



Relationships between leisure activity types and well-being in older adults

Jungsu Ryu & Jinmoo Heo

To cite this article: Jungsu Ryu & Jinmoo Heo (2018) Relationships between leisure activity types and well-being in older adults, *Leisure Studies*, 37:3, 331-342, DOI: [10.1080/02614367.2017.1370007](https://doi.org/10.1080/02614367.2017.1370007)

To link to this article: <https://doi.org/10.1080/02614367.2017.1370007>



Published online: 22 Sep 2017.



Submit your article to this journal [↗](#)



Article views: 2049



View related articles [↗](#)



View Crossmark data [↗](#)



Citing articles: 10 View citing articles [↗](#)



Relationships between leisure activity types and well-being in older adults

Jungsu Ryu^a and Jinmoo Heo^{a,b}

^aDepartment of Recreation, Park and Tourism Sciences, Texas A&M University, College Station, TX, USA; ^bDepartment of Sport Industry Studies, Yonsei University, Seoul, South Korea

ABSTRACT

This study investigates the relationships between specific types of leisure activities and well-being variables (i.e. health perception, life satisfaction and optimism) in older adults. A convenience sample of 188 participants ranging in age from 60 to 90 years ($M = 74.99$, $SD = 5.49$) was recruited from three different senior centres in Korea. Three hierarchical multiple regression analyses were conducted to examine the relationships between specific types of leisure activities (outdoor, physical, hobbies and indoor, cultural, home-centred and social and volunteering) and outcome variables. After controlling for covariates, it was revealed that home-centred and social activities were associated with all outcome variables. Volunteer activities were positively related to health perception and life satisfaction. Positive relationships were also observed between life satisfaction and physical activities, optimism and cultural activities and health perception and outdoor activities. These findings suggest that promoting positive social interaction in recreational settings and encouraging participation in volunteer activities are important factors contributing to successful ageing.

ARTICLE HISTORY

Received 2 June 2016
Accepted 13 August 2017

KEYWORDS

Leisure activity; older adults;
life satisfaction; optimism;
health perception

Introduction

Research has indicated that involvement in leisure activities impacts the well-being of older adults (Chang, Wray, & Lin, 2014; Lampinen, Heikkinen, Kauppinen, & Heikkinen, 2006; Menec, 2003). Many empirical studies have suggested that participating in leisure activities has a positive psychological impact on older adults. In addition, involvement in personally meaningful leisure activities may positively impact individuals' well-being and successful ageing (Dupuis, 2008; Kelly, 1993). In other words, leisure participation undoubtedly plays a key role in the lives of older adults. While the literature has provided evidence of the engagement of older adults in leisure activities contributing to their well-being and successful ageing, investigations into certain types of activities have been rare (Paillard-Borg, Wang, Winblad, & Fratiglioni, 2009).

A body of research confirms that participating in leisure activities improves well-being in older adults. While leisure experiences in general might be beneficial, this effect may vary depending on the type of leisure activity. It might be that certain types of leisure activities are particularly helpful to older adults. For example, Weng and Chiang (2014) investigated the effects of various leisure activities on mental health (i.e. anxiety reduction and attention restoration) in Taiwanese students. Their study demonstrated that moderate leisure activities such as walking, gardening and chatting contributed to improving mental health

among study participants. In addition, the authors of that study found that outdoor activities were better at restoring attention than indoor activities. By examining the effects of various leisure activities, their study was able to provide positive prescriptions, such as encouraging people to participate in outdoor activities as well as allowing them to involve themselves in activities beneficial to mental health.

In a similar vein, the current study explores the effects of different types of leisure activities on the well-being of older adults through a closer examination of the relationships between the types of leisure activities and well-being variables (i.e. health perception, life satisfaction and optimism). This may provide helpful directives to older adults who need solutions regarding ways in which to improve their quality of life through participation in certain types of activities. Moreover, the present study helps to address the limited research devoted to this area. Therefore, the purpose of the current study is to explore the relationships between specific types of leisure activities and well-being variables among older adults.

Leisure pursuits and well-being

Leisure behaviour has been found to be strongly associated with well-being in advanced age. Leisure activities have positive effects on psychological well-being and physical health in older American adults aged between 50 and 96 years (Chang et al., 2014). Of the various types of leisure activities (i.e. mental, social, physical and cooking), physical leisure activities have been the most beneficial for predicting well-being. Ku, Fox, and Chen (2009) conducted a seven-year study and noted that engagement in leisure time physical activities reduced the symptoms of depression in Taiwanese adults aged 50 and older. In a qualitative study conducted by Duay and Bryan (2006), adults from 60 to 86 years of age described the importance of being engaged in social activities and maintaining close relationships with family and friends. Adults aged between 65 and 84 years who frequently participated in leisure activities (e.g. active and passive art interests, reading, handicrafts and involvement in associations or religious activities) were more likely to have higher levels of mental well-being (Lampinen et al., 2006).

Moreover, people who participate in leisure activities are more likely to be satisfied with life and less likely to be depressed (e.g. Adams, Leibbrandt, & Moon, 2011; Dupuis, 2008). According to Menec (2003), older adults aged between 67 and 96 years who engaged in sports or games demonstrated higher levels of happiness and life satisfaction, while those participating in solitary activities (e.g. handwork, music and reading), social groups, light housework and gardening significantly benefited in terms of happiness. Nimrod (2007) also demonstrated leisure participation as being the predominant determinant of greater life satisfaction in Jewish retirees aged 50 and over.

