

Living with Ill-Health in Older Age: The Role of a Resilient Personality

Gill Windle · Robert T. Woods · David A. Markland

Published online: 22 October 2009
© Springer Science+Business Media B.V. 2009

Abstract This paper tests the hypothesis that a resilient personality moderates the impact of ill-health on subjective well-being. A cross-sectional survey drew a random sample of 1,847 people from England, Wales and Scotland aged between 50 and 90. Participants were interviewed face-to-face in their own homes. This paper examines demographic data, life satisfaction, psychological resources and ill-health. The direct and moderating effects were analysed using the method of multiple regression. Significant main effects of resilience and ill-health on life satisfaction were found in all of the age-groups. In three of these (60–69, 70–79 and 80–90) the addition of the interaction term was associated with a significant increase in the size of the effect, indicating a resilient self moderated the negative effect of ill-health on subjective well-being. Resilient resources can be a valuable mechanism for maintaining well-being and understanding differential resistance to, and recovery from ill-health in later life.

Keywords Psychological resources · Resilience · Ill-health · Subjective well-being · Moderator

1 Introduction

Population ageing is emerging as a worldwide trend, reflecting improvements in health services, education and economic development, increases in life expectancy and falls in

G. Windle (✉) · R. T. Woods
Institute of Medical and Social Care Research, Bangor University,
Arduwy, Holyhead Road, Bangor, Gwynedd LL57 2PX, UK
e-mail: g.windle@bangor.ac.uk

R. T. Woods
e-mail: b.woods@bangor.ac.uk

D. A. Markland
School of Sport, Health and Exercise Sciences, Bangor University,
George Site, Holyhead Road, Bangor, Gwynedd LL57 2PX, UK
e-mail: d.a.markland@bangor.ac.uk

fertility. In order to successfully accommodate these demographic changes and enable a fulfilling older age, there is substantial interest within public policy and society as to how quality of life can be maintained and enhanced in older age, and how people respond to the various challenges of ageing (Bowling 2004). Drawing on the lifespan developmental perspective of ageing (decline, change, stability and growth), this paper examines a key challenge in older age; ill-health, its' relationship with subjective well-being and the intervening influence of psychological resources.

The rationale for focussing on this relationship is twofold. First, ageing can be associated with losses in a number of life domains (Baltes and Mayer 1999), particularly biological changes in health status that increase the risk of illness, death or disability (Office for National Statistics 1999). Although life expectancy has increased and mortality decreased, there is some debate as to whether there have also been improvements in morbidity in older age (Office for National Statistics 1999). In the last UK Census, the proportion reporting their health as 'not good' increased with age from 12 to 13% of men and women aged 50–54 to over 30% of those aged 85 and over (Office for National Statistics 2005, p. 42). In terms of limiting long standing illness the Census found this to also increase with age, from 20% of men and women aged 50–54 to over 70% of those aged 85 and over. Given the prevalence of ill-health it is clear that in developed countries such as the UK a substantial proportion of people are currently living with chronic conditions.

Second, it is reasonable to assume that reductions in health status would have a detrimental effect on well-being, and indeed there is evidence to support this assumption. Reductions in physical health, physical functioning and most health problems have been linked to poor and worsening levels of life satisfaction (Bowling et al. 1993, 1997). At the other end of the spectrum a recent survey in Scotland found that good health was cited as most important in having a happy older age in both younger and older respondents (Scottish Executive 2006).

Yet the evidence can be contradictory; subjective well-being has been found to remain relatively stable over time (e.g. Bowling et al. 1996). A survey of almost 60,000 adults in 40 nations found that life satisfaction actually increased slightly from the twenties into the eighties, with little variation in the eldest two decades (Diener and Suh 1998). Other research has found that the subjective well-being scores of older adults are often in the same range as those of younger people (Baltes 1993). This disparity in the positive relationship between increasing age and subjective well-being, despite the increasing influence of risk factors such as poor health has been termed the 'well-being paradox' (Staudinger 2000) or the 'satisfaction paradox' (Diener et al. 1999).

There are theoretical perspectives that help explain this paradox and highlight the role of regulatory mechanisms that are central to the individual. Top-down theory (Diener 1984) predicts that aspects central to the individual's personality influence the way a person might react to situations and life changes such as ill-health. Consequently a positive interpretation could maintain acceptable levels of well-being. In terms of the Stress Process Model (Pearlin et al. 1981) personality resources could to protect individuals in the face of adversity and lead to positive adaptive behaviour by moderating or 'buffering' the effects of stressors such as failing health. In the context of the model of selective optimization with compensation, how individuals can deal with ageing and the age-related tendency for increased losses and fewer gains are determined by regulatory processes (Baltes 1993). Consequently the moderating influence of a resilient personality may compensate for change or adversity. Continuity theory also emphasises the importance of inner resources

such as the personality/self, goals and coping strategies to maintain satisfaction with life despite changes in health, functioning and social circumstances (Atchley 1989).

