FACTORS ASSOCIATED WITH SUCCESSFUL AGEING

Tess Knight and Lina A. Ricciardelli

Abstract
This research explored the extent to which adaptability, self-acceptance, religiosity, attitudes to ageing, and flexibility are associated with seven criteria of successful ageing (health, activity, life satisfaction, personal growth, positive relationships, autonomy, and purpose in life). Also considered was the level of importance participants assigned to these criteria. The participants were 200 females and 140 males aged between 70 and 95 years. Structural equation modelling was employed to determine significant paths between the variables. Direct and mediating effects of older adults’ importance ratings for different criteria of successful ageing were analysed. The main factors associated with successful ageing were self-acceptance and flexibility, both of which contributed significantly to almost all of the criteria examined. Importance ratings did not play a mediating role. It was concluded that self-acceptance and flexibility might enhance the process of successful ageing and could be targeted in programmes that assist older adults to adjust to life changes.

Research question
“Successful ageing” is a term that has attracted much attention since its appearance in the literature in 1953 (Havighurst & Albrecht). Of interest to researchers and practitioners has been the heterogeneity of the population of older adults, and the enhancement of the quality of the later years of life (Baltes, 1993; Holstein & Minkler, 2003; Knight & Ricciardelli, 2003; Rowe & Kahn, 1997). The diversity of the older population challenges the focus on single success outcomes as measures of successful ageing and had led to a multicriteria approach to the study of the process of ageing successfully (Baltes & Baltes, 1990; Ryff, 1989a). A primary concern in the present study, one that has largely been ignored in the literature, is older adults’ perception of successful ageing. Five factors that older adults have identified as being associated with successful ageing are adaptability, self-acceptance, religiosity, attitudes toward ageing, and flexibility (Knight & Ricciardelli, 2003). The main aims of the present study were to evaluate the relationship these factors have with successful ageing and to investigate the multicriteria of the construct. Additionally, the level of importance older adults assign to the different criteria was examined.

A number of theoretical perspectives underpin the definition and exploration of the construct of successful ageing. The biopsychosocial approach (Murrell, Salsman, & Meeks, 2003), and the ego developmental theories are two of the major approaches.

Ego developmentalists such as Erikson (1982) and Loevinger (1976), are concerned with the gradual emergence of the individual’s sense of identity. An important aspect of this perspective is one’s perception of life. This approach is highlighted in the literature through use of the life review and the focus that some researchers (e.g., Rogers, 1980) have placed on the meaning people assign to growing old. Vaillant’s (1977) theory of successful adaptation to the challenges of life and Loevinger’s explanation of integration as the final stage of development, whereby a person is able to let go of that which cannot be attained, are closely related to Erikson’s psychosocial stages of development and may well explain people’s sense of satisfaction with life even in the face of age-related declines and losses.

Alternative theories of successful ageing are the activity theory (Havighurst & Albrecht, 1953) which focuses on a physically and socially active lifestyle, and the contrasting disengagement theory (Cumming & Henry, 1961) which proposes that accommodating to age-related losses through the culling of activities and social roles is central to ageing successfully.

The aim of the present study was to add to the understanding of successful ageing by examining how six factors (adaptability, self-acceptance, religiosity, attitudes toward ageing, flexibility, and individual’s importance ratings) are associated with the different criteria of successful ageing (health, activity, life satisfaction, personal growth, positive relationships, purpose in life, and autonomy). A further aim of the study was to examine correlations of the different criteria of successful ageing as perceived by older adults. Given the multi-dimensional nature of the construct it is important to establish the relationship between the criteria.
Methodological approach

Sample

The participants were 200 females (mean age = 76.68 years, SD = 4.75) and 140 males (mean age = 77.07 years, SD = 5.06). They were volunteers from senior citizens clubs, sporting clubs, retirement villages and nursing homes, and from personal contacts of the researcher. The majority of the participants were married (59.3%), 31.6% were widowed, 5% were single, and 4.1% were divorced or separated. Eighty-three percent of the participants were Australian-born, 9% were born in the United Kingdom, and 7.9% were from other countries, mostly in Europe (5.4%).