Recent literature has also revealed the positive role of leisure engagement on the well-being of older adults. Liechty, Genoe, and Marston (2017) demonstrated the benefits of physically active leisure to individuals who had recently retired or were close to retirement. Participants reported that leisure activities enable them to relieve stress, build social ties with family and friends and enjoy the outdoors. In addition, community-dwelling older adults who actively engaged in both physical and mental activities demonstrated better physical function (Shah, Lin, Yu, & McMahan, 2017). Moreover, leisure time physical activities significantly predicted positive emotions, life satisfaction, optimism and psychological well-being in older adults experiencing loneliness (Kim, Lee, Chun, Han, & Heo, 2017).

Successful ageing, leisure participation and well-being

Rowe and Kahn (1987) proposed a model of successful ageing comprising three key components: avoidance of disease and disability, maintenance of cognitive and physical function and engagement with life. Engagement with life is defined as maintaining interpersonal relationships and productive activities that produce social value such as volunteer activities. Hendricks and Cutler (2004) recommended that older people maximise their social integration and involvement when their commitments to the workforce and family decrease. In addition, for older adults, volunteer activities can be conducive towards easing the transition to retirement (Hoglund, Sadovsky, & Classie, 2009) and assisting the maintenance of a sense of purpose in life (Greenfield & Marks, 2004).

Subjective health

Successful ageing appears to be associated with control over one's daily life, improved health status and greater levels of well-being (Baltes & Baltes, 1993; Knappe & Pinquart, 2009). Active living at an advanced age is regarded as a crucial feature of healthy ageing (Menec, 2003; Stobert, Dosman, & Keating, 2006; Warr, Butcher, & Robertson, 2004). While Rowe and Kahn's conceptualisation has been significantly positioned in social gerontology over the years, contesting views have emerged in reaction to the lack of structural and social factors in the model (Martinson & Berridge, 2015). Research has indicated various ways of assessing health, such as physical disability, depression, pain measurement, anxiety, depression, social health and mental status (McDowell, 2006). Subjective health is recognised as an important factor contributing to the psychological well-being of older adults (Kovar, 1983; Lher, 1993). Participation in leisure activities is known to have a significant impact on improving subjective health in older adults (Fernandez-Ballesteros, Zamarrón, & Ruíz, 2001; Morrow-Howell, Hinterlong, Rozario, & Tang, 2003; Jacobs et al., 2008).

Optimism

Beyond a general relationship between activity factors and successful ageing, studies have also revealed that personality traits, such as dispositional optimism, extraversion, conscientiousness and resilience also contribute towards successful ageing (e.g. Pruchno, Heid, & Genderson, 2015; Srivastava & Das, 2013). Dispositional optimism has garnered substantial attention as a personality trait in positive psychology (Scheier, Carver, & Bridges, 1994). According to Scheier and Carver (1987), dispositional optimism refers to an individual's overall expectation of a positive outcome in the future, which significantly impacts cognition and behaviour. Scheier and Carver suggest that optimistic individuals tend to have better physical and mental health than do pessimistic individuals.

Optimism is a crucial internal resource for controlling physical and psychological health (Geers, Wellman, & Fowler, 2013; Vollmann, Scharloo, Langguth, Kalkouskaya, & Salewski, 2014; Zhang et al., 2014). Researchers have confirmed that optimism is strongly associated with life satisfaction as well as psychological health. For example, Jiang et al. (2014) demonstrated an association between optimism and improved life satisfaction, and Schweizer and Koch (2001) found optimism as being positively correlated with life satisfaction and negatively correlated with depression.

Numerous studies have indicated that participating in leisure activities is also beneficial to optimism. It has been suggested that leisure activities generate optimism regarding the future and help people overcome negative life events (Kleiber, Hutchinson, & Williams, 2002). In addition, individuals who take a positive view of leisure and participate in leisure activities are more likely to be optimistic and less likely to be distressed (Trenberth, 2005).

Life satisfaction

According to Freund and Baltes (1998), life satisfaction can eventually feature as an important element in successful ageing, which supports Knappe and Pinquart's (2009) view to some extent. Previous studies have revealed that participation in leisure activities enhances life satisfaction in people of all ages (Agyar, 2014; Becchetti, Ricca, & Pelloni, 2012; Pagán, 2015). Murphy (2003) suggested that engagement in leisure activities results in a positive psychological effect and life satisfaction. Also, findings in the literature demonstrated that participating in leisure activities could be a strong predictor of life satisfaction in older men (Şener, Terzioğlu, & Karabulut, 2007), as well as leisure activities are significantly and directly related to life satisfaction in older adults (Fernandez-Ballesteros et al., 2001).

Methods

Participants in this study came from a convenience sample of 188 older adults living in the city of Seoul, the capital of South Korea. They were recruited from three different Korean senior centres

located in Seoul, Korea. The senior centres were selected because they were convenient sites for soliciting participants to answer questions. These centres offer various programmes such as tending a vegetable garden, participating in a variety of exercise classes (e.g. line dancing and Korean traditional movement), playing pool and taking computer classes. The researchers collected 203 questionnaires; however, 15 incomplete questionnaires were excluded from the analysis. The sample included 67 males (35.6%) and 121 females (64.3%) of ages ranging from 60 to 90 years ($M = 74.99$, $SD = 5.49$). A total of 62.2% of the participants were married and 31.9% were widowed. Most of the respondents were either middle school graduates or high school graduates (40.4 and 41.5%, respectively). Of the respondents, 17.0% had two- or four-year college degrees. A vast majority of the participants reported that they were unemployed (93.1%).

Instrumentation

Lee and Payne (2015) proposed that diverse types of stimulation (e.g. physical, social and cognitive) are connected to well-being in older adults. In the current study, it was expected that various leisure activities would provide positive stimulation. The indicators of well-being in our study were life satisfaction, dispositional optimism and health perception. We chose these scales because of their wide use over time and proven applicability to older adults (Ikeda et al., 2014; Ju, Shin, Kim, Hyun, & Park, 2013; Pasanen, Tyrväinen, & Korpela, 2014; Sancho, Galiana, Gutierrez, Francisco, & Tomás, 2014).