Given the theoretical basis it is reasonable to suggest that psychological resources will have an important influence on the relationship between some of the key factors associated with ageing and subjective well-being. Yet it has previously been suggested that little attention has been given to the potential for psychological attributes to moderate relationships in older age (Kempen et al. 1999). More recently this absence has been confirmed in a review of the quality of life literature (Bowling 2004). This review reports that when psychological variables have been considered for their intervening role, the research has been largely conducted on either patients with diagnosed mental health problems or college student research populations. Older populations have been neglected (Bowling 2004, p. 2).

It would then appear that there is a need for research to examine the potential of intervening psychological mechanisms in a non-clinical population sample of older people. Understanding these relationships is important, as in the UK there is increasing interest in well-being from policy and practice. If a resilient personality moderates ill-health, the development of interventions to enhance resilience could be beneficial to the individual and society. This paper takes the position that a resilient personality plays a key role in the relationship between ill-health and subjective well-being, with psychological resources central to the self enabling psychological resilience.

1.1 What is Psychological Resilience?

In its simplest sense, resilience has been described as being able to recover from or adjust to misfortune or change. It was derived from observations that although exposed to substantial stressors and risks, people can still function positively and recover quickly from set-backs (Rutter 1995). Psychological resilience is thought to be important in late life as a component of successful psychosocial adjustment (Wagnild and Young 1993).

In terms of measurement, psychological resilience has been referred to as both an outcome and as part of an internal process. As an outcome it has been measured as a positive response to a stressful life event. For example Bonanno et al. (2006) defined psychological resilience as one or no symptoms of post traumatic stress disorder in New York City residents after the attack on September 11th. However, the conceptualisation of resilience as the response to a stressful event such as this has a drawback. It does not enable a deeper understanding of the internal personality characteristics and processes that could promote psychological resilience.

In considering the inner psychological qualities of resilient individuals Rutter (1987) emphasises self efficacy, self esteem and a range of problem solving skills. Others describe resilient individuals as possessing self confidence, curiosity, self-discipline, self-esteem and control over the environment, intellectual functioning and self-perceptions such as self efficacy (Beardslee 1989; Masten 1999). In a Spanish study of people aged 75 and over, the authors suggest that self efficacy played an important role in maintaining psychological resilience in advanced older age (Navarro et al. 2006). Personal competence and acceptance of self and life are two constructs that were developed into a 25 item scale to assess resilience in older adults (Wagnild and Young 1993). However, limited research has incorporated this measure, or undertaken any robust psychometric assessment of its factor structure. It appears then that there are a range of personality resources that are thought to be indicators of psychological resilience that require further investigation. Within this framework psychological resilience can be defined as an aspect of personality that acts as a protective factor against risks and adversities.

The development of specific literatures around constructs such as self esteem, self efficacy and control is substantial. Within personality research such constructs are often examined individually in discrete analyses, and less attention has been given to the possibility that they might share a common basis (Judge et al. 2002). Whilst acknowledging that not all specific traits might indicate an overarching construct, these authors state that “new and existing measures must be evaluated on the basis of a possible common core when there is reason (on empirical and/or theoretical grounds) to believe that such a commonality exists” (Judge et al. 2002, p. 693).

Given the wider scope for the range of psychological resources that could be considered indicators of a common core—a resilient self—previous work by the authors of this paper (Windle et al. 2008) undertook secondary analysis of a large data set ($N = 1,847$) and examined the theoretical and subsequent psychometric nature of a number of constructs available within the data (self esteem, personal efficacy, interpersonal control, socio-political control, personal competence and self acceptance) in older people. It was hypothesised that a resilient self could be explained by the contribution of such resources. In that work, confirmatory factor analysis addressed conceptual overlap between individual items and reduced the data to find that a common factor (a higher order construct) provided the best explanation for the relationships between three of these personality resources (self esteem, interpersonal control, personal competence) which are central to the self. This theoretical and empirical examination suggested that internal psychological processes could explain psychological resilience, which in turn may enable positive adaptation to adversity.

A limitation of this previous work is that the model tested was limited by the constraints of the data. Although theoretically plausible, it represents just one of many possible approaches to resilience in older age. But the work took a novel approach to the topic and attempted rigorous analyses to further the understanding of psychological resilience. Indeed, it is possible that despite some of the limitations, the model might adequately capture the essential psychological resources that are important for mental health and well-being in older age.

This paper examines this position. It expands on this previous work by examining the influence of this measure of a resilient personality as one of the pathways underpinning successful adaptation to a stressor, namely ill-health, using the moderating hypothesis (see Fig. 1). This hypothesis states that a moderator variable is one that influences the direction and/or strength of the relation between a predictor variable and an outcome variable (Baron and Kenny 1986). It is hypothesised that the presence of a resilient self in the face of the ill-health stressor will provide a compensatory mechanism that supports subjective well-being.

