

# Older people's sense of coherence: relationships with education, former occupation and living arrangements

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## **ABSTRACT**

Few studies have explored the combination of individual and contextual conditions that influence psychological health among older people. This study aimed to analyse the sense of coherence (SOC) in a sample of Italian senior citizens in relation to gender, educational level, living arrangements and former employment, when controlling for age. The short version of the SOC scale (Antonovsky 1987), which has items for the 'comprehensibility', 'manageability' and 'meaningfulness' components, was administered to a sample of 198 senior citizens of both genders and with an average age of 68.5 years. The findings showed that: (a) senior citizens with a higher level of education and who had retired from jobs with a high level of responsibility perceived reality as more controllable, manageable and meaningful; (b) with greater age, the perception that life's challenges are worth facing decreased; and (c) there was an interaction between living arrangements and education level, *viz.* those with higher education, and those with lower education living with a spouse or partner, perceived reality as more meaningful and their life challenges as worth facing. It is important to investigate further the activities that help maintain a high sense of coherence throughout the life span, and to design social policies that support senior citizens who live alone, because they appear psychologically weaker than others.

**KEY WORDS** – sense of coherence, older people, living arrangements, moderation.

## **Introduction**

The proportion of older people in the population is increasing rapidly in all western societies (World Health Organisation 2002). In Italy, around 20 per cent of the population are aged over 65 years and retired

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(National Institute of Statistics (ISTAT) 2006), and this percentage is expected to grow as average life expectancy increases. Clearly, not all senior citizens are in good physical and psychological health, which poses a major problem for health services and social policies. Some senior citizens remain psychologically healthy, while others, as they age, struggle to cope with the challenges of daily life. What lies behind these differences? Our view is that some senior citizens remain psychologically healthy because they perceive reality as controllable, have sufficient resources to face life's challenges, and believe that the challenges are still worth facing, which amounts to saying that they have a high 'sense of coherence' (Antonovsky 1979).

Contrary to the stance of much research on older people, we are also convinced that it is important to study the processes associated with different developmental trajectories during early old age; that is, before multiple negative life events lead to one or more of a substantial loss of autonomy, the restriction of daily activities, and diminished involvement with the community (Elder 1998: 939–92). Among the negative life events experienced in old age are health problems and the loss of significant same-age peers, both of which become increasingly likely with advancing age (Cutler 2001: 11–27; Schoeni *et al.* 2001: 206–18; Tate, Lah and Cuddy 2003: 735–44). This paper therefore concentrates on 'normal ageing' among older people who are sustaining independent lives, a long established concept with biological, psychological and social dimensions (Busse and Maddox 1985). Generally speaking, dependence can be defined as one or more health-related limitations in undertaking the activities expected of a person in a social context. Senior citizens who live on their own can be considered independent because they have no or little difficulty with the basic and instrumental Activities of Daily Living such as eating, bathing, dressing, getting around, doing light housework, shopping, and preparing meals.

Finally, in accordance with the lifespan theoretical framework, we believe that a combination of individual and contextual characteristics contribute to the differences in psychological health that can be observed as older people age (Baltes, Lindenberger and Staudinger 1998: 1029–144). With regard to the individual characteristics that influence psychological health, we were particularly interested in the relationships between a personal 'sense of coherence' and various socio-demographic attributes. In other words, we wished to examine whether sense of coherence varies by gender, age, level of education, and past occupation. As for contextual conditions, we were particularly interested in the role of the individual's living arrangement, particularly whether there are contrasting effects from living alone as opposed to living with a spouse or partner.