Life satisfaction was measured using the Satisfaction with Life Scale (SWLS) (Diener, Emmons, Larsen, & Griffin, 1985), which includes five items incorporating statements such as 'In most ways my life is close to my ideal' and 'I am satisfied with my life'. The SWLS is rated on a seven-point Likert-type scale (1 = *strongly disagree* to 7 = *strongly agree*) with higher scores indicating greater life satisfaction. Cronbach's alpha for this index was .841.

Dispositional optimism was assessed using the Life Orientation Test-Revised (Scheier et al., 1994), which includes 10 items featuring statements such as 'Overall, I expect more good things to happen to me than bad'. This instrument was rated on a five-point Likert-type scale (0 = *strongly disagree* to 4 = *strongly agree*) and comprised three optimistic items, three pessimistic items and four filler items. The pessimistic items are reverse-scored and summed with the optimistic items. The four fillers were not used in the analysis. The internal consistency of the items in our study sample was modest (Cronbach's $\alpha = .576$). While the items fall at the low end of acceptable internal consistency, we retained them because of their theoretical relevance towards capturing an optimistic outlook.

To determine health perception, a modified version of Willits and Crider's (1988) health rating question was used, and each participant answered the question 'In general, how would you rate your health?' It was rated on a five-point Likert-type scale (1 = *poor* to 5 = *excellent*). The single-item measure of subjective health has been revealed to have good test-retest reliability. It has been demonstrated as having a strong correlation with other measures of health, indicating a high level of construct validity (Streiner & Norman, 2004).

The modified version of Ragheb's (1980) Leisure Participation Scale utilised in Chun et al.'s study (2012) was employed to assess the frequency of participation in various leisure activity types. The activities used in this study included the following: (a) outdoor activities such as hiking, fishing and biking; (b) physical activities such as exercise and sports; (c) hobbies and indoor activities such as painting, playing a musical instrument and reading; (d) cultural activities and entertainment such as watching television, attending movies, concerts, ballets and visiting museums; (e) home-centred and social activities such as socialising with friends, dining out, travelling and family time; and (f) volunteer activities. Each activity was scored on a four-point Likert-type scale relative to the frequency of respondents' participation in the leisure activity (i.e. 1 = *never* to 4 = *frequently*). A higher score implied more frequent participation.

Data analysis

Pearson correlations were employed to assess the relationships among the study variables. A series of hierarchical multiple regressions were conducted with health perception, life satisfaction and dispositional optimism as outcome variables and types of leisure activity as predictors. Demographic variables considered to be potential confounders included age, gender and education. All covariates were entered as the first step in the regression analyses.

Results

The Pearson correlations between the variables are shown in Table 1. The results indicate statistically significant relationships among the following study variables: gender, age, education, six leisure activities (i.e. outdoor, physical, hobbies and indoor, cultural and entertainment, home-centred and social, volunteer activities), life satisfaction, dispositional optimism and health perception. The largest coefficient was found between life satisfaction and social activities ($r = .391$), which implies that engagement in more social activities is associated with higher life satisfaction. Life satisfaction was also significantly correlated with physical activities ($r = .381$), cultural activities ($r = .269$) and volunteer activities ($r = .217$). Positive relationships existed between dispositional optimism and social activities ($r = .370$), cultural activities ($r = .312$) and physical activities ($r = .243$). Health perception was positively and significantly related to social activities ($r = .288$), volunteer activities ($r = .229$), cultural activities ($r = .223$), outdoor activities ($r = .223$), physical activities ($r = .195$) and hobbies and indoor activities ($r = .145$). Age was positively correlated with health perception ($r = .145$) which indicates that people perceive their health more positively as they get older. Other unexplained factors such as wealth or the presence of illness may have influenced the relationship between age and subjective health.

Three hierarchical multiple regression analyses were conducted to assess the unique contribution of leisure activities to life satisfaction, dispositional optimism and health perception. Table 2 presents associations between six leisure activities and life satisfaction after controlling for gender, age and education. In model 1, gender, age and education explained 5.2% of the variance in life satisfaction ($R^2 = .052, p < .05$). In model 2, six leisure activities were entered. Physical activities ($\beta = .246, p < .01$), social activities ($\beta = .199, p < .05$) and volunteer activities ($\beta = .148, p < .05$) were significant predictors of life satisfaction. Model 2 accounted for 26.6% of the variance in life satisfaction ($R^2 = .266, p < .001$).

A relationship between two different leisure activities and dispositional optimism existed after controlling for gender, age and education (Table 2). In model 1, gender, age and education explained 2.3% of the variance in dispositional optimism ($R^2 = .023$). In model 2, six leisure activities were introduced and cultural activities ($\beta = .195, p < .05$) and social activities ($\beta = .272, p < .01$) were significant variables contributing to dispositional optimism. This model accounted for 20.0% of the variance in dispositional optimism ($R^2 = .200, p < .001$).

In addition, an association was discovered between three different leisure activities and health perception after controlling for gender, age and education (Table 2). In model 1, gender, age and education accounted for 3.5% of the variance in health perception ($R^2 = .035$). In model 2, outdoor activities ($\beta = .193, p < .01$), social activities ($\beta = .190, p < .05$) and volunteer activities ($\beta = .191, p < .01$) were significant predictors of health perception. This model explained 20.2% of the variance in health perception ($R^2 = .202, p < .001$).