The second part of this hypothesis addresses age differences. Despite the potential benefits of a resilient self, it has been suggested that the psychological adaptation

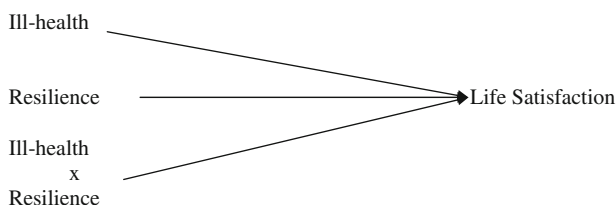


Fig. 1 Moderator model

capacities of older people might reach their limits in very old age (Baltes et al. 1999). To ascertain whether the moderation hypothesis has a differential effect according to age, this paper will analyse data across four specific age groups (50–59, 60–69, 70–79 and 80–90).

2 Method

2.1 Design

The data were collected in a cross-sectional survey as part of the European Study of Ageing Well (ESAW) in 2003. Six West European countries participated in the study: Austria, Italy, Luxembourg, the Netherlands, Sweden and Britain. This paper uses the British data, which was drawn from people in England, Wales and Scotland aged 50–90.

2.2 Sampling Procedure

The initial target sample for the UK was set at 2000. In order to develop a sample that represented as equally as possible residents from England, Scotland and Wales the sample was divided equally between the three countries. Population statistics for each age group were used to generate a proportionate stratified probability sample of the national population aged between 50 and 90. The national sample was controlled across four age groups (of each 10 year) and sex (combining to eight groups), and for urban/rural distinction. In each UK country two study sites were chosen reflecting both urban and rural locations. In order to locate respondents, a door-to-door census was conducted in each of the districts using post code generated addresses. Interviewers called at the addresses and recorded whether anyone within the target age range (50–90) lived there. This information was entered into a database and used to generate a randomly selected sample for subsequent interviews.

2.3 Data Collection

The questionnaire was administered to respondents by interviewers face-to-face in their own home. Interviewers were recruited and trained by the research team. The project funders did not require ethical approval to be obtained. However, this project ensured that clear ethical and professional conduct guidelines were adopted by all involved. Guidelines for professional conduct and guidelines for ethical considerations were circulated to the interviewers prior to the meeting and were reiterated at the training sessions. After training, interviewers understood the necessity of obtaining consent from interviewees, issues regarding confidentiality and contact with respondents. The final number of completed questionnaires was 1853, yielding a total response rate of 49%. A decision was taken by the project co-ordinator not to record for analysis the reasons for non-response, so an examination of these factors is not possible. Table 1 shows the demographic profile of the respondents.

2.4 Measures

The full ESAW questionnaire covered a wide range of areas—social support, health, activities, psychological factors and material resources. For this analysis, demographic

Table 1 Characteristics of the respondents

Variable	50–59 <i>N</i> (%)	60–69 <i>N</i> (%)	70–79 <i>N</i> (%)	80–90 <i>N</i> (%)
Gender				
Male	239 (44.7)	292 (43.4)	226 (47.7)	67 (40.6)
Female	296 (55.3)	381 (56.6)	248 (52.3)	98 (59.4)
Marital status				
Single	39 (7.3)	57 (8.5)	32 (6.8)	13 (7.9)
Married	406 (75.9)	455 (67.7)	269 (57.0)	70 (42.4)
Widowed	25 (4.7)	100 (14.9)	153 (32.4)	79 (47.9)
Divorced/separated	65 (12.1)	60 (8.9)	18 (3.8)	3 (1.8)
Lives alone	80 (15.3)	164 (25.0)	172 (37.0)	80 (49.1)
Economic situation				
Employed full time	200 (39.0)	60 (9.0)	7 (2.0)	3 (2.0)
Employed part time	112 (22.0)	73 (12.0)	18 (4.0)	1 (0.7)
Retired	128 (25.0)	520 (79.0)	443 (95.0)	155 (97.0)

information on age, gender, education and marital status was recorded. For the purpose of the analyses, the age of the respondent was also coded into four age brackets (50–59, 60–69, 70–79 and 80–90).

2.5 Health

Twenty-six items assessed the presence of chronic disorders. These were taken from the Older American's Resources and Services Multidimensional Functional Assessment Questionnaire (OARS). They were collapsed together giving a score of 0–26 as suggested in the OARS manual, with the total number of illnesses indicating overall physical health status. This type of symptoms checklist measure is regularly used as an 'objective' indicator of health in surveys and it has been found to correlate well with the results of medical examinations (Pinquart 2001).

2.6 Outcome Variable

Subjective well-being was examined by the life satisfaction index (Wood et al. 1969). The scale was developed for use with older populations and different ethnic groups, and is commonly used to measure well-being in gerontology research. It is a 13 item global measure of past, present and future states and is considered to be an indication of successful aging. Respondents were asked whether they agreed or disagreed with each of the items relating to satisfaction with life. Each item is scored 0, 1 or 2, with the total score ranging from 0 to 26. In the initial scale development, reliability was found to be 0.79 using a split half reliability coefficient (Wood et al. 1969). Cronbach's Alpha in this analysis was .80.

