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Publisher: Routledge

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Arts & Health: An International Journal for Research, Policy and Practice

Publication details, including instructions for authors and subscription information:

<http://www.tandfonline.com/loi/rahe20>

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Published online: 17 Jun 2013.

To cite this article: Jeannine Liddle, Lynne Parkinson & David Sibbritt (2014) Health-related factors associated with participation in creative hobbies by Australian women aged in their eighties, *Arts & Health: An International Journal for Research, Policy and Practice*, 6:2, 132-142, DOI: [10.1080/17533015.2013.808253](https://doi.org/10.1080/17533015.2013.808253)

To link to this article: <http://dx.doi.org/10.1080/17533015.2013.808253>

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Health-related factors associated with participation in creative hobbies by Australian women aged in their eighties

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(Received 31 October 2012; final version received 3 April 2013)

Background: Population-based epidemiological studies can contribute to the spectrum of research evidence regarding the potential role of the arts in improving health and well-being among older people. To date, these studies are uncommon. The aim of the current study was to investigate health-related factors associated with participation in creative hobbies in women aged in their eighties living in Australia. **Method:** Descriptive and regression analyses were performed on data from the Australian Longitudinal Study on Women's Health 2008 postal survey of women born 1921–1926 ($n = 5470$). **Results:** Creative hobbies were undertaken by 52.7% of the sample and positively associated with physical health (IADL), health-related quality of life (general health, social functioning) and other social and demographic indicators. **Conclusion:** The relationship between participation in creative hobbies and health in older women is likely to be complex and influenced by many factors including individual physical capacity and independence as well as access to art-making activities.

Keywords: Australia; arts participation; health; women; aged 80 years and over

Background

Encouraging greater participation and investment in the arts as a means to improve health and well-being among individuals and communities is of increasing interest to policy-makers, practitioners and researchers from both the arts and health sectors (Arts Council England, 2007; Department of the Prime Minister & Cabinet Office for the Arts, 2011; Galloway, 2006; Mirza, 2005; Smith, 2002). However, debate continues around the best ways to progress this agenda. One area of debate has centred on whether scientific evidence is required for the role of the arts in health with concerns raised that the intrinsic value of the arts and cultural participation will become devalued in comparison with instrumental outcomes (Raw, Lewis, Russell, & Mcnaughton, 2012; Wreford, 2010). Another area of debate concerns the types of research that will best identify, describe and verify the role of the arts in bringing about positive benefits to health (Baum, 2001; Davies et al., 2012). Contradictory views exist regarding the relative value of evidence of benefit from population-based epidemiological studies, or large- or small-scale intervention and evaluation studies which may incorporate quantitative and/or qualitative methods (Dileo & Bradt, 2009; O'Shea & Léime, 2012). Nevertheless, establishing a scientifically credible evidence base around the role of the arts in health is seen

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as one way of gaining greater priority for arts programs in government policies and subsequent funding allocations (Galloway, 2006; Mills & The Arts and Health Foundation, 2011).

An additional area of concern is the existing focus of arts and cultural policies on young people at the relative exclusion of older people (Department of the Prime Minister & Cabinet Office for the Arts, 2011; O'Shea & Léime, 2012). Older people may have much to gain from participation in art-making activities in terms of social engagement with others, reduced social isolation and improved mental health (Greaves & Farbus, 2006; Hacking, Secker, Kent, Shenton, & Spandler, 2006; Merton & Bateman, 2007).

While the number and range of intervention and evaluation studies exploring the role of the arts in health continues to expand, there are fewer studies which attempt to identify links between participation in art-making activities and measures of physical health, emotional well-being or quality of life in older people at a population level (Adams, Leibbrandt, & Moon, 2011; Cuypers et al., 2011; Galloway, 2006; Mills & The Arts and Health Foundation, 2011; O'Shea & Léime, 2012). Population-based epidemiological studies use quantitative statistical techniques to describe the distribution of health-related states and their determinants in specific populations (Remington, Brownson, & Savitz, 2010). The particular value of these studies is that the findings can contribute to understandings of the underlying causes of health-related states and assist in policy- and operational decision-making aimed at controlling and preventing health problems, promoting health as well as evaluating programs and services (Coughlin, 2010; Remington et al., 2010). Studies using nationally representative samples have the added advantage of allowing generalisation of the findings to the wider population. However, difficulties arise when comparing or attempting to consolidate the findings from several studies when the way art-making activities and/or aspects of health have been defined and measured differ across studies.