*The sense of coherence*

As conceptualised by Antonovsky (1979), sense of coherence (SOC) refers to an individual's global orientation or way of perceiving and interpreting events, that is to say, a strong, weak or intermediate disposition to view reality as comprehensible, manageable and meaningful, which he believed is relatively stable. The construct derives from the *salutogenesis* model of health, which focuses on the factors that allow people to maintain or regain health despite exposure to risk factors. By contrast, the *pathogenesis* model of health concentrates on the causes of disease. The first component of SOC is *comprehensibility*, which represents the cognitive dimension. It refers to a person's perception of internal or external stimuli as ordered, structured and predictable, and of information as clear rather than chaotic, puzzling, incidental and inexplicable. High comprehensibility marks a solid capacity to judge reality. The second component, *manageability*, represents the instrumental dimension. It refers to one's perception of having adequate resources to face the demands of external stimuli, and one's belief that these resources are either within one's own control, or alternatively are controlled by others (whether relatives, friends, colleagues or God). People with high levels of manageability do not feel they are victims of people or events. The third component, *meaningfulness*, represents the motivational dimension. It refers to the value one attributes to being involved in the process of shaping one's own destiny and daily experience. It concerns the perception of one's own life as emotionally meaningful and the idea that life's challenges should not be avoided or denied but rather confronted with effort and commitment.

For evaluating the sense of coherence, Antonovsky (1987) constructed a self-report questionnaire, the 'Sense of coherence scale' or 'Orientation to life questionnaire'. Considering that in his conception sense of coherence is a global orientation, a way to see the world or a disposition, in other words something not reliably indicated by particular responses to specific situations, the scale has many items. These evaluate diverse stimuli or situations and distinguish modality (cognitive, instrumental and emotional), source (internal, external or both), nature (concrete or abstract), and time (past, present or future). There are two versions of the questionnaire, one with 29 items and the other with 13. In this study we used the shorter version, which has recently been validated for an Italian sample aged 19 to 71 years (Barni and Tagliabue 2005: 151–66). Both versions show high reliability in terms of internal and test-retest consistency (Antonovsky 1993: 725–33). The most problematic issue concerns the factorial structure of the construct. Using the short version of the questionnaire, some authors have identified three factors (each corresponding to one component)

(Feldt and Rasku 1998: 505–16; Feldt *et al.* 2000: 239–57; Gana and Garnier 2001: 1079–90; Feldt *et al.* 2003: 1151–65), while others have distinguished two factors (the first named ‘social understanding and engagement’ and the second called ‘unpleasant emotions and internal tension’) (Larsson and Kallenberg 1999: 51–61; Barni and Tagliabue 2005: 151–66). Antonovsky (1987) believed that the three components of SOC are distinct if related dimensions. To the best of our knowledge, no previous study has analysed the structure of SOC for a sample of older people (the mean age of the samples in the cited studies was around 40–45 years).

### *Factors influencing sense of coherence*

Some previous studies have investigated relationships between SOC and aspects of quality of life among older people (Sarvimaki and Ojala 1994: 140–9; Forbes 2001: 29–32). Generally, they have found that high SOC is a protective factor during old age, especially against the potential difficulties and health problems common at this time of life (Tishelman, Taube and Sachs 1991: 1229–40; Lewis 1996: 99–112). This is most likely because high SOC promotes greater efficiency in conducting one’s life and mastering its challenges. Rennemark (1997) found that among senior citizens a positive evaluation of one’s ‘life history’ (*i.e.* a positive evaluation of both relational and professional achievements) associated with high SOC. Forbes (2001: 29–32) also showed that among ‘young old’ people (aged around 60–70 years), SOC was related to the level of education, social support, and marriage integrity. Most studies of SOC have been conducted in northern European countries, however, and have investigated SOC as a moderator of the effects of stressful life events on health or disease (Chamberlain, Petrie and Azariah 1992: 301–10; Motzer and Stewart 1996: 287–98; Kivimaki *et al.* 2000: 583–97; Richardson and Ratner 2005: 979–84). SOC has rarely been examined in other cultural contexts and in relation to normal life and daily hassles.