Discussion

This study enhances our understanding of the association between specific types of leisure activities and well-being in older adults. Overall, frequent participation in home-centred and social activities, as well as volunteer activities, was related to the three components of well-being measured in this study. Engagement in home-centred and social activities contributed to all three well-being variables



Table 1. Zero-order correlation coefficients of dependent and independent variables.

	1	2	3	4	5	6	7	8	9	10	11	12
1. Gender	1											
2. Age	-.109	1										
3. Education	-.377**	-.144*	1									
4. Outdoor activities	-.113	-.178*	.179*	1								
5. Physical activities	.051	-.017	.070	.168*	1							
6. Hobbies and indoor activities	-.094	-.072	.301**	.229**	-.085	1						
7. Cultural activities and entertainment	.083	.093	.039	.178*	.247**	.250**	1					
8. Home-centred and social activities	.168*	.139	.073	-.018	.380**	.216**	.296**	1				
9. Volunteer activities	-.033	-.223**	.152*	.188**	.147*	.211**	.032	.158*	1			
10. Life satisfaction	.131	.027	.107	.058	.381**	.107	.269**	.391**	.217**	1		
11. Dispositional optimism	.130	-.002	.016	.060	.243**	.139	.312**	.370**	.025	.420**	1	
12. Health perception	-.027	.145*	.090	.223**	.195**	.145*	.223**	.288**	.229**	.363**	.283**	1

* $p < .05$; ** $p < .01$.

Table 2. Hierarchical regression analysis of outcome variables.

	Life satisfaction		Dispositional optimism		Health perception	
	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2
Gender	.215** (.200)	.121 (.186)	.164* (.094)	.055 (.090)	.040 (.145)	-.009 (.140)
Age	.079 (.016)	.048 (.016)	.028 (.008)	-.061 (.008)	.168* (.012)	.190* (.012)
Education	.200* (.092)	.102 (.087)	.082 (.043)	-.016 (.042)	.129 (.067)	.029 (.066)
Outdoor activities		-.030 (.070)		.010 (.034)		.193** (.053)
Physical activities		.246** (.083)		.101 (.040)		.041 (.062)
Hobbies and indoor activities		.012 (.080)		.057 (.039)		.002 (.060)
Cultural activities and entertainment		.128 (.090)		.195* (.043)		.098 (.067)
Home-centred and social activities		.199* (.101)		.272** (.049)		.190* (.076)
Volunteer activities		.148* (.079)		-.062 (.038)		.191** (.059)
<i>F</i>	3.355*	7.157***	1.415	4.950***	2.210	5.004***
<i>R</i> ²	.052	.266	.023	.200	.035	.202

Notes: Standardised regression coefficients reported, standard errors in parentheses.
^{*}*p* < .05; ^{**}*p* < .01; ^{***}*p* < .001.

(life satisfaction, dispositional optimism and health perception) and volunteering was a significant predictor of life satisfaction and health perception among the older adults sample.

Our results provide evidence of engagement in physical, social and volunteer activities being associated with life satisfaction. Participating in physical activities has been reported as being an important contributor to life satisfaction. For example, maintaining high levels of physical and social activities has been shown to positively relate to being satisfied with life in old age (Fernandez-Ballesteros et al., 2001). While causal relationships were not tested in our study, we suggest that exercising and playing sports can be a means to maintain health status and improve life satisfaction in older adults. Greater participation in social and volunteer activities has been recognised as being a health-promoting behaviour that is likely to enhance well-being in older adults. According to Wheeler, Gorey, and Greenblatt's (1998) meta-analysis study, engaging in volunteering can bolster older adults' sense of well-being. The combined results of the 29 studies showed that older volunteers were more likely to experience greater life satisfaction than younger volunteers. In this regard, the findings from the present study may add to the existing body of evidence demonstrating participation in social and volunteer activities as being related to life satisfaction. Confirming the findings of the literature, we postulate that enhanced life satisfaction is a by-product of socialising with family and friends, dining out, travelling and engaging in volunteer work.

Optimism in older adults can be developed by engaging in cultural activities and social activities. Research reveals that engaging in cultural events (visiting museums) benefits emotional well-being, such as through inducing optimism and hope (Wood, 2008), and shows that individuals who have closer social relationships are more likely to be optimistic regarding the future (Antonucci, 2001). The finding of longitudinal study (Huxhold, Miche, & Schüz, 2014), demonstrating that social interaction with family and friends significantly predicted augmented changes across a six-year interval in positive affect among older age groups, is also in line with the result of the current study to some extent. Consistent with previous research, the present study supports the contribution of cultural and social activities to optimistic disposition in older adults. While the importance of social connections in maintaining feelings of optimism held by older adults has been widely demonstrated, the effect of cultural activities remains understudied. Involvement in cultural activities, such as visiting exhibitions, shows and plays, has been considered by researchers to be less important for the well-being of older adults than engagement in physical or social activities which has been widely investigated. However, the current study supports the significance of experiences in cultural activities by assisting older adults in enjoying their lives with an optimistic attitude. Furthermore, it may suggest the potential effects of cultural activities on active ageing.

To improve health perception, this study recommends that older adults engage in certain types of leisure activities (outdoor, social and volunteer activities). For outdoor activities, the result is consistent with a seven-year longitudinal study conducted by Jacobs and colleagues (2008), which investigated the association between the frequency of going out of the home and health and functional status in older adults. The study participants who went outdoors daily at baseline showed a greater level of subjective health than those who went outdoors less often. Moreover, not going outdoors daily at baseline significantly predicted poor subjective health over the seven-year follow-up period in older adults. In terms of significance of social and volunteer activities in better health perception, the findings also bear on those from previous studies. A strong association between social activities and physical health in older adults was revealed in a cross-sectional study by Everard, Lach, Fisher, and Baum (2000), while engagement in volunteering appeared to improve subjective health in older adults (Wilson, 2000). In addition, Morrow-Howell and colleagues (2003) analysed three waves of secondary data from the Americans Changing Lives Study to examine the effects of volunteering on the well-being of older adults, with results suggesting that older adults who invested more hours in volunteering had a higher level of subjective health. In this regard, our findings may supplement the existing literature in that various leisure activities are conducive to perceived health. Our results imply that socialising with others and doing meaningful things can be more instrumental in subjective health than merely being engaged in physical activity to some extent in later life. In other words, participating in physical activities that are accompanied by socialising opportunities is particularly beneficial for older adults.