To date, population-based epidemiological studies have tended to include art-making activities in a broader category of hobbies. Such research has reported contradictory results where connections between hobbies and health in older persons have been explored. Several cohort studies have found reduced risk of death (Agahi & Parker, 2008; Bassuk, Glass, & Berkman, 1999; Hyypä, Mäki, Impivaara, & Aromaa, 2005; Lennartsson & Silverstein, 2001). Other cohort studies have found no difference between participants and non-participants in terms of mortality risk (Menec, 2003) or other health indicators such as cognitive impairment (Hultsch, Hertzog, Small, & Dixon, 1999; Wang et al., 2006). Some cross-sectional studies have shown benefits from participation, such as higher life satisfaction (Kudo et al., 2007; Nimrod, 2007), morale and happiness (Onishi et al., 2006), while others have shown no associated benefits (Hyypä & Mäki, 2003; Nummela, Sulander, Rahkonen, & Uutela, 2008).

Given the growing research effort around creative activity and health and well-being at the international level, the aim of the current study was to investigate health-related factors associated with participation in creative hobbies by Australian women aged in their eighties. The particular aspects of health considered in this study included physical and mental health and health-related quality of life. The current study is of potential importance to the field of research in arts and health as it uses a large, nationally representative population sample to provide evidence at the population level regarding the potential role of art-making activities in individual health among older women – an area of inquiry which to date has been lacking, particularly in the Australian context.

Methods

Study Participants

The study was conducted as part of the Australian Longitudinal Study on Women's Health (ALSWH) and focused on the cohort of women born 1921–1926. The original sample was randomly selected from the national Medicare database. The cohort ($n = 12,432$) aged 70–75 years at the first survey in 1996 was shown to be representative of the national population in that age group (Lee et al., 2005). Successive surveys have occurred every three years. Although attrition from the cohort over time could affect the representativeness of the sample, the cohort appears to have remained reasonably representative of the Australian female population of the same age, based on comparisons with nationally available data (Brilleman, Pachana, & Dobson, 2010; Brown, Dobson, Bryson, & Byles, 1999; Byles & Dobson, 2011). The survey question regarding participation in creative hobbies was not included in the original survey and was only added in 2005. As the current study focused on participation among women aged in their eighties, and a sizeable proportion of women in the 2005 survey were outside this age group, data presented in this article come from the 2008 survey only. Survey materials are available from the study website www.alswh.org.au. ALSWH was approved by the relevant institutional human research ethics committees.

Demographic and Social Characteristics of Study Participants

The following demographic characteristics were considered – age, highest qualification completed (three categories: no formal qualifications; school level; post-school level), perceived ability to manage on the income available (two categories: easy/not too bad; difficult some or all of the time or impossible), whether the woman lived alone, and categorisation of area of residence as urban or rural/remote. Categorisation of area of residence was based on classification of postcode of residence using the Remote and Metropolitan Areas Index which is based on distance to the nearest service centres and from other people (Women's Health Australia, 2011).

Measures of social activity and social support were also considered. Social activity was a composite measure taking into account at least monthly participation in eight activities which involved interaction with other people (gone to the movies, theatre, concerts, lectures; gone to a sporting event; played cards, bingo, pool or some other game; eaten out at a restaurant; attended a religious service; attended a class or course; exercised with a group; volunteer work for any community or social organisations), scored between 0 (none of the activities performed) and 8 (all activities performed). Social support from family and social support from friends incorporated emotional and instrumental components (Gurung, Taylor, & Seeman, 2003). Social support scores ranged from 4 (high support) to 12 (low support).

Creative Hobbies

Participation in creative hobbies was measured by a positive response to the question, “In the past month have you worked on a hobby or handiwork, like sewing, knitting or woodworking?” Additional information on the type of creative hobbies in which the women were engaged was obtained from content analysis of open text comments made at the end of the survey.

Physical and Mental Health

Several measures were used. Women were asked if they had been diagnosed or treated in the previous three years for osteoarthritis or stroke (physical conditions that were considered likely to affect participation in creative hobbies) and depression or anxiety/nervous disorder (mental health conditions).

Instrumental activities of daily living (IADL) is a validated measure commonly used in ageing-related research (Women's Health Australia, 2011). IADL captures aspects of both physical and cognitive function as well as degree of dependence on others and is measured on a range of 0 (highest function) to 16 (lowest function) (Gill, McGloin, Gahbauer, Shepard, & Bianco, 2001).

