novices” while enjoying “being creative”. One participant who enjoyed talking remarked, “I guess I’m a writer too.” after taking the creative writing class.

**Cognitive Benefits.**—Two benefits in the cognitive domain were also found: learning new skills and general cognitive stimulation.

**Learning New Skills.**—Participants in both the visual and literary arts classes described the learning process as a central feature of the sessions. One participant in the collage class described the creative process of learning a new skill that resulted in something aesthetically beautiful saying, “I learned how to mix colors, learned how you can create and make something look like a million dollars out of nothing.” A participant in the storytelling class also noted the amount of new learning: “I found that I was learning something new every day.” A participant in the ceramics class linked learning something new with personal growth saying, “I feel like every time you learn something new, it certainly helps your growth.”

**Cognitive Stimulation.**—The visual and literary arts classes also provided an opportunity for cognitive stimulation in challenging ways, which were particularly common in the literary arts classes. One person in the creative writing class shared, “I just thought it was challenging. Like everyone said, you had no idea what was going to be on the table the day that you come in. Another participant in the ceramics class noted, “I want to make more (ceramics). I like the challenge. I want to do even better.” Other participants reflected on how the classes was cognitively stimulating in other ways. One older adult in the storytelling class shared, “It made you think.” Another added, “Those session words really helped my thinking process.”. Another in the creative writing class remarked, They always had something to inspire you to make you think, keep your mind occupied.” A collage class participant talked about learning how to do things together.

## DISCUSSION

The results from this mixed methods study offered slightly different perspectives on the extent of the benefits from participating in a 12-week visual or literary arts interventions. Participants in the focus groups from all four interventions identified multiple, perceived psychosocial benefits and a few cognitive benefits. The quantitative analysis of the pre-post survey data found that, compared to controls, participating in a 12-week ceramics intervention was associated with an improvements in perceived mastery and interest in life. Changes in these and the other well-being outcomes were not observed after the 12-week creative writing intervention. While attendance for the sessions varied, retention in the study was excellent, and satisfaction with the interventions was high, suggesting that these visual

and literary arts interventions are feasible and acceptable for older adults from diverse racial/ethnic backgrounds.

Benefits in the psychosocial well-being domain were documented in both the qualitative and quantitative data. Similar to other studies of visual arts (Greer et al., 2013; Reynolds, 2010) and other types of arts interventions including community choirs and dance (Johnson et al., 2020; Murcia, Kreutz, Clift, & Bongard, 2010), older adults from all four interventions reported that participating in the 12-week visual and literary arts interventions made them “feel good” with comments about how the classes provided enjoyment and facilitated happiness and laughter. Thus, the arts programs facilitated expression of positive emotions and helped promote a general sense of well-being. The focus groups suggested that the visual and literary arts interventions also provided them with opportunities to increase their social network and reduce loneliness by offering opportunities to strengthen bonds and develop meaningful relationships in the context of creating art. This further provided social support. It is important to note that participants in the current study did not acknowledge many symptoms of loneliness, so the absence of findings on the loneliness scale are not surprising. Increased social support has been documented as a benefit of participating in other arts interventions for older adults (Fraser et al., 2015; Skingley). Thus, having opportunities to make new friends in the context of a regular activity (Johnson et al., 2015) appears to be a consistent benefit across several types of arts interventions. The visual and literary arts programs also facilitated a sense of purpose, self-motivation, and interest in life, which also have been documented in studies of other arts interventions for older adults (T. Noice et al., 2014).

Taken together, all of these benefits overlapped with the psychosocial engagement components proposed in our preliminary conceptual framework (Table 1), which can be expanded with additional studies. Participants in the current study were asked about their “artistic identity” after completing the intervention. Not surprisingly, many participants acknowledged identity with the arts, creativity, and learning. Although we did not aim to study cognitive effects of the visual and literary arts interventions, cognitive benefits were noted in both interventions. The interventions provided opportunities to learn new skills and challenge their thinking abilities.

There were a few limitations of our study. Although randomization assignment was blinded until all baseline assessments were completed, group assignment was known once the interventions began. Similar to other arts-based studies, our study included a majority of women. Future research could examine how to increase representation of men in research about the arts. Although two of the four teaching artists in our study are men, increasing the diversity of teaching artists may also improve recruitment. The visual and literary arts interventions involved in this study were delivered in groups. Comparisons with other types of group activities (e.g., yoga) needs to be done in future studies to better understand the potentially unique benefits of arts interventions compared with other group interventions (Pearce, Launay, & Dunbar, 2015). Participants in the focus groups were self-selected, and one focus group only had one participant, which limited the insights about the storytelling intervention. Attendance was relatively low in one of the intervention groups and one of the focus groups, which may have attenuated the results and limited generalizability. The benefit

of the mixed-effects models (using the intent-to-treat principle) is that they produce unbiased estimates even when some individuals have missing observations, adjust for differential loss to follow-up, and account for clustering as required in this study. It is also possible that the effect size is small for documenting the effects of storytelling on wellbeing, and our pilot study was underpowered. In addition, we did not include cultural outcomes (e.g., activation of one's creative expression, aesthetic pleasure in creating and enjoying creations of others), which may contribute to the well-being of older adults. Additional work is needed to develop and explore other outcomes that may better document the effects of the arts on health and well-being.

