Research

Painting pictures and playing musical instruments: Change in participation and relationship to health in older women

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Aim: To explore how changed participation in painting pictures or playing a musical instrument is related to changes in physical and mental health in older women.

Method: Women enrolled in the 1921–1926 birth cohort of the Australian Longitudinal Study on Women's Health were surveyed in 2005 and 2008. Changed participation in painting pictures or playing a musical instrument was considered in relation to changes in social activity, social support, health status and health-related quality of life.

Results: Data were available for 5058 women. Improvements in instrumental activities of daily living (odds ratio (OR) 1.1, 95% confidence interval (CI) 1.0–1.2; \( P = 0.004 \)) and role limitations due to emotional factors (OR 1.6, 95% CI 1.0–2.5; \( P = 0.002 \)) were associated with starting participation. Decline in mental health-related quality of life (OR 4.1, 95% CI 2.3–7.2; \( P < 0.0001 \)) was associated with stopping.

Conclusion: Changed participation was associated with change in functional capacity and tied to emotional well-being.

Key words: aged, health-related quality of life, participation, women.

Introduction

Artistic activities, such as painting pictures or playing musical instruments, are increasingly being used in a therapeutic context, in particular as aids to recovery in mental illness and cancer and to assist in the management of chronic illness and disability [1]. In marginalised communities artistic practices are being used to promote mental health and social connectedness [2]. Arts and Health programs have received government support, especially in the UK, where policies and funding have allowed programs to flourish in both hospital and community settings alongside research into the effectiveness of such interventions [3].

In contrast, how artistic activities may contribute to healthy ageing, especially for people aged in their eighties, has not been closely examined. In Australia, people aged in their eighties and older constitute the fastest growing segment of the population [4], so effective policies and programs could have a significant impact on health and quality of life in this older age group. The World Health Organization promotes being active as fundamental for older persons’ health and well-being; and takes a broad view of activity to include engagement in society and culture [5]. Artistic activities, such as painting pictures or playing musical instruments, are forms of activity which have the potential to promote cognitive function [6], emotional well-being [7], and connection with others [8], as well as physical activity.

Despite limited Australian data concerning older adults, artistic activities appear to be relatively common, with more than half of the population aged 15 years and older involved in ‘art and craft’ and 44.2% involved in music hobbies [9]. International research among older adults has suggested that about 10% are involved in choir singing, painting or playing music [10].

Longitudinal studies exploring the role of artistic activities in promoting the health and well-being of older adults have had mixed findings. Some showed benefits of participation, such as reduced mortality risk [11,12], greater happiness [12], higher self-rated health [13] and lower decline in cognitive function [14,15]. Others showed no effects [16,17]. These studies were all conducted outside Australia.

This paper focuses on women aged in their eighties living in community settings in Australia and takes a different approach to previous studies. By focusing on how change in participation over time is related to changes in social activity and support, health status and health-related quality of life, this study aims to better understand the potentially complex relationship between artistic activities and the physical and mental health of older women. Specifically, change in participation refers to whether painting pictures or playing a musical instrument was taken up or discontinued in a 3-year time period. Using longitudinal data from a nationally representative sample, this study aimed to contribute unique insights from the Australian context to international understandings of the relationship between health and artistic activities.

Method

Participants in this study were women born between 1921 and 1926 and enrolled in the Australian Longitudinal Study on Women’s Health (ALSWH). Participants in ALSWH were randomly selected from the Australian Medicare database and were representative of the Australian female population in the relevant age group [18]. Postal surveys have been conducted...
for ALSWH every three years since 1996. This paper is based on data from surveys conducted in 2005 and 2008. The mean age of women in 2005 was 81.2 years and in 2008 was 84.2 years (n = 5560). Survey materials can be accessed from the study website (http://www.alswh.org.au). The Human Research Ethics Committees of the University of Newcastle and the University of Queensland approved ALSWH.

Measures of change in participation, sociodemographics and health

Based on responses to the question ‘In the past month have you painted pictures or played a musical instrument?’ women were classified into four groups: those who had participated across both surveys (‘continued participation’); those who had participated in 2005 and stopped by 2008 (‘stopped participation’); those who had not participated in 2005 and had started by 2008 (‘started participation’); and those who had not participated at either survey (‘non-participation’). This question had not been asked before 2005.

Highest qualification reported at the 1996 survey, classified as post-school, school, or no formal qualification, was noted, as well as postcode of residence in 2008, classified as urban or rural/remote.

Social activity was a composite measure based on at least monthly participation in eight socially orientated activities (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). A positive change between 2005 and 2008 meant an increase in social activity while a negative change meant a decrease. Changes in social support from family and friends [19] were similarly considered.

Change in instrumental activities of daily living (IADL) [20] and Memory Complaint Questionnaire (MAC-Q) [21] scores were used to measure changes in physical and subjective cognitive function respectively. A positive change between 2005 and 2008 meant an improvement in function, while a negative change meant a decline. Self-reported diagnoses or treatment for cataract and/or osteoarthritis before or after the 2005 survey were also measured, as these conditions were considered likely to have an impact on capacity to participate. Change in instrumental activities of daily living (IADL) [20] and Memory Complaint Questionnaire (MAC-Q) [21] scores were used to measure changes in physical and subjective cognitive function respectively. A positive change between 2005 and 2008 meant an improvement in function, while a negative change meant a decrease. Self-reported diagnoses or treatment for cataract and/or osteoarthritis before or after the 2005 survey were also measured, as these conditions were considered likely to have an impact on capacity to participate in preliminary cross-sectional analyses.

Change in the Short Form 36 (SF-36) Quality of Life questionnaire scores were used to measure changes in health-related quality of life, covering 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 [22]. A change of fewer than 5 points was counted as ‘no change’ as this degree of change is not regarded as ‘clinically’ important.