The Memory Complaint Questionnaire (MAC-Q) measures age-related memory decline and captures both perceived cognitive function and affective state (Comijs, Deeg, Dik, Twisk, & Jonker, 2002). It is measured on a range of 7 (highest function) to 35 (lowest function) (Crook III, McGloin, & Larrabee, 1992).

Health-related Quality of Life

Health-related quality of life is a concept which arose from clinical outcomes research where the effects of clinical interventions were measured not only in terms of morbidity or mortality, but in terms of capacity to function in everyday life and the quality of life that came with having that capacity (Coons, Rao, Keininger, & Hays, 2000). The Short Form 36 (SF-36) Quality of Life questionnaire measures health-related quality of life across eight dimensions of physical functioning, role limitations due to physical factors ("role physical"), bodily pain, general health, mental health, role limitations due to emotional factors ("role emotional"), social functioning and vitality. Each dimension is assessed using a subscale of questions which are then transformed into a score out of 100, ranging from 0 (lowest well-being) to 100 (highest well-being) (Ware Jr, 2000).

Analysis

Demographic and social characteristics, physical and mental health and health-related quality of life variables were compared between women who did and did not participate in creative hobbies in the month prior to the ALSWH 2008 survey. Chi-square tests were used to compare two categorical variables and *t*-tests were used to compare categorical variables against continuous variables. To take account of the potential role of demographic, social as well as health-related variables in creative hobby participation, logistic regression modelling was conducted using a backward stepwise method, utilising the likelihood ratio test, to identify the most parsimonious model that best identified factors associated with participation in creative hobbies. The starting model included all variables that had a *p*-value of <0.05 in the initial descriptive analysis. Otherwise, for the descriptive analysis and final regression model a *p*-value of <0.005 was used for statistical significance in view of the large sample size and multiple comparisons. Analyses were performed using SAS, version 9.2 (SAS, 2002).

Results

Data regarding participation in creative hobbies were available for 5470 women. The mean age of survey respondents was 84.2 years.

Creative hobbies, including handiwork such as sewing, knitting or woodworking were performed by 52.7% of the women in the month prior to the survey. Content analysis of the open-text comments revealed other specific types of creative hobbies in which the women were engaged. These included crafts such as card-making, doll-making or jewellery-making; needlework; embroidery including patchwork, quilting and cross-stitch; crochet; painting; art; china painting; photography; drawing; sculpture; spinning; and weaving.

Based on the descriptive analysis, there were no differences between those who participated in creative hobbies and those who did not in terms of age, highest qualification completed, ability to manage on the income available or proportion who lived alone (see Table 1). A higher proportion of those who undertook creative hobbies lived in rural/remote areas (57.2% compared with 51.4%; $p < 0.0001$). Women involved in creative hobbies were also more socially active in general and reported higher social support from family and friends.

Table 2 compares physical and mental health and health-related quality of life between women engaged in creative hobbies and those who were not involved. Women engaged in creative hobbies had been less affected by osteoarthritis, stroke, depression or anxiety/nervous disorder compared with women not involved in those hobbies. They also had better function in terms of IADL, MAC-Q, and on all dimensions of health-related quality of life (see Table 2).

Table 3 shows the best model for explanatory factors associated with participation in creative hobbies by older women. Participation in creative hobbies was significantly associated ($p < 0.0001$) with higher levels of social activity generally (OR = 1.14; 95%CI: 1.1, 1.2), higher levels of social support from family (OR = 0.93; 95%CI: 0.89, 0.96) and higher function in terms of IADL (OR = 0.89; 95% CI: 0.86, 0.91). Other factors reaching statistical significance ($p < 0.005$) in the model were rural/remote area of residence, school level qualification, and general health and social functioning in the SF-36 subscales.

Table 1. Comparison of Demographic and Social Characteristics of Women from the ALSWH 1921–1926 Cohort Who Did and Did Not Participate in Creative Hobbies in the Month Prior to the 2008 Survey.