2.7 Resilience

Resilience was examined using a measure developed in other work (Windle et al. 2008). It consists of 19 items that represent the constructs of self esteem, inter-personal control and

personal competence (e.g. ‘when I make plans I persevere with them’, ‘I take a positive attitude towards myself’). Responses were scored on a Likert scale according to the extent to which the participant agreed/disagreed with the statements. The items were collapsed into their respective factors. These were then standardised a final score calculated. Higher scores indicate higher levels of resilience. The reliability (Chronbach’s Alpha) is .83.

2.8 Data Analysis

Post stratification weights were computed in order to account for any age and gender differences between the target and actual sample, and strengthen the representativeness. The formula for these weights is:

$$w = p_p/p_s$$

where p_p is the population proportion, and p_s is the sample proportion.

One way ANOVA’s were used to examine age group differences in the continuous measures. Multiple regression procedures were used to assess moderation. This method is preferable to ANOVA in this analysis due to the continuous nature of the outcome, moderator and main predictor variables. The analytical procedure followed the criteria of Baron and Kenny (1986). To calculate the interaction term for the moderation analysis continuous variables were firstly centred. Centring puts each variable in deviation form by subtracting its group mean from each observed score and produces a meaningful 0. It is also recommended that if variables are centred for the interaction terms, then the rest of the predictors should also be centred (Cohen et al. 2003). The interaction was computed as the product of the moderator (resilience) and the predictor variable (ill-health). In the following analyses the moderation hypotheses are supported if the interaction and the increase in the amount of variance explained (r^2) are significant whilst controlling for the main effects of the predictor, the moderator and control variables (marital status, gender and education level). To further understand the nature of the interaction the regression equations are plotted using high or low values (+1 SD or –1 SD) of the predictor variables as recommended by Cohen et al. (2003).

3 Results

Table 2 presents the descriptive figures for the measures. As age increased there was a significant increase in the number of illnesses $F(3,1839) = 41.30, p < .001$. Post hoc analysis found that the differences between the 50 and 59 age group with the 60–69, 70–79 and 80–90; and the 60–69 with the 70–79 were significant. The life satisfaction scores differed across the age groups $F(3,1812) = 3.86, p < 0.01$. Post hoc analysis found that this difference existed between the highest scoring 60–69 age group and the lowest scoring 80–90 age group, although this difference was small (mean difference = 1.51, $p = 0.02$). The resilience scores also varied by age $F(3,1800) = 6.94, p < 0.001$ again, the 60–69 year olds had the highest score which was better than the 70–79 age group (mean difference = 1.19, $p = 0.03$) and the 80–90 age group (mean difference = 2.51, $p < 0.001$).

Table 3 presents the results of the moderation analyses. In all age groups, there are significant main effects on well-being for resilience and ill-health. A moderating effect of resilience on the ill-health—well-being link was found in all of the age groups except the 50–59 year olds when the interaction term was entered (model 2). In terms of effect, the

Table 2 Means, standard deviations and correlations among the variables

Variable	50-59		60-69		1	2	3	4	5	6
	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>						
1. Gender	-	-	-	-		-.03	-.07	-.01	-.01	.03
2. Married	-	-	-	-	.11**		.31***	-.06	.15***	.008
3. Life Satisfaction	17.65	6.56	18.49	5.51	.008	.21***		-.30**	.49***	.18***
4. Illnesses	1.46	1.61	1.94	1.80	.02	-.13***	-.28**		-.26**	-.16**
5. Resilience	49.43	7.24	50.45	6.74	-.01	.04	.48***	-.23**	.	.09*
6. Education	-	-	-	-	.13***	.10**	.18***	-.12**	-.01	
Variable	70-79		80-90		1	2	3	4	5	6
	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>						
1. Gender	-	-	-	-	.	.25***	.001	.02	.03	.05
2. Married	-	-	-	-	.31***		.16***	-.06	.03	.13**
3. Life Satisfaction	17.99	5.35	16.98	5.50	-.03	.11			.46***	.15***
4. Illnesses	2.65	2.12	2.64	1.88	.01	-.10	-.23**		.26***	-.10*
5. Resilience	49.25	6.73	47.93	6.28	-.02	.02	.49***	-.24**		.15***
6. Education	-	-	-	-	.06	.12	.15	-.11	.02	

Coefficients above the diagonal are for the 50–59 and 70–79, below the diagonal 60–69 and 80–90

*** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$

total amount of variance explained varied for each cohort ranged from the largest amount (36%) in the 50–59 age group and the smallest (19%) in the 80–90 age group (see Table 3). With the exception of the 50–59 age group, a significant increase in r^2 was found when the interaction was entered.