Measures

Criteria of Successful Ageing

Personal growth, positive relationships, autonomy, and purpose in life were measured by shortened versions of subscales from Ryff’s (1989a) Psychological Well-being Scale (PWBS). Shortened versions of the PWBS used in the past (Kling, Seltzer, & Ryff, 1997; Ryff & Keyes, 1995) correlated highly with 20-item parent scales (from .70 to .89, Ryff & Keyes, 1995). Internal consistency has been reported as high (Ryff, Lee, Essex & Schmutte, 1994) and there is evidence of the convergent and discriminant validity of the 20-item scale is presented in Ryff (1989a).

The health measure consisted of 12 items from Aldeman (1994) representing four dimensions of health. Perceptions regarding one’s health status was measured using two items. In the first item, participants were asked to rate their health on a five-point Likert scale (1 = poor, 2 = fair, 3 = good, 4 = very good, 5 = excellent). In the second item, participants were asked to rate how satisfied they were with their health, also on a five-point Likert scale (1 = not at all, 2 = not very, 3 = somewhat, 4 = very, 5 = completely). The scale is considered reliable and valid (see Aldemann, 1994).

Activity was measured by 14 items related to participation in social activities and active leisure activities. The former was measured using the Social and Family Contact Scale (Harris, 1975), which assesses the number of contacts the respondent has with close family and friends, weighted by how recent the contacts were (George Okun & Landerman, 1985). Participation in active leisure activities was measured using the length of time respondents reported spending in sporting activities, walking, gardening, and related activities (George et al., 1985).

The 11-item version (Markides, Levin & Ray, 1987) of the Life Satisfaction Index (Neugarten, Havighurst & Tobin, 1961) was used to assess satisfaction with life. Participants responded using a five-point Likert scale ranging from “strongly agree” (1) to “strongly disagree” (5). Markides et al. (1987) reported the internal consistency coefficient (Cronbach’s alpha) as .73.

Importance Ratings of Criteria of Successful Ageing

Based on results of a previous study (Knight & Ricciardelli, 2003), participants were asked to rate the importance of each of the criteria of successful ageing on an 11-point Likert scale ranging from 0 (not at all important) to 10 (extremely important).

Factors Influencing Successful Ageing

The adaptation scale consisted of 24 items based on Abraham and Hansson’s (1995) scale. The scale was developed from Baltes and Baltes’ (1990) model of adaptation that includes the strategies selection, optimization, and compensation used by individuals in the workplace to age successfully. Selection refers to the narrowing of activities. Optimization refers to using strategies to maximize capabilities in those areas selected. Compensation refers to making use of different strategies or external aids to make up for losses incurred. Alpha reliability estimates for the selection, optimization, and compensation scales in Abraham and Hansson’s study were .82, .93, and .90, respectively. Each scale consisted of six items. A five-point Likert scale ranging from “almost never” to “almost always” was used.

The self-acceptance scale consisted of six items from the self-acceptance dimension in the shortened version of Ryff’s Psychological Well-being Scale. Items were rated using a five-point Likert scale ranging from “strongly agree” (1) to “strongly disagree” (5). Internal consistency (co-efficient alpha) for this
dimension based on 14 items is .91. Convergent and discriminant validity for the parent 20-item scale have been reported as being good (Ryff, 1989a).

Three dimensions of religiosity (extrinsic, intrinsic, and perception of one’s religiosity) have been identified in the literature (Markides et al., 1987; Levin & Chatters, 1998). These dimensions were measured by single item scales. Frequency of church attendance was assessed using a six-point item that asked respondents to indicate how often they attended church (1 = at least once a week, 2 = two or three times a month, 3 = about once a month, 4 = about once every 3 months, 5 = once or twice a year or on special occasions, 6 = never). The practice of private prayer (non-organizational participation) was assessed using a six-point item that asked respondents whether they prayed or performed any private religious activity other than in church (1 = several times a day, 2 = about once a day, 3 = several times a week, 4 = about once a week, 5 = only on special occasions, 6 = almost never or never). Self-rated religiosity was assessed using a single five-point item that asked respondents whether they were highly, very, somewhat, not very, or not at all religious.