Characteristic	Participated in creative hobby		<i>p</i> -value
	Yes (<i>n</i> = 2930)	No (<i>n</i> = 2540)	
Age, mean (SD)	84.2 (1.4)	84.2 (1.5)	0.07
Area of residence, <i>n</i> (%)			
Urban	1252 (42.9)	1228 (48.6)	
Rural/remote	1670 (57.2)	1298 (51.4)	<0.0001
Highest qualification, <i>n</i> (%)			
Post-school	534 (18.9)	397 (16.4)	
School	1457 (51.7)	1324 (54.7)	
No formal	828 (29.4)	701 (28.9)	0.03
Managed on income available, <i>n</i> (%)			
Easy/ not too bad	2394 (82.5)	2030 (80.6)	
Difficult some/all of the time or impossible	507 (17.5)	489 (19.4)	0.07
Lived alone, <i>n</i> (%)	1762 (60.5)	1461 (58.3)	0.09
Social activity, mean (SD)	2.9 (1.7)	2.4 (1.6)	<0.0001
Social support, mean (SD)			
Family	6.0 (1.8)	6.2 (2.0)	0.0004
Friends	7.4 (1.8)	7.7 (2.0)	<0.0001

Table includes data presented in Liddle (2013, pp. 85–87).

Table 2. Comparison of Physical and Mental Health and Health-related Quality of Life of Women from the ALSWH 1921–1926 Cohort Who Did and Did Not Participate in Creative Hobbies in the Month Prior to the 2008 Survey.

Characteristic	Participated in creative hobby		<i>p</i> -value
	Yes (<i>n</i> = 2930)	No (<i>n</i> = 2540)	
Diagnosis or treatment in last 3 years for, <i>n</i> (%)			
Osteoarthritis	798 (27.5)	779 (31.0)	0.004
Stroke	108 (3.7)	150 (6.0)	0.0001
Depression	172 (5.9)	225 (9.0)	<0.0001
Anxiety/nervous disorder	157 (5.4)	185 (7.4)	0.003
Instrumental Activities of Daily Living, mean (SD)	2.9 (3.2)	4.7 (4.6)	<0.0001
Memory Assessment Clinic Q scale, mean (SD)	25.1 (4.5)	25.9 (4.7)	<0.0001
SF-36 subscales, mean (SD)			
Physical functioning	51.3 (27.5)	44.9 (28.6)	<0.0001
Role physical	41.3 (40.2)	37.0 (40.0)	<0.0001
Bodily pain	60.2 (26.3)	57.4 (27.7)	0.0001
General health	64.4 (19.5)	58.3 (21.8)	<0.0001
Mental health	80.5 (15.2)	76.0 (17.7)	<0.0001
Role emotional	71.7 (37.7)	66.7 (40.7)	<0.0001
Social functioning	77.2 (26.0)	70.2 (30.0)	<0.0001
Vitality	56.1 (19.5)	49.7 (21.4)	<0.0001

Table includes data presented in Liddle (2013, pp. 88–90).

Table 3. Factors Associated with Participation in Creative Hobbies in the Month Prior to the 2008 Survey, for ALSWH 1921–1926 Cohort.

Characteristic	Odds Ratio	95% Confidence Interval
Social activity	1.14	1.01–1.19**
Social support from family	0.93	0.89–0.96**
Social support from friends	0.98	0.94–1.02
Area of residence		
Rural/remote	Reference	
Urban	0.78	0.68–0.88*
Highest qualification		
Trade/tertiary	Reference	
School	0.79	0.66–0.94*
No formal	0.99	0.82–1.22
Instrumental activities of daily living	0.89	0.86–0.91**
Memory Assessment Clinic Q scale	0.98	0.97–0.99
Diagnosis or treatment in the last 3 years for osteoarthritis:		
Yes	Reference	
No	1.10	0.95–1.28
SF-36 subscales:		
General health	1.01	1.00–1.01*
Social functioning	1.00	0.99–1.00*
Mental health	1.01	1.00–1.01
Physical functioning	1.00	0.99–1.00
Role physical	1.00	1.00–1.00

p* < 0.005; *p* < 0.0001.

Table includes data presented in Liddle (2013, p. 91).

Discussion

Based on a large, national sample of women aged in their eighties, a substantial proportion of women in this age group were engaged in creative hobbies which was consistent with findings from previous studies in Sweden (Agahi & Parker, 2008; Häggblom-Kronlöf & Sonn, 2005; Silverstein & Parker, 2002) and North America (Hughes, Chang, Vander Bilt, & Ganguli, 2010; Menec, 2003). Of note was the popularity of creative hobbies among women from rural areas, which may reflect greater access to art and craft activities through involvement in local community networks and organisations such as the Country Women's Association (Country Women's Association of Australia, 2012), agricultural show societies (AG Shows NSW, 2012) and service clubs. Several women commented on the role of these organisations in facilitating their local participation in creative hobby activities. In developing, implementing and promoting arts programs among older populations, local networks and organisations are important stakeholders to consider and include.