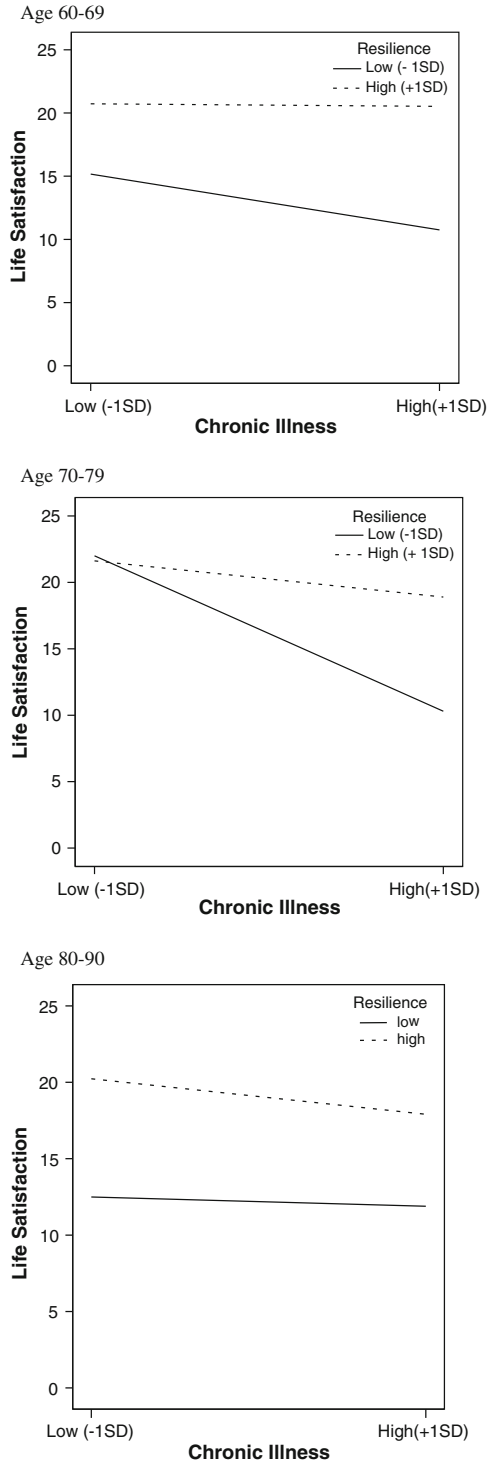
Figure 2 demonstrates the nature of the significant interactions. Although higher resilience moderates the impact of ill-health for these three groups, it is useful to consider the differing nature of these interactions using terms suggested by Luthar (1993). For the 60–69 age group, the interaction can be described as ‘protective stabilising’; here higher levels of resilience give stability in well-being despite increases in ill-health. For the 70–79 age group, there is less stability in well-being at higher levels of resilience across low and high levels of ill-health, although the slopes graph indicates that this could be described as

Table 3 Predictors of subjective well-being with ill-health \times resilience interaction

	50–59			60–69			70–79			80–90		
	<i>B</i>	<i>SE B</i>	β	<i>B</i>	<i>SE B</i>	β	<i>B</i>	<i>SE B</i>	β	<i>B</i>	<i>SE B</i>	β
Gender	-.83	.40	-.06	-.02	.43	-.002	-.38	.49	-.04	-.71	.85	-.06
Married	3.57	.47	.23***	1.91	.46	.16**	1.53	.49	.14**	.90	.78	.08
Education	.29	.12	.07*	.33	.13	.09**	.28	.17	.07	.37	.26	.10
Illnesses	-.76	.13	-.18***	-.48	.13	-.15***	-.56	.11	-.22***	-.68	.22	-.23***
Resilience	.39	.03	.43***	.33	.03	.40***	.21	.04	.27***	.38	.06	.43***
Resilience \times ill-health	-.006	.01	.01	.05	.01	.11***	.07	.02	.19***	.06	.03	.21*
Adjusted R^2 (before interaction)	.36***			.27***			.21***			.17***		
Adjusted R^2 (sig. <i>F</i> changed noted)	.36			.28**			.24***			.19*		

*** $p < .001$, ** $p < .01$, * $p < .05$

Fig. 2 Interaction between ill-health and resilience



‘protective reactive’. This means that resilience does provide an advantage, but slightly less so when ill-health is higher. For this age group, lower levels of resilience and higher ill-health were particularly detrimental to well-being. For the 80–90 age group the interaction could also be described as ‘protective reactive’, here the slope for higher resilience follows the same pattern as in the 70–79 age group. Again, higher resilience provides an advantage for better well-being, but this is less so when ill-health is high compared to low ill-health. In contrast to the other two groups, well-being was the same for both lower and higher levels of ill-health when resilience was low.