Overall, this study expands our understanding of the health benefits of participating in arts interventions as an older adult. In particular, our study adds new data about the benefits of participating in visual or literary arts interventions, which have been less studied than other arts media (e.g., dance, music). It is important to note that similar benefits were observed in both the visual and literary arts interventions; these benefits have also been documented in other arts interventions. Future studies should examine which health benefits that are common across multiple arts interventions and better understand the unique benefits offered by specific arts interventions. Arts interventions also have several potential advantages for adults as they age: they can be intrinsically pleasurable and self-motivating, multi-modal in nature, relatively low cost to deliver, sustained in a variety of community settings, and culturally tailored for populations from underrepresented backgrounds.

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**Table 1.**

Conceptual Framework for Psychosocial Engagement Components of the Visual and Literary Arts Interventions.

Component	Proposed Mechanisms	Outcome Measure
Enhance personal growth	<ul style="list-style-type: none"> <li>• Trying new things</li> <li>• Self-expression</li> </ul>	<ul style="list-style-type: none"> <li>• Personal growth</li> </ul>
Build social network and social support	<ul style="list-style-type: none"> <li>• Developing new relationships and/or strengthen existing relationships</li> <li>• Providing opportunities for social support</li> <li>• Interacting with others</li> <li>• Sharing ideas</li> </ul>	<ul style="list-style-type: none"> <li>• Loneliness</li> <li>• General Belongingness</li> <li>• Neighborhood Cohesion</li> </ul>
Increase interest in daily life	<ul style="list-style-type: none"> <li>• Having something interesting and meaningful to do</li> <li>• Having somewhere to go on a regular basis</li> </ul>	<ul style="list-style-type: none"> <li>• Interest in Life /Apathy</li> </ul>
Self-efficacy	<ul style="list-style-type: none"> <li>• Taking on new challenges</li> <li>• Mastering new skills with practice over time</li> <li>• Building confidence</li> </ul>	<ul style="list-style-type: none"> <li>• Perceived mastery</li> </ul>

**Table 2.**

## Demographic Characteristics at Baseline

Characteristic	N (%) or Mean (SD)		
	Controls n=31	Ceramics intervention n=17	Creative writing intervention n=12
Demographics			
Age (range = 58–94)	73.0 (7.8)	69.3 (7.9)	66.1 (9.7)
Sex (female)	27 (87)	17 (94)	8 (67)
Race/Ethnicity			
Non-Latino White	9 (29)	5 (29)	0
Non-Latino Black	20 (65)	8 (47)	11 (92)
Asian	20 (65)	1 (6)	0
Latinx/Latino/Hispanic	1 (3)	3 (18)	1 (8)
Education (years)	13.4 (4.0)	13.9 (3.2)	13.8 (2.0)
Living arrangement: Lives alone	27 (87)	12 (71)	6 (50)
Time in current residence (years)	4.9 (1.7)	4.1 (1.5)	2.4 (0.8)
Overall health (poor to fair)	10 (32)	3 (18)	4 (33)
Overall QOL (poor to fair)	3 (10)	2 (12)	2 (17)



**Table 3.**

Pre-post Changes in Well-being Outcomes

Measures	High score	Group	Adjusted Baseline (mean)	Adjusted 12-week (mean)	Adjusted Within group change, 95% CI
NIH TB Interest in Life	+	Intervention (ceramics)	3.6	3.8	0.2* (0.0 to 0.4)
		Intervention (writing)	3.4	3.5	0.1 <sup>+</sup> (-0.2 to 0.3)
		Controls	3.6	3.4	-0.2 (-0.3 to -0.0)
NIH TB Loneliness	-	Intervention (ceramics)	2.1	2.0	-0.1 (-0.3 to 0.1)
		Intervention (writing)	1.9	2.1	0.2 (-0.04 to 0.4)
		Controls	1.34	1.26	-0.08 (-0.20 to 0.047)
Personal Growth	+	Intervention (ceramics)	4.68	4.74	0.06 (-0.22 to 0.52)
		Intervention (writing)	4.48	4.38	-0.10 (-0.31 to 0.09)
		Controls	4.47	4.5	0.03 (-0.10 to 0.15)
Mastery	+	Intervention (ceramics)	4.19	4.51	0.32* (0.07 to 0.52)
		Intervention (writing)	4.20	4.12	-0.08 (-0.38 to 0.17)
		Controls	4.36	4.20	-0.16 (-0.33 to 0.01)
General Belongingness	+	Intervention (ceramics)	4.41	4.61	0.20 (0.00 to 0.40)
		Intervention (writing)	4.43	4.31	-0.12 (-0.35 to 0.11)
		Controls	4.46	4.49	0.03 (-0.16 to 0.14)
Neighborhood Cohesion	+	Intervention (ceramics)	3.36	3.52	0.16 (-0.19 to 0.52)
		Intervention (writing)	3.42	3.58	0.16 (-0.28 to 0.56)
		Controls	3.23	3.48	0.25 (-0.04 to 0.49)

Note:

\* =  $p < 0.05$  and

<sup>+</sup> =  $p < 0.12$  (non significant trend)

NIH TB = National Institute of Health Toolbox