Women involved in creative hobbies were also more engaged in other social activities and reported higher social support from family. These findings may be a result of more extensive social and family networks that present more opportunities to be involved in any social activity, creative or otherwise. Previous studies have shown that social engagement is related to better health and survival, while social disengagement has been related to poorer health and survival (Fillitt et al., 2002; Herzog, Ofstedal, & Wheeler, 2002), so the better health status of participants in creative hobbies may be a result of their higher social engagement in general rather than their specific participation in creative hobbies. This would be worthwhile exploring in future research using longitudinal data.

Higher levels of education and socioeconomic status have been linked to better health and longevity (Marmot, 2003). This link was not observed in our study where participation in creative hobbies was associated with a school level, rather than post-school education, despite this group being healthier than those who did not participate. In addition, the women's current ability to manage on the income available was not significantly different between participants in handiwork hobbies and non-participants. Previous studies among older adults have shown the impact of higher education on health is less marked, one explanation being that disadvantage has already taken a considerable toll and the surviving population is more homogeneous in terms of social status (Adler & Stewart, 2010; Alwin & Wray, 2005).

An advantage of this study over previous studies is that the types of creative hobbies in which the women were engaged could be identified. The survey question specifically included sewing, knitting or woodworking while the open-text comments allowed study participants to nominate a range of specific art-making activities. Others have called for common terms and definitions to be used by researchers investigating the relationship between art-making activities and aspects of health (Davies et al., 2012; Dileo & Bradt, 2009; Wreford, 2010). As specific types of creative hobbies could be identified in the current study, the findings of the study can be understood as applicable to the arts and health research agenda, where creative hobbies can fit into a schema of "visual arts, design and craft" as recently proposed (Davies et al., 2012, p. 203).

A limitation of the study is the reliance on self completion of questionnaires without further verification of, for example, diagnoses or health status. This can introduce biases (Bielak, 2010; Kimberlin & Winterstein, 2008; Sikkes, de Lange-de Klerk, Pijnenburg, Scheltens, & Uitdehaag, 2009), although questionnaire-based measures of comorbidity have been shown to be valid and comparable to documentation in medical records (Katz et al., 1996).

Being an analysis of cross-sectional data, the study was unable to determine whether participation in creative hobbies led to better health or whether being in good health facilitated participation, or a mixture of both. One interpretation of the findings is that health conditions such as osteoarthritis or stroke would have a potentially significant impact on the women's ability to use their hands in any creative hobby activity (Macdougall, Barnfield, & MacRaeet, 2004). Similarly, poor functional health would be expected to affect not only creative hobby participation but social activity generally and this was observed in the data. In addition, depression and anxiety/nervous disorders could impede women's participation in creative hobbies, accounting for the higher proportion of these conditions among women not involved in creative hobbies. Conversely, participation in creative hobbies could contribute to emotional well-being, accounting for the lower proportion of mental health conditions among women involved in creative hobbies.

Longitudinal epidemiological studies are able to examine relationships among variables over time and as such, present an advantage over cross-sectional studies regarding evidence of causal relationships (UK Civil Service, 2012). However, longitudinal studies are not definitive in explaining the complexities of real life as they may fail to take account of unknown or unmeasurable factors and their interactions (Adams et al., 2011). Consequently, to fully understand the complex relationship between participation in creative hobbies and health in older women will require research that incorporates both quantitative and qualitative methods.

Conclusion

Based on a large, national sample of older women in Australia, this study found that participation in creative hobbies was undertaken by 52.7% of the sample and positively associated with physical health (IADL), health-related quality of life (general health, social functioning) and other social and demographic indicators. The relationship between participation in creative hobbies and health in older women is likely to be complex and influenced by many factors including the women's own physical capacity and independence as well as access to art-making activities. Both quantitative and qualitative research methods are required to fully understand the relationship between creative hobby participation and health. The study findings contribute to the spectrum of research evidence regarding the potential role of the arts in relation to health and well-being in older people. Such evidence is of assistance to policy-makers and practitioners interested in how our ageing population can remain healthy and engaged through the arts.

Acknowledgements

The research on which this article is based was conducted as part of the Australian Longitudinal Study on Women's Health, the University of Newcastle and the University of Queensland. We are grateful to the Australian Government Department of Health and Ageing for funding and to the women who provided the survey data. The research formed part of the first author's doctoral studies, which were supported by an Australian Postgraduate Award from the University of Newcastle. Additional thanks to Cassie Curryer from the Research Centre for Gender, Health and Ageing who commented on earlier drafts of this article.

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