A 16-item subscale of The Age Attitude Scale (Brathwaite, Lynd-Stevenson, & Pigram, 1993) was used. Braithwaite et al. reported the internal reliability for this subscale as measured by Cronbach's alpha as being .86. Results showed positive and significant correlations with other measures of attitude to ageing scales, with coefficients ranging from .30 to .41. A six-point Likert scale was used ranging from “strongly agree” (1) to “strongly disagree” (6).

Sixteen items measuring the factor “openness to experience” in relation to the facets of “actions” and “values” from Costa and McCrae’s (1985) Revised NEO Personality Inventory (NEO PI-R) were used to measure flexibility in personality. High scorers on the “actions” scale are described as preferring novelty and variety to routine. High scorers on the “values” scale tend to be less conservative and more willing to re-examine values they hold. Test-retest reliability over 3 months for the openness to experience scale was reported at .86 (Costa & McCrae, 1992) and construct validity was supported through correlations with other personality scales. Convergent validity has been shown, with facet scales correlating significantly and positively with other similar scales (coefficients ranging from .33 to .67) (Costa & McCrae, 1992). Internal reliability for openness to experience, as measured by Cronbach’s alpha, was .73.

Procedure
Ethics approval was granted and consenting participants completed the questionnaire, which included a brief introduction to the study along with a statement regarding the anonymous nature of the questionnaire and a plain language statement outlining the study more fully. Participants were invited to telephone the researcher if they wanted assistance in completing the items (in which case, an interview time would be arranged where the interviewer could read the items to the participant and mark his/her response). None of the participants requested assistance with completing the questionnaire. It was anticipated that the questionnaire would take approximately 20 minutes to complete. Forty percent of participants returned their surveys.

Results
Structural Equation Modelling using AMOS (Arbuckle & Wothke, 1999) was conducted to establish the relationship of importance ratings and the examined factors to the different criteria of successful ageing (health, activity, life satisfaction, personal growth, positive relationships, purpose in life, and autonomy). Seven models depicting each of the criteria of successful ageing were tested for goodness-of-fit and significant paths. Each model included composites of the factors associated with successful ageing, with the importance rating for the criterion variable included as a mediator. Scale scores for observed variables were used in the structural models, with the measurement error variance ($\sigma^2 x [1-r]$) and regression weights ($\sigma x \beta r$) fixed accordingly (Byrne, 2001).

The first models tested did not fit the data well and thus modification in specifications was required for representation of the sample data by the models (Byrne, 2001). The fit indices for each proposed and revised model tested are reported in Table 1. All of the adjusted models fitted the data well except the model for activity, for which TLI = .65. Although Chi-square values were significant, fit indices were >.90 and RMSEA < .05. Significant paths in each of the models were constrained to be equal for both groups.

125
and a Chi-square difference test was employed to establish whether there was a significant difference between males and females with respect to the parameters. In each model, the Chi-square difference was non-significant, indicating that the estimated parameters were similar for males and females. As there was no significant difference between the parameters, the constrained model, being the most parsimonious, was adopted.

Table 1
Fit Indices for Mediating Models of Importance Ratings on Criteria of Successful Ageing for Males and Females