With regard to the association between age and health perception, our findings diverge from previous research describing the negative impact of age on health perception (e.g. Campos et al., 2015). Health perception probably declines in advanced age due to functional impairment and age-related morbidity. However, the literature suggests that demographic and socio-economic factors may come into play in this relationship. According to Sun et al. (2007), older women in Japan tend to report higher levels of health perception than do older men. In our view, these contradictory results may be attributed to our predominantly female sample (64.3%), a similar cultural context to that of the study by Sun et al., and the fact that most respondents in our study were physically independent and relatively healthy.

Different types of leisure activities have been found to confer different benefits to well-being in older adults. This study provides helpful evidence to practitioners who work with or advise older adults to suggest appropriate leisure activities for varied groups of older people with different purposes and goals in pursuing leisure behaviour. This body of evidence may help older adults to select a form of activity that is appropriate to their needs, given environment and level of physical and mental health.

As we noted earlier, Rowe and Kahn (1997) described three major components of successful ageing. One of these is social engagement, which is defined in two ways. The first definition involves the maintenance of close relationships and the second advocates continued involvement in meaningful and purposeful activities. Thus, promoting frequent engagement in social and productive activities may positively influence successful ageing. Our study strongly supports Rowe and Kahn's notion by showing that frequent participation in both social activities and volunteer activities is positively associated with well-being in older adults. Older adults who increase their social activities are more likely to have an increased sense of well-being. Furthermore, those who frequently participate in meaningful and purposeful activities such as volunteering are more likely to maintain well-being in later life.

These findings suggest that engaging in positive social interactions in recreational settings and encouraging participation in volunteer activities are important aspects of successful ageing. Broughton, Payne, and Liechty (2016) conducted semi-structured interviews with older men who attended coffee groups and conducted participant observation of two different coffee groups in order to better understand social leisure among older men when they engage in a coffee group. One of the findings highlighted was the importance of social activity in promoting social connectedness and a sense of belonging among older men. Volunteering, in particular, has been found to have a more significant meaning for older adults than that for young adults since older volunteers experience higher increases in life satisfaction and perceived health over time than do young volunteers (Van Willigen, 2000). It

was also found that the more hours older adults engaged in volunteering, the more life satisfaction they experienced, whereas the association between volunteer hours and life satisfaction among young adults was curvilinear (Van Willigen, 2000). This implies that older adults are likely to experience additional benefits as they increase their level of commitment to volunteering. The results of the current study parallel such findings and add to literature suggesting that active involvement in social and volunteer activities leads to successful ageing. For older adults, the recognition that their lives are meaningful and that they are doing things that allow them to find meaning in life can be extremely important. This is because older adults tend to become isolated from society after retirement and tend to lose their sense of purpose as they grow older. Thus, social and volunteer activities are variables that are more likely to predict well-being than other types of activities in the current study.

There are limitations in this study that need to be addressed. We recognise that this instrument does not capture all the specific details or implications with regard to the frequency of participation in leisure activities. It may be useful to employ additional assessment systems that encompass a broader concept of involvement in leisure activities (for example, through asking questions such as 'How often do you engage in the activities per week?' or 'Once you start an activity, how long do you participate in it?'). These questions would allow us to obtain a categorised frequency of participation, which would in turn allow us to determine the pattern of leisure involvement among older adults on the basis of reliably classified evidence. In addition, it is possible for some overlaps among the leisure activity categories used in this study to exist. For example, hiking and biking were listed as outdoor activities; however, some respondents might have considered those to be physical activities. We acknowledge that such choices were ultimately left to the discretion of the respondents. We used a convenience sampling strategy to recruit participants in Korea. Hence, the results are not a universal reflection of older adults, and the generalisability of our findings is limited. Thus, future studies need to be conducted with more diverse samples, such as those on older adults in other countries or ethnic groups, so as to better understand the association between various leisure activities and the well-being of older adults. In addition, the relatively low internal consistency of one of the instruments used in this study (dispositional optimism) also raises concerns regarding the reliability of the results. We retained the items because previous research has regarded the internal consistency coefficient of .56 as being modest (e.g. Ryff & Keyes, 1995; Vugt, Loeber, & Pardini, 2016).

Another limitation concerns the cross-sectional study design itself; such a design does not allow causal inferences. Hence, we cannot be sure that involvement in leisure activities is the cause of a higher level of well-being among older adults. For instance, it is possible that either engagement in social and cultural activities results in optimism among older adults or optimistic older adults participate to a greater extent in social and cultural activities. Further research employing a longitudinal study design is required to determine the possible causal relationship between leisure involvement and well-being in older adults. Implementing an experimental study design to measure actual improvement in well-being among older people using leisure engagement as a key intervention (e.g. a 12-week leisure activity intervention) is also required.

Finally, a majority of participants in this study were unemployed (93.1%). This category includes both the unemployed (71.8%) and the retired (21.3%). Most respondents who said that they were unemployed were female, which may be attributable to the fact that most of them were housewives. In addition, while various scales of well-being (e.g. psychological general well-being, happiness, quality of life, positive and negative affects and physical and mental health) have been used to measure individual well-being in previous research, our operational definition of well-being focused on life satisfaction, dispositional optimism and health perception.