4 Discussion

Limited research has examined the intervening effect of psychological constructs in the pathway to well-being in later life, particularly in non-clinical populations (Bowling 2004). Using a representative community based sample this research provides an important first step in the extrapolation of such phenomenon to the rest of the older population. The examination of psychological resources as a positive personality characteristic that might improve adaptation has also received limited attention. This paper addresses this gap and demonstrates how a resilient self can be a valuable mechanism for maintaining well-being under conditions of poor health in later life. Importantly it shows that for three of the age groups (60–69, 70–79 and 80–90) the participants had the inner capacity to adaptively deal with negative changes that are part of their ageing process, supporting the idea of ‘continuity with challenge’ (Atchley 1999). Diener et al. (1999) suggest that the maintenance of well-being across the life span demonstrates the ability of the person to adapt positively to a wide range of conditions, highlighting the role of the individual in achieving a sense of well-being in older age. It is important to also note the direct effects; in all of the age groups higher resilience predicted higher well-being, indicating the presence of this protective factor. On the other hand higher ill-health predicted lower well-being, supporting the literature for the detrimental threats of ill-health in later life.

Unfortunately, generalising these findings for the age differences is restricted as a key drawback of this study is that the data are cross sectional, reflecting the design that tends to dominate ageing research. As such it is possible that the data are affected by a ‘cohort effect’—that is the variation in characteristics of people of different ages that arise because they are born at different times and have had different experiences as the environment and society change.

Future plans for longitudinal analyses might offer the method to explore the lifecourse perspective. Many gerontological researchers argue that a deeper understanding of ageing cannot be fully realised without longitudinal research, although these also have limitations, such as cohort confound, repeated testing and selective attrition (e.g. Schaie and Hofer 2001). Nevertheless it should be noted that much social policy is developed on the basis of cross-sectional research. Likewise, the opportunity to examine differential effects across such a wide age span, as in this research, is one that does not often arise. Although the literature suggests that subjective well-being might remain stable in later life, this paper has examined the psychological resources that might underpin this stability when threatened with ill-health and how these might vary within distinct age groups.

An alternative method of examining the effects of age is through a three-way interaction. However, this would not have enabled the distinct between age group analyses undertaken in this paper. Rather significance would be restricted to the categories of young or old, which we do not feel is informative, particularly as it is widely accepted in gerontology that ageing is not a homogeneous experience.

It is also worth noting that although the increase in the amount of variance explained with the interaction term was significant, the proportional increase was very small. In reviewing effect size, Mclelland and Judd (1993) report that it is well noted that significant moderation effects are difficult to detect in non-experimental field studies, and that as little of 1 and 3% differences should be considered important. As the design underpinning this paper reflects that outlined by Mclelland and Judd (1993) then the small increases in r^2 should be considered important.

The impact of the response rate should also be considered. Just over half (51%) of the people who were initially selected for interview refused to take part. However, it is worth noting that non-response is a major problem in all large scale surveys such as this. As an example the European Social Survey set a target response rate of 70% for each participating country, but their final response rates varied greatly, ranging from 43 to 75% (Phillips and Billet 2006).

To address the issue of non-response the results were weighted to take into account any age and gender differences between the target and actual sample, although clearly we may be affecting the characteristics that could be potentially different in the non-response population. On the other hand considerable attempts were made to draw the sample from diverse geographical areas so as to select respondents with a variety of backgrounds, thereby increasing its representativeness.

A further comment should be made about the measure of the resilient self used in the analyses. As acknowledged in our previous paper (Windle et al. 2008) there are likely to be other factors that could be considered as indicators of psychological resilience, however, our model was limited by the constraints of the available data. As such it could be suggested that the model of resilience, although theoretically plausible, represents just one of many approaches to resilience in older age. Consequently there are a number of theoretical issues regarding the conceptualisation of psychological resilience that require further investigation. On the other hand, despite the potential shortcomings our work has taken a novel approach to the topic exploring a theoretical perspective that is important to understanding the psychological aspects of older age. It has attempted rigorous analyses to further the understanding of psychological resilience. Indeed, it is possible that despite some of the limitations, the model might adequately capture the essential psychological resources that are important for mental health and well-being in older age. This paper has further demonstrated how such inner capabilities can enable a positive interpretation in older age.

Despite the limitations of the findings, it is still possible to contribute to current theory on ageing. The regulatory effect of resilience on well-being found in this research can be further explained in the framework of the theory of selective optimisation with compensation. This theory of adaptive or successful development—a 'life span model of psychological development' (Baltes 1993, p. 590)—aims to explain how individuals can deal with the move towards an imbalance of losses vs gains by successful adaptation or regulation of their behaviour. In this framework a resilient self provides the basis for losses (such as ill health) to be minimised and well-being to be optimised. Psychological resources are therefore important to the adaptation process. This model also hints at why there were no interaction effects for the younger age group. For these participants, their levels of ill-health were the lowest in the study participants and perhaps did not impact on their well-being to the extent that they needed to draw on their inner resources to deal with any adverse effects. It would be interesting to apply the same model to a clinical sample of the same age group to ascertain if a resilient self was important for subjective well-being in when ill-health is a serious threat.