<table>
<thead>
<tr>
<th>Criterion</th>
<th>$\chi^2$</th>
<th>df</th>
<th>p</th>
<th>GFI</th>
<th>AGFI</th>
<th>TLI</th>
<th>CFI</th>
<th>RMSEA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Life satisfaction</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hypothesized</td>
<td>133.20</td>
<td>42</td>
<td>.00</td>
<td>.93</td>
<td>.85</td>
<td>.18</td>
<td>.52</td>
<td>.08</td>
</tr>
<tr>
<td>Revised</td>
<td>52.72</td>
<td>35</td>
<td>.03</td>
<td>.97</td>
<td>.93</td>
<td>.81</td>
<td>.91</td>
<td>.04</td>
</tr>
<tr>
<td>Autonomy</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hypothesized</td>
<td>133.20</td>
<td>42</td>
<td>.00</td>
<td>.93</td>
<td>.85</td>
<td>.17</td>
<td>.51</td>
<td>.08</td>
</tr>
<tr>
<td>Revised</td>
<td>51.32</td>
<td>34</td>
<td>.03</td>
<td>.97</td>
<td>.93</td>
<td>.80</td>
<td>.91</td>
<td>.04</td>
</tr>
<tr>
<td>Purpose in life</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hypothesized</td>
<td>133.20</td>
<td>42</td>
<td>.00</td>
<td>.93</td>
<td>.85</td>
<td>.37</td>
<td>.63</td>
<td>.08</td>
</tr>
<tr>
<td>Revised</td>
<td>80.30</td>
<td>47</td>
<td>.00</td>
<td>.96</td>
<td>.91</td>
<td>.80</td>
<td>.90</td>
<td>.05</td>
</tr>
<tr>
<td>Health</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hypothesized</td>
<td>156.56</td>
<td>60</td>
<td>.00</td>
<td>.93</td>
<td>.87</td>
<td>.49</td>
<td>.66</td>
<td>.07</td>
</tr>
<tr>
<td>Revised</td>
<td>72.47</td>
<td>50</td>
<td>.02</td>
<td>.97</td>
<td>.93</td>
<td>.86</td>
<td>.92</td>
<td>.04</td>
</tr>
<tr>
<td>Personal growth</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hypothesized</td>
<td>133.20</td>
<td>42</td>
<td>.00</td>
<td>.93</td>
<td>.85</td>
<td>.40</td>
<td>.65</td>
<td>.08</td>
</tr>
<tr>
<td>Revised</td>
<td>58.99</td>
<td>37</td>
<td>.01</td>
<td>.97</td>
<td>.93</td>
<td>.83</td>
<td>.92</td>
<td>.04</td>
</tr>
<tr>
<td>Relationships</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hypothesized</td>
<td>133.20</td>
<td>42</td>
<td>.00</td>
<td>.93</td>
<td>.86</td>
<td>.03</td>
<td>.44</td>
<td>.08</td>
</tr>
<tr>
<td>Revised</td>
<td>55.75</td>
<td>39</td>
<td>.04</td>
<td>.97</td>
<td>.94</td>
<td>.81</td>
<td>.90</td>
<td>.04</td>
</tr>
<tr>
<td>Activity</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hypothesized</td>
<td>133.20</td>
<td>42</td>
<td>.00</td>
<td>.94</td>
<td>.87</td>
<td>.06</td>
<td>.38</td>
<td>.08</td>
</tr>
<tr>
<td>Revised</td>
<td>55.52</td>
<td>33</td>
<td>.01</td>
<td>.97</td>
<td>.93</td>
<td>.65</td>
<td>.84</td>
<td>.05</td>
</tr>
</tbody>
</table>

Note: GFI, goodness-of-fit index; AGFI, adjusted goodness-of-fit index; TLI, Tucker-Lewis index; CFI, comparative fit index; RMSEA, root mean square error of approximation.

Results of these analyses showed that self-acceptance was a factor associated with every criterion of successful ageing examined in this study, with the exception of activity and personal growth. Flexibility also contributed to the influence on every criterion, with the exception of health and positive relationships. Attitudes to ageing was shown to contribute to the influence on life satisfaction, autonomy, and health. Compensation contributed to the influence on personal growth, purpose in life, and autonomy, and optimization contributed to the influence on autonomy. Selection did not contribute to the influence on any of the criteria of successful ageing, and importance of positive relationships was the only importance rating that had an influence on the criteria. The amount of variance in the criteria of successful ageing explained by the factors was 25% in activity, 27% in health, 44% in life satisfaction, 51% in autonomy, 59% in positive relationships, 66% in personal growth, and 87% in purpose in life.

Discussion
In the present study, self-acceptance was positively associated with every criterion of successful ageing, with the exception of activity and personal growth. These findings show self-acceptance to correlate most strongly with positive relationships, autonomy, life satisfaction, and purpose in life. The findings are supportive of Ryff’s (1991) study, and indicate that the ability to accept oneself may play an important part in whether older adults continue to hold goals for the future, which give them something to work toward and look forward to. Looking forward in this way may, in turn, impact upon other areas of life such as life satisfaction and personal growth. Previous findings that life satisfaction largely tends to remain high in old age (Baltes & Baltes, 1990; Heidrich, 1999) may well be reflective of people’s level of self-acceptance.
Flexibility was also associated with every criteria of successful ageing, with the exception of health and positive relationships. It has been suggested that having a flexible personality would greatly assist in the ability to adapt to losses incurred due to ageing (Knight & Ricciardelli, 2003). Results of the present study, however, showed that flexibility did not correlate strongly with the measures of adaptability.