Conclusion

Despite its limitations, this study supplements the substantial body of evidence, suggesting that social and volunteer activities are closely related to higher levels of well-being in older people and may contribute to improved well-being in later life. Our study suggests that staying connected with family and

friends through engagement in social activities and maintaining feelings of usefulness to others through involvement in productive activities may lead to more successful ageing. In addition, the current study sheds light on the impact that engaging in cultural activities has on older adults' levels of optimism and implies that engaging in social activities and volunteering may play a more important role in subjective health than mere involvement in physical activities. In conclusion, this study demonstrates that various types of leisure activities have different benefits with respect to improving well-being in older adults. Older adults should be encouraged to select a form of activity that is uniquely helpful to their physical and mental health and that is appropriate to their individual needs.

Disclosure statement

No potential conflict of interest was reported by the authors.

Notes on contributors

Jungsu Ryu holds a Ph.D. in the recreation, park and tourism sciences from Texas A&M University.

Jinmoo Heo is an associate professor in the Department of Sport Industry Studies at Yonsei University and an adjunct associate professor in the Department of Recreation, Park and Tourism Sciences at Texas A&M University.

References

- Adams, K. B., Leibbrandt, S., & Moon, H. (2011). A critical review of the literature on social and leisure activity and wellbeing in later life. *Ageing & Society*, 31, 683–712. doi:10.1017/S0144686X10001091
- Agyar, E. (2014). Contribution of perceived freedom and leisure satisfaction to life satisfaction in a sample of Turkish women. *Social Indicators Research*, 116, 1–15.
- Antonucci, T. C. (2001). Social relations: An examination of social networks and social support, and sense of control. In J. E. Birren (Ed.), *Handbook of the psychology of aging* (5th ed.). (pp. 427–453). San Diego, CA: Academic Press.
- Baltes, P. B., & Baltes, M. M. (1993). Psychological aspects on successful aging: The model of selective optimization with compensation. In P. B. Baltes, & M. M. Baltes (Eds.), *Successful aging* (pp. 1–34). Cambridge: University Press.
- Becchetti, L., Ricca, E. G., & Pelloni, A. (2012). The relationship between social leisure and life satisfaction: Causality and policy implications. *Social Indicators Research*, 108, 453–490.
- Broughton, K. A., Payne, L., & Liechty, T. (2016). An exploration of older men's social lives and well-being in the context of a coffee group. *Leisure Sciences*, 39, 1–16. doi:10.1080/01490400.2016.1178200
- Campos, A. C. V., Albala, C., Lera, L., Sánchez, H., Vargas, A. M. D., & Ferreira, E. F. (2015). Gender differences in predictors of self-rated health among older adults in Brazil and Chile. *BMC Public Health*, 15, 365. doi:10.1186/s12889-015-1666-9
- Chang, P. J., Wray, L., & Lin, Y. (2014). Social relationships, leisure activity, and health in older adults. *Health Psychology*, 33, 516–523. doi:10.1037/hea0000051
- Chun, S., Lee, Y., Kim, B., & Heo, J. (2012). The contribution of leisure participation and leisure satisfaction to stress-related growth. *Leisure Sciences*, 34, 436–449. doi:10.1080/01490400.2012.714704
- Diener, E. D., Emmons, R. A., Larsen, R. J., & Griffin, S. (1985). The satisfaction with life scale. *Journal of Personality Assessment*, 49, 71–75. doi:10.1207/s15327752jpa4901_13
- Duay, D. L., & Bryan, Y. C. (2006). Senior adults' perceptions of successful aging. *Educational Gerontology*, 32, 423–445. doi:10.1080/03601270600685636
- Dupuis, S. (2008). Leisure and aging well. *World Leisure Journal*, 50, 91–107. doi:10.1080/04419057.2008.9674538
- Everard, K. M., Lach, H. W., Fisher, E. B., & Baum, M. C. (2000). Relationship of activity and social support to the functional health of older adults. *The Journals of Gerontology Series B: Psychological Sciences and Social Sciences*, 55, S208–S212. doi:10.1093/geronb/55.4.S208
- Fernandez-Ballesteros, R., Zamarrón, M. D., & Ruiz, M. A. (2001). The contribution of socio-demographic and psychosocial factors to life satisfaction. *Ageing and Society*, 21, 25–43. doi:10.1017/S0144686X01008078
- Freund, A. M., & Baltes, P. B. (1998). Selection, optimization, and compensation as strategies of life management: Correlations with subjective indicators of successful aging. *Psychology and Aging*, 13, 531–543. doi:10.1037/0882-7974.13.4.531
- Geers, A. L., Wellman, J. A., & Fowler, S. L. (2013). Comparative and dispositional optimism as separate and interactive predictors. *Psychology & Health*, 28, 30–48. doi:10.1080/08870446.2012.707200