Living with one’s own family and especially with a spouse or partner has already been shown to be a protective factor during the transition to old age. Several reasons are commonly advanced to explain this effect. First, continuing to live in an accustomed environment is protective for senior citizens because it allows them to maintain familiar habits and routines and promotes community involvement, important factors in preserving one’s identity in old age (Kroger 2007). Secondly, living with family members also implies either that an older person is part of an extended family (probably including more than one generation), or that they have not yet suffered the loss of significant same-age peers, particularly the

spouse or partner. The practical and emotional challenges of bereavement exceed those of most other stressful life events (see Hendry and Kloep 2002). The current orthodoxy in social policy is to promote living with the family for as long as possible and, if for some reason this is no longer possible, to offer a family-like environment in residential care (Brooks 1994: 227–48). Most of the literature on this subject has been theoretical and the few studies have been retrospective (Kroger and Haslett 1991: 303–30); in other words, they have investigated elderly people who no longer live on their own. Furthermore, while some studies have considered the relationships between sense of coherence, stress and social support (Wolff and Ratner 1999: 182–97), to our knowledge no previous research has investigated the inter-connections between SOC, living arrangements and other socio-demographic characteristics.

### *Aims and research questions*

The aim of this study was to analyse SOC in an elderly Italian sample in relation to gender, level of education (compulsory or higher), living arrangements (alone or with a spouse or partner) and job status (high or low level of responsibility in job held prior to retirement). Age was controlled, as it may be a strong intervening factor. Based on the cited literature, it was hypothesised that SOC and all its components would be higher in people with more education, who had had more responsibility in their former job, and who lived with a spouse or partner. Furthermore, it was expected that the unfavourable living arrangements of living alone, in combination with a dearth of other resources, would undermine an older person's perception of reality as controllable, and lessen the person's beliefs that he or she has enough resources to face challenging life events and daily hassles, and that the challenges are still worth facing. We therefore also expected to find significant relationships between living alone and other socio-demographic attributes, such as education and the level of responsibility in the former job. More specifically, we expected that senior citizens who live alone would be more likely to perceive reality as less controllable, manageable and meaningful when they had low education, because they are likely to have relatively limited cognitive resources. Put succinctly, the study addresses the following research questions:

1. Does SOC differ in relation to socio-demographic aspects and living arrangements?
2. Do living arrangements moderate, or buffer, the relationship between socio-demographic attributes and SOC? In other words, does a favourable living arrangement, such as living with a spouse or partner, protect against the negative influence of other socio-demographic

attributes, such as low education and having had little responsibility in one's former job?

### **Study design and methods**

This study breaks new ground in being from Italy, a Mediterranean country, where generally the culture is more collectivist than in northern European countries, the location of most SOC studies. Moreover, although the family is important throughout the life-span (Scabini, Marta and Lanz 2006), older people have received much less attention in SOC studies than children or adolescents. Some comparative research has recently been undertaken on differences in care provision across Europe. For instance, Bettio and Plantenga (2004: 87–113) compared elder-care policies among the member states of the European Union. They found that institutional care and home-help services were the most important services and that there was considerable country variation and between northern and southern Europe. They also found that the greatest providers of both services were Denmark, the United Kingdom, The Netherlands and Sweden, and that the lowest provision of both institutional or home-based care was in Spain, Italy, Portugal and Greece. It therefore appears that the family plays a greater role in the care of senior citizens in Mediterranean than northern European countries, as comparative studies have shown (Ogg and Renaut 2006). Although the focus of this study is on independent senior citizens, *i.e.* those who received little or no formal or informal care, the contextual family structures, living arrangements and social services condition all older people's futures and may be relevant when interpreting the results of this study.

#### *The participants*

All the senior citizens' associations belonging to the Seniors' Council in a large city in the northwest of Italy were invited to participate in this study. The Council represents all the major senior citizens' associations active in the community and is an entity of the municipal government. Its role in local government is only consultative; it holds no executive power. Considering that in 2007 around 25 per cent of the city's older population of about 280,000 belonged to one of these associations, the members who attended the Seniors' Council assembly and meetings can be considered broadly representative of the city's older population, although we cannot exclude the possibility that those who participated in these organisations over-represented the more outgoing and those in better health. The

reader should bear in mind that our intention was to study the healthy and active section of the older population because we believed that the processes leading to variable (more or less healthy) developmental trajectories during early old age must be studied prior to the deterioration of physical and psychological health.<sup>1</sup>

All those who attended one general assembly of the Seniors' Council and four subsequent meetings in different areas of the city were recruited using a modified snowball technique. The three inclusion criteria were: (a) aged 60 or more years, (b) being retired, and (c) not having previously been recruited. In fact 60 years is the mean retirement age for this cohort of people in Italy, though earlier or later retirement is possible depending on personal and occupational characteristics. The recruits were informed that participation was voluntary and confidential. All the senior citizens present at the meetings who met the three inclusion criteria agreed to participate and gave informed consent, in accordance with Italian law and the Association of Italian Psychologists' ethical code. Trained researchers administered the questionnaire.