Evidenced in this study is the importance of flexibility in the prediction of personal growth and autonomy, which reflect a sense of realising one's potential and a regulation of behaviour from within that demonstrates self-knowledge and effectiveness (Ryff, 1989b). This suggests that flexibility may impact upon a person's capacity to reassess his/her abilities in order to adjust and continue to strive to reach one's full potential.

Attitudes toward ageing were positively associated with two criteria of successful ageing: life satisfaction, and health. Past research has shown that attitudes toward ageing held by others can greatly affect older adults' perceptions of themselves, their health, their behaviour (Sokolovsky, 1993), and their self-worth in the social context (Bodily, 1991; Grant, 1996). The present study showed that positive attitudes to ageing were indicative of higher scores on self-ratings of health and life satisfaction.

Compensation was positively associated with personal growth, purpose in life, and autonomy. The ability to compensate for losses is an important strategy for the older adult faced with age-related declines (Baltes & Baltes, 1990). Practical compensatory strategies, such as the use of a wheelchair or a hearing aid, have been identified as ways of maintaining self-esteem and control (Brandstätter & Greve, 1994). The results of the present study provide evidence that is consistent with theories of adaptation (Baltes & Baltes, 1990; Brandstätter & Greve, 1994) as autonomy relates strongly to being in control. It seems that older adults make use of compensation to remain in control of aspects of their lives. This ability to compensate allows for the development of attainable goals and, hence, may foster a sense of purpose in life.

Optimization was positively associated with autonomy. This adaptive strategy reflects the ability to improve in specific areas and, as such, could assist the older adult to remain independent on a number of different levels. However, selection was not significantly associated with the criteria of successful ageing. Religiosity was not associated with any criteria of successful ageing examined in this study. In contrast, previous research has shown that church attendance, private prayer, and self-perception of how religious a person is are of importance to older adults (e.g. Ramsey, 2001). Other research has shown an increase in religiosity with age (e.g. McFadden, 1996). Knight and Ricciardelli (2003) also showed that religion was central to many of the participants' lives and that without their religious beliefs, these participants felt sure they would have great difficulties coping with age-related losses. It is difficult to ascertain why religiosity was not a factor that was associated with criteria of successful ageing in the present study. One possibility is that the meaning people assign to religiosity is not reflected in the measurement used, the focus of which was participation in religious activities. Given that religiosity has been identified as being important to ageing successfully, researchers need to examine the way in which this construct can be adequately measured to reflect that importance, by taking into account personal meanings assigned to the construct.

Summary and contribution to an ageing agenda
Of the factors examined in the present study, we have identified self-acceptance and flexibility as most strongly associated with successful ageing. The variance explained by the factors was highest for purpose in life, personal growth, and positive relationships. However, this study was not without limitations. The correlational and cross-sectional nature of the research did not allow for a causal relationship to be established between the examined variables. Longitudinal studies would allow the examination of temporal relationships between different influencing factors and criteria of successful ageing. It is also evident that the measurements used for religiosity and adaptability were limited, and further research into these constructs is needed. Although a 40% response rate is considered a good response rate for survey research, there is still the problem of biased sampling in that those who responded to a questionnaire about successful ageing may well have been those who saw themselves as successful in a number of different
ways. Despite these limitations, the results of the present study can be used to improve future programs for older adults in the community. Those who could be targeted as benefiting most would be people who profess to no longer hold goals for themselves. Carers could be encouraged to assist in developing short-term and long-term goals that are relevant to the individual and that give some sense of purpose in life. In light of the present findings, older adults could also be assisted to accept themselves and to accept their present situations through programs that target this ability. Carers could assist older adults to view situations they find themselves in from different perspectives. This would hopefully encourage older adults to accept the challenges of life, and to develop coping mechanisms, especially in situations where control is limited.

References


129