- Greenfield, E. A., & Marks, N. F. (2004). Formal volunteering as a protective factor for older adults' psychological well-being. *The Journals of Gerontology Series B: Psychological Sciences and Social Sciences*, 59, S258–S264. doi:10.1093/geronb/59.5.S258
- Hendricks, J., & Cutler, S. J. (2004). Volunteerism and socioemotional selectivity in later life. *The Journals of Gerontology Series B: Psychological Sciences and Social Sciences*, 59, S251–S257. doi:10.1093/geronb/59.5.S251
- Hoglund, M. W., Sadovsky, R., & Classie, J. (2009). Engagement in life activities promotes healthy aging in men. *Journal of Men's Health*, 6, 354–365. doi:10.1016/j.jomh.2009.09.032
- Huxhold, O., Miche, M., & Schüz, B. (2014). Benefits of having friends in older ages: Differential effects of informal social activities on well-being in middle-aged and older adults. *The Journals of Gerontology Series B: Psychological Sciences and Social Sciences*, 69, 366–375. doi:10.1093/geronb/gbt029
- Ikedo, A., Schwartz, J., Peters, J. L., Baccarelli, A. A., Hoxha, M., Dioni, L., ... Kubzansky, L. D. (2014). Pessimistic orientation in relation to telomere length in older men: The VA Normative Aging Study. *Psychoneuroendocrinology*, 42, 68–76. doi:10.1016/j.psyneuen.2014.01.001
- Jacobs, J. M., Cohen, A., Hammerman-Rozenberg, R., Azoulay, D., Maaravi, Y., & Stessman, J. (2008). Going outdoors daily predicts long-term functional and health benefits among ambulatory older people. *Journal of Aging and Health*, 20, 259–272. doi:10.1177/0898264308315427
- Jiang, W., Li, F., Jiang, H., Yu, L., Liu, W., Li, Q., & Zuo, L. (2014). Core self-evaluations mediate the associations of dispositional optimism and life satisfaction. *PLoS ONE*, 9, e97752. doi:10.1371/journal.pone.0097752
- Ju, H., Shin, J. W., Kim, C. W., Hyun, M. H., & Park, J. W. (2013). Mediation effect of meaning in life on the relationship between optimism and well-being in community elderly. *Archives of Gerontology and Geriatrics*, 56, 309–313. doi:10.1016/j.archger.2012.08.008
- Kelly, J. R. (1993). *Activity and aging: Staying involved in later life*. Newbury Park, CA: Sage.
- Kim, J., Lee, S., Chun, S., Han, A., & Heo, J. (2017). The effects of leisure-time physical activity for optimism, life satisfaction, psychological well-being, and positive affect among older adults with loneliness. *Annals of Leisure Research*, 20, 406–415. doi:10.1080/11745398.2016.1238308
- Kleiber, D. A., Hutchinson, S. L., & Williams, R. (2002). Leisure as a resource in transcending negative life events: Self-protection, self-restoration, and personal transformation. *Leisure Sciences*, 24, 219–235. doi:10.1080/01490400252900167
- Knappe, S., & Pinquart, M. (2009). Tracing criteria of successful aging? Health locus of control and well-being in older patients with internal diseases. *Psychology, Health & Medicine*, 14, 201–212. doi:10.1080/13548500802385717
- Kovar, M. G. (1983). Health assessment. In G. L. Maddox (Ed.), *The encyclopedia of aging* (pp. 434–443). New York, NY: Springer.
- Ku, P.-W., Fox, K. R., & Chen, L.-J. (2009). Physical activity and depressive symptoms in Taiwanese older adults: A seven-year follow-up study. *Preventive Medicine*, 48, 250–255. doi:10.1016/j.ypmed.2009.01.006
- Lampinen, P., Heikkinen, R. L., Kauppinen, M., & Heikkinen, E. (2006). Activity as a predictor of mental well-being among older adults. *Aging and Mental Health*, 10, 454–466. doi:10.1080/13607860600640962
- Lee, C., & Payne, L. L. (2015). Exploring the relationship between different types of serious leisure and successful aging. *Activities, Adaptation & Aging*, 39, 1–18. doi:10.1080/01924788.2015.994415
- Lher, U. (1993). A model of well-being in old age and its consequences for further longitudinal studies. In J. J. F. Schroots (Ed.), *Aging, health and competence* (pp. 293–300). Amsterdam: Elsevier.
- Liechty, T., Genoe, M. R., & Marston, H. R. (2017). Physically active leisure and the transition to retirement: The value of context. *Annals of Leisure Research*, 20, 23–38. doi:10.1080/11745398.2016.1187570
- Martinson, M., & Berridge, C. (2015). Successful aging and its discontents: A systematic review of the social gerontology literature. *The Gerontologist*, 55, 58–69. doi:10.1093/geront/gnu037
- McDowell, I. (2006). *Measuring health: A guide to rating scales and questionnaires*. Oxford: Oxford University Press.
- Menec, V. H. (2003). The relation between everyday activities and successful aging: A 6-year longitudinal study. *Journal of Gerontology*, 58, 74–82. doi:10.1093/geronb/58.2.S74
- Morrow-Howell, N., Hinterlong, J., Rozario, P. A., & Tang, F. (2003). Effects of volunteering on the well-being of older adults. *The Journals of Gerontology Series B: Psychological Sciences and Social Sciences*, 58, S137–S145. doi:10.1093/geronb/58.3.S137.
- Murphy, H. (2003). Exploring leisure and psychological health and wellbeing: Some problematic issues in the case of Northern Ireland. *Leisure Studies*, 22, 37–50. doi:10.1080/02614360306570
- Nimrod, G. (2007). Retirees' leisure: Activities, benefits, and their contribution to life satisfaction. *Leisure Studies*, 26, 65–80. doi:10.1080/02614360500333937
- Pagán, R. (2015). How do leisure activities impact on life satisfaction? Evidence for German people with disabilities. *Applied Research in Quality of Life*, 10, 557–572.
- Paillard-Borg, S., Wang, H. X., Winblad, B., & Fratiglioni, L. (2009). Pattern of participation in leisure activities among older people in relation to their health conditions and contextual factors: A survey in a Swedish urban area. *Ageing and Society*, 29, 803–821. doi:10.1017/S0144686X08008337
- Pasanen, T. P., Tyrväinen, L., & Korpela, K. M. (2014). The relationship between perceived health and physical activity indoors, outdoors in built environments, and outdoors in nature. *Applied Psychology: Health and Well-Being*, 6, 324–346. doi:10.1111/aphw.12031