Statistical analyses

‘Continued participation’ and ‘stopped participation’ were compared for painting pictures or playing a musical instrument. ‘Started participation’ and ‘non-participation’ were compared separately. In bivariate analysis $\chi^2$ tests were used for categorical variables and Student’s $t$-tests for continuous variables. Logistic regression analyses were conducted using a backward stepwise method to identify the most parsimonious models for starting or stopping participation. 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 Institute, Inc., Cary, NC, USA, 2008).

Results

In 2008, 5560 women aged 80–87 years completed the ALSWH survey. Of these, 5058 had data available from the 2005 survey to allow tracking of participation across the two surveys.

In regard to painting pictures or playing a musical instrument, 7.9% ($n = 437$) had continued participation, 3.5% ($n = 192$) had stopped participation, 3.4% ($n = 187$) had started participation, and 76.3% ($n = 4242$) had not participated at either survey.

Comparing the groups ‘continued participation’ and ‘stopped participation’, women who had stopped participation experienced a greater decline in social activity (mean change $-0.4$ compared with $-0.06$, $P = 0.002$), a greater decline in IADL (mean change $-1.59$ compared with $-0.61$, $P = 0.001$), and a decline in SF-36 mental health (43.9% compared with 22.2%, $P < 0.0001$) and were more likely to have been diagnosed or treated for osteoarthritis only after 2005 (16.3% compared with 9.1%, $P = 0.002$). There was no difference between the two groups on the other variables examined.

Comparing the groups ‘started participation’ and ‘non-participation’, a higher proportion of women who started by 2008 held a post-school qualification (25% compared with 16.6% of ‘non-participation’ group, $P = 0.0002$). Women who started participation by 2008 experienced an increase in social activity (mean change $+0.3$ compared with $-0.06$ for ‘non-participation’, $P = 0.0003$). A greater decline in IADL for the ‘non-participation’ group was just outside the level of statistical significance (mean change $-1.2$ compared with $-0.4$ for those commencing participation, $P = 0.005$). There were no differences between the two groups on the other variables examined.

From logistic modelling, improvements in IADL (OR 1.1, 95% CI: 1.0–1.2, $P = 0.004$) and SF-36 role limitations due to emotional factors (OR 1.6, 95% CI: 1.0–2.5, $P = 0.002$); and having a post-school qualification rather than no formal qualification (OR 0.3, 95% CI: 0.2–0.6, $P = 0.0004$) were significant factors in starting participation (see Table 1). Decline in SF-36 mental health (OR 4.1,
95% CI: 2.3–7.2, \( P < 0.0001 \) was highly significant, along with living in an urban area in 2008 (OR 2.1, 95% CI: 1.3–3.5, \( P = 0.002 \)) as factors associated with stopping participation (see Table 2).

### Discussion

This study is unique in its examination of health-related factors associated with changed participation in artistic activities in older women. Decline in IADL has been shown to have a deleterious effect on involvement in physical, social, intellectual and emotional activities by adults aged in their eighties [23]. Our study shows that improved physical and cognitive capacity, as reflected in improved IADL, was a significant factor in women taking up participation. However, it cannot determine whether this improvement is a result of participation and/or what facilitates participation.

What is particularly evident from our findings is the relationship between participation and emotional well-being. Those who stopped painting pictures or playing a musical instrument experienced significant decline in mental health-related quality of life while those who started these activities experienced significant improvement in emotional well-being. Engagement in valued and meaningful activities has been shown to be protective for depression among older adults [24]. Reduction in activity levels has been related to increased risk of depression or depression-related symptoms [23,25]. Qualitative studies exploring the meaning of artistic activities in the lives of older people have pointed to the psychological benefits that arise from enhanced sense of self, sense of purpose, sense of competence and control [26–28]. Csikszentmihalyi [29; pp. 110–111] proposed that what keeps people motivated in an activity is the ‘quality of experience’ a person feels when involved in the activity. He called this optimal experience ‘flow’. Flow experiences contribute to a sense of well-being and are particularly relevant to artistic activities.

The estimate of 11.3% of women involved in painting pictures or playing a musical instrument at any one time is in line with previous studies [10,11]. Higher education levels have been associated with greater likelihood of participation by older women in physical activities [30]. Having a post-school education was a factor here in starting artistic activities. This may reflect application of skills learnt earlier in life such as from music lessons. Greater familiarity with more formal learning environments may also have assisted the women to take up new learning opportunities.

### Conclusion

A better understanding of how artistic activities may contribute to health and well-being in older persons has the potential to benefit the lives of many. This study is the first Australian population-based study to investigate how...
changed participation in artistic activities relates to health in older women. Women who experienced improved functional capacity were more likely than those with no improvement to take up artistic activities, and those who took up activities were more likely to experience improved emotional well-being. Women who stopped participation were more likely than those who continued to experience a decline in mental health.

Future research could occur in several areas, for example, identifying causal factors associated with changes in participation using longer time periods, more explicit measures and complemented by qualitative studies; examining these factors in relation to men, as well as women; and developing theoretical mechanisms explaining uptake or cessation of artistic activities.

The findings provide support for policies and programs that promote artistic activities among older women, as participation appears to be tied to emotional well-being.

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Key Points
• Approximately 11% of Australian women aged in their eighties are participating in artistic activities such as painting pictures or playing a musical instrument.
• While some women may stop these activities over a 3-year period, a similar number take up participation, indicating that women in their eighties continue to try new activities or revisit old ones.
• Women who start participation are more likely than those who do not to experience an improvement in instrumental activities of daily living.
• Women who stop participation are more likely than those who keep going to experience a decline in mental health-related quality of life, while women who start participation are more likely to experience improved emotional well-being.

References