On the other hand it is important to consider the possibility that individuals will “adapt to adversity even to the point of distorting and denying reality” (Coleman 1999, p. 51). One implication of this is that self report data on well-being—whilst informative—are not necessarily the best indicators of a life with quality in older age (Smith and Baltes 2002). To focus purely on subjective aspects of a model can be misleading, as the ‘well-being paradox’ (remaining satisfied with life whilst objective conditions are poor) although partially explainable in the context of the role of resilience could lead to an under-estimation of need.

Yet self-reflexivity is regarded as an important aspect of human agency, so the method of self-report provides the opportunity for people to describe their own behaviours whilst maintaining a continuous sense of identity (Capara et al. 2003). As at present there is no accepted, consistent definition of either well-being or quality of life (Scottish Executive 2005), the model of well-being presented here is just one of many approaches to examining quality of life. However, it reflects some of the key determinants of what might reflect a good quality of life and reflects the voices of older people themselves.

The results imply that efforts to reduce ill-health and increase resilient resources would be beneficial to well-being in older age. This has clear policy implications and it is potentially amenable to influence by Government action. Recent global ageing initiatives have set out aims for positive ageing, highlighting some of the key areas through which well-being can be achieved, should there be policies and programmes in place. The UN Principles for Older People have at their core the themes of independence, participation, care, self-fulfilment; and dignity. The World Health Organisation (2002) sets out a policy framework for Active Ageing. It advocates the role that psychological factors can play in protecting health throughout the life course (p. 49). Nevertheless, despite the potential of psychological resilience to buffer threats to well-being access to effective treatment and health services are crucial. This will strongly impact on the duration and severity of ill-health and its subsequent impact on quality of life (Townsend 2001).

5 Conclusion

The research contributes new ideas to the existing quality of life literature. By conducting the analyses separately for each age group the distinctions between four age cohorts are documented and show how for many, a resilient self was a means by which well-being was maintained. As such it is clear that older people have developed the inner capabilities for a positive interpretation of older age. Despite the limitations, given the lack of research on this topic this work presents an important first step in looking at these relationships. Further research focussing on those individuals with low or high levels of psychological resilience and examining what factors might contribute to enhancing or reducing it could provide evidence on how new vulnerabilities or strengths emerge over the life course.

References

- Atchley, R. C. (1989). A continuity theory of normal aging. *The Gerontologist*, 29(2), 183–190.
- Atchley, R. C. (1999). *Continuity and adaptation in aging*. Baltimore: John Hopkins University Press.
- Baltes, P. B. (1993). The aging mind: Potential and limits. *The Gerontologist*, 33(5), 580–594.
- Baltes, P. B., & Mayer, K. U. (1999). *The Berlin aging study. Aging from 70 to 100*. USA: Cambridge University Press.