- Pruchno, R., Heid, A. R., & Genderson, M. W. (2015). Resilience and successful aging: Aligning complementary constructs using a life course approach. *Psychological Inquiry*, 26, 200–207. doi:10.1080/1047840X.2015.1010422
- Ragheb, M. G. (1980). Interrelationships among leisure participation, leisure satisfaction and leisure attitudes. *Journal of Leisure Research*, 12, 138–149.
- Rowe, J. W. & Kahn, R. L. (1987). Human aging: usual and successful. *Science*, 237, 143–149.
- Rowe, J. W., & Kahn, R. L. (1997). Successful aging. *The Gerontologist*, 37, 433–440. doi:10.1093/geront/37.4.433
- Ryff, C. D., & Keyes, C. L. M. (1995). The structure of psychological well-being revisited. *Journal of Personality and Social Psychology*, 69, 719–727. doi:10.1037/0022-3514.69.4.719
- Sancho, P., Galiana, L., Gutierrez, M., Francisco, E. H., & Tomás, J. M. (2014). Validating the portuguese version of the satisfaction with life scale in an elderly sample. *Social Indicators Research*, 115, 457–466. doi:10.1007/s11205-012-9994-y
- Scheier, M. E., & Carver, C. S. (1987). Dispositional optimism and physical well-being: The influence of generalized outcome expectancies on health. *Journal of Personality*, 55, 169–210. doi:10.1111/j.1467-6494.1987.tb00434.x
- Scheier, M. F., Carver, C. S., & Bridges, M. W. (1994). Distinguishing optimism from neuroticism (and trait anxiety, self-mastery, and self-esteem): A re-evaluation of the Life Orientation Test. *Journal of Personality and Social Psychology*, 67, 1063–1078. doi:10.1037/0022-3514.67.6.1063
- Schweizer, K., & Koch, W. (2001). The assessment of components of optimism by POSO-E. *Personality and Individual Differences*, 31, 563–574. doi:10.1016/S0191-8869(00)00161-6
- Şener, A., Terzioğlu, R. G., & Karabulut, E. (2007). Life satisfaction and leisure activities during men's retirement: A Turkish sample. *Aging and Mental Health*, 11, 30–36. doi:10.1080/13607860600736349
- Shah, K. N., Lin, F. V., Yu, F., & McMahon, J. M. (2017). Activity engagement and physical function in old age sample. *Archives of Gerontology and Geriatrics*, 69, 55–60. doi:10.1016/j.archger.2016.11.007
- Srivastava, K., & Das, R. C. (2013). Personality pathways of successful ageing. *Industrial Psychiatry Journal*, 22, 1–3. doi:10.4103/0972-6748.123584
- Stobert, S., Dosman, D., & Keating, N. (2006). *Aging well: Time use patterns of older Canadians*. Ottawa, ON: Statistics Canada.
- Streiner, D., & Norman, G. R. (2004). *Health measurement scales: A practical guide to their development and use*. Oxford: Oxford University Press.
- Sun, W., Watanabe, M., Tanimoto, Y., Shibutani, T., Kono, R., Saito, M., ... Kono, K. (2007). Factors associated with good self-rated health of non-disabled elderly living alone in Japan: A cross-sectional study. *BMC Public Health*, 7, 297. doi:10.1186/1471-2458-7-297
- Trenberth, L. (2005). The role, nature and purpose of leisure and its contribution to individual development and well-being. *British Journal of Guidance & Counselling*, 33, 1–6. doi:10.1080/03069880412331335849
- Van Willigen, M. (2000). Differential benefits of volunteering across the life course. *The Journals of Gerontology Series B: Psychological Sciences and Social Sciences*, 55, S308–S318. doi:10.1093/geronb/55.5.S308
- Vollmann, M., Scharloo, M., Langguth, B., Kalkouskaya, N., & Salewski, C. (2014). Illness representations as mediators of the relationship between dispositional optimism and depression in patients with chronic tinnitus: A cross-sectional study. *Psychology & Health*, 29, 81–93. doi:10.1080/08870446.2013.828294
- Vugt, E., Loeber, R., & Pardini, D. (2016). Why is young maternal age at first childbirth a risk factor for persistent delinquency in their male offspring? Examining the role of family and parenting factors. *Criminal Behaviour and Mental Health*, 26, 322–335. doi:10.1002/cbm.1959
- Warr, P., Butcher, V., & Robertson, I. (2004). Activity and psychological well-being in older people. *Aging & Mental Health*, 8, 172–183.
- Weng, P. Y., & Chiang, Y. C. (2014). Psychological restoration through indoor and outdoor leisure activities. *Journal of Leisure Research*, 46, 203–217.
- Wheeler, J. A., Gorey, K. M., & Greenblatt, B. (1998). The beneficial effects of volunteering for older volunteers and the people they serve: A meta-analysis. *The International Journal of Aging and Human Development*, 47, 69–79. doi:10.2190/VUMP-XCMF-FQYU-V0JH
- Willits, F. K., & Crider, D. M. (1988). Health rating and life satisfaction in the later middle years. *Journal of Gerontology*, 43, S172–S176.
- Wilson, J. (2000). Volunteering. *Annual Review of Sociology*, 26, 215–240.
- Wood, C. (2008). *Museums of the mind: Mental health, emotional wellbeing, and museums*. London: Culture Unlimited.
- Zhang, J., Miao, D., Sun, Y., Xiao, R., Ren, L., Xiao, W., & Peng, J. (2014). The impacts of attributional styles and dispositional optimism on subject well-being: A structural equation modelling analysis. *Social Indicators Research*, 119, 757–769. doi:10.1007/s11205-013-0520-7