- Baltes, M. M., Mayer, U., Borchelt, M., Maas, I., & Wilms, H. U. (1999). Everyday competence in old and very old age: theoretical considerations and empirical findings. In P. B. Baltes, & K. U. Baltes (Eds.), *The Berlin aging study. Aging from 70 to 100*. USA: Cambridge University Press.
- Baron, R. M., & Kenny, D. A. (1986). The moderator–mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology*, *51*(6), 1173–1182.
- Beardslee, W. R. (1989). The role of self-understanding in resilient individuals: The development of a perspective. *American Journal of Orthopsychiatry*, *59*(2), 266–278.
- Bonanno, G. A., Galea, S., Bucchiarelli, A., & Vlahov, D. (2006). Psychological resilience after a disaster: New York City in the aftermath of the September 11th terrorist attack. *Psychological Science*, *17*, 181–186.
- Bowling, A. (2004). A taxonomy and overview of quality of life. In J. Brown, A. Bowling, & T. Flynn (Eds.), *Models of quality of life: A taxonomy, overview and systematic review of the literature*. Sheffield University: European Forum on Population Ageing Research. Available online at http://www.ageingresearch.group.shef.ac.uk/pdf/qol_review_complete.pdf.
- Bowling, A., Farquhar, M., & Grundy, E. (1996). Associations with changes in life satisfaction among three samples of elderly people living at home. *International Journal of Geriatric Psychiatry*, *11*, 1077–1087.
- Bowling, A., Farquhar, M., Grundy, E., & Formby, J. (1993). Changes in life satisfaction over a two and a half year period among very elderly people living in London. *Social Science and Medicine*, *36*(5), 641–655.
- Bowling, A., Grundy, E., & Farquhar, M. (1997). *Living well into old age*. York: Joseph Rowntree Foundation.
- Capara, G. V., Capara, M., & Steca, P. (2003). Personality's correlates of adult development and aging. *European Psychologist*, *8*(3), 131–147.
- Cohen, J., Cohen, P., West, S. G., & Aiken, L. S. (2003). *Applied multiple regression/correlation analysis for the behavioural sciences* (3rd ed.). New Jersey: Lawrence Erlbaum Associates.
- Coleman, P. G. (1999). Identity management in later life. In R. T. Woods (Ed.), *Psychological problems of ageing: Assessment, treatment and care*. England: Wiley.
- Diener, E. (1984). Subjective well-being. *Psychological Bulletin*, *95*(3), 542–575.
- Diener, E., & Suh, M. E. (1998). Subjective well-being and age: An international analysis. *Annual Review of Gerontology and Geriatrics*, *17*, 304–324.
- Diener, E., Suh, E. M., Lucas, R. E., & Smith, H. L. (1999). Subjective well-being; three decades of progress. *Psychological Bulletin*, *2*, 276–302.
- Judge, T. A., Erez, A., Bono, J. E., & Thoresen, C. J. (2002). Are measures of self esteem, neuroticism, locus of control and generalised self efficacy indicators of a common core construct? *Journal of Personality and Social Psychology*, *83*(3), 693–710.
- Kempen, G. I. J. M., van Heuvelen, M. J. G., van Sonderen, E., van den Brink, R. H. S., Kooijman, A. C., & Ormel, J. (1999). The relationship of functional limitations to disability and the moderating effects of psychological attributes in community dwelling older persons. *Social Science and Medicine*, *48*, 1161–1172.
- Luthar, S. S. (1993). Annotation: Methodological and conceptual issues in the study of resilience. *Journal of Child Psychology and Psychiatry*, *34*, 441–453.
- Masten, A. S. (1999). Resilience comes of age: Reflections on the past and outlook for the next generation of research. In M. D. E. J. Glantz, & L. Jeannette (Eds.), *Resilience and development: Positive life adaptations. Longitudinal research in the social and behavioral sciences* (pp. 281–296). USA: Springer.
- McClelland, G. H., & Judd, C. M. (1993). Statistical difficulties of detecting interactions and moderator effects. *Psychological Bulletin*, *114*(2), 376–390.
- Navarro, A. B., Bueno, B., Buz, J., & Mayoral, P. (2006). Percepción de autoeficacia en el afrontamiento de los problemas y su contribución en la satisfacción vital de las personas muy mayores [Perception of self-efficacy in coping with problems and its contribution to life satisfaction in very old people]. *Revista Española De Geriatria y Gerontología*, *41*(4), 222–227.
- Office for National Statistics. (1999). *Social focus on older people*. London: The Stationery Office.
- Office for National Statistics. (2005). *Focus on older people*. London: The Stationery Office.
- Pearlin, L. I., Menaghan, E. G., Lieberman, M. A., & Mullan, J. T. (1981). The stress process. *Journal of health and social behaviour*, *22*, 337–356.
- Phillips, M., & Billet, J. (2006). Monitoring and evaluating non-response issues and fieldwork efforts in the European Social Survey. From http://www.europeansocialsurvey.org/index.php?option=com_content&task=view&id=82&Itemid=126.
- Pinquart, M. (2001). Correlates of subjective health in older adults: A meta-analysis. *Psychology and Aging*, *16*(3), 414–426.
- Rutter, M. (1987). Psychosocial resilience and protective mechanisms. *American Journal of Orthopsychiatry*, *57*(3), 316–331.

- Rutter, M. (1995). Psychosocial adversity: Risk, resilience and recovery. *Southern African Journal of Child & Adolescent*, 7, 75–88.
- Schaie, K. W., & Hofer, S. M. (2001). Longitudinal studies in aging research. In J. E. Birren & K. W. Schaie (Eds.), *Handbook of the psychology of aging* (Vol. 5, pp. 53–77). California: Academic Press.
- Scottish Executive. (2005). *Well-being and quality of life: Measuring the benefits of culture and sport: A literature review and think piece*. Scottish Executive Social Research: From <http://www.scotland.gov.uk/>.
- Scottish Executive. (2006). *Strategy for Scotland's ageing population: Omnibus survey findings*. Scotland: Scottish Executive Social Research.
- Smith, J., & Baltes, P. B. (2002). *New frontiers in the future of aging: From successful aging of the young old to the dilemmas of the fourth age*. Paper presented at the Valencia Forum.
- Staudinger, U. M. (2000). Many reasons speak against it, yet many people feel good: The paradox of subjective well-being. *Psychologische Rundschau*, 51(4), 185–197.
- Townsend, P. (2001). *Targeting poor health*. Cardiff: The National Assembly for Wales.
- Wagnild, G. M., & Young, H. M. (1993). Development and psychometric evaluation of the resilience scale. *Journal of Nursing Measurements*, 1, 165–178.
- Windle, G., Markland, D. A., & Woods, B. (2008). Examination of a theoretical model of psychological resilience in older age. *Aging and Mental Health*, 12(3), 285–292.
- Wood, V., Wylie, M. L., & Scheafor, B. (1969). An analysis of a short self-report measure of life satisfaction: Correlation with rater judgements. *Journal of Gerontology*, 24, 465–469.
- World Health Organisation. (2002). *Active ageing. A policy framework*. World Health Organisation, from http://whqlibdoc.who.int/hq/2002/WHO_NMH_NPH_02.8.pdf.