The final sample comprised 198 people, of whom 101 (51%) were women and 97 men. The mean age was 68.5 years (range 60–88). With regard to living arrangements, three-quarters of the sample ( $N = 148$ ) lived with a spouse or partner, and one-quarter lived alone ( $N = 50$ ). In terms of education, two levels were considered: 'low', corresponding to compulsory education (primary and secondary school) and 'high', corresponding to additional non-compulsory education (including high school and university). The average level of education for both men and women in the sample was higher than in the national and local age-matched populations (ISTAT 2006; Costa, Migliardi and Gnani 2006). In the sample, only 40 per cent received only compulsory education compared to about 70 per cent in the national and local populations. Former occupations were dichotomised by level of responsibility: 174 (88%) had been in 'low' responsibility jobs (mostly manual labour and office work), and 24 (12%) had had 'high' responsibility (mostly managers and teachers). This ratio was very similar to that in the national population. Since we lacked other information, the level of responsibility in the former main job was used as a proxy for the socio-economic status of the participants.

### *Procedure*

The short Italian version of the Sense of Coherence Scale was administered to the sample (Antonovsky 1987; Barni and Tagliabue 2005: 151–66). This questionnaire has 13 items that capture the comprehensibility, manageability and meaningfulness components of the construct. We

TABLE I. *The items of the sense of coherence scale and their reliability in the sample*

Components and items of the sense of coherence scale	Codes
<b>Comprehensibility</b> (Cronbach's $\alpha = 0.64$ ):	
1. Has it happened in the past that you were surprised by the behaviour of people whom you thought you knew well?	A
2. Do you ever have the feeling that you are in an unfamiliar situation and don't know what to do?	A
3. Do you have very mixed-up feelings and ideas?	A
4. Do you ever feel things inside that you would rather not feel?	A
5. When something unpleasant happened in the past, you tended to ...	B
<b>Manageability</b> (Cronbach's $\alpha = 0.62$ ):	
1. Does it ever happen that people you count on disappoint you?	A
2. Do you have the feeling that you're being treated unfairly?	A
3. Many people, even those with a strong character, sometimes feel like losers in certain situations. How often have you felt this way in the past?	A
4. How often do you have feelings that you are not sure you can keep under control?	A
<b>Meaningfulness</b> (Cronbach's $\alpha = 0.54$ ):	
1. Do you have the feeling that you don't really care about what goes on around you?	A
2. How often do you have the feeling that there is little meaning in the things you do in your daily life?	A
3. Until now, your life has had:	C
4. Doing the things you do every day makes you feel:	D
<b>Sense of coherence score</b> (13 items, Cronbach's $\alpha = 0.81$ )	

*Notes:* Each item has seven categories. Four different scales are used, indicated as A to D. A is from 1 'very often or always' to 7 'very rarely or never'. B is from 1 'value (think about) it too much or too little' to 7 'value (think about) it appropriately'. C is from 1 'no clear goal' to 7 'very clear goal'. D is from 1 'discomfort and boring' to 7 'pleasure and satisfaction'.

*Sources:* Antonovsky 1993: 725–33; Barni and Tagliabue 2005: 151–66.

analysed the reliability of each SOC component and the general scale through Cronbach's alpha. The psychometric properties are described in Table 1. We ran factorial analyses of variance for each SOC component and for the overall scores. Four main effects were examined using dichotomies for gender, living arrangement (alone or with a spouse or partner), level of education (low or high), and level of responsibility in the former job: (low or high). Three interaction terms were examined between the living arrangement and the other main effects. Each model was controlled for age.

## Results

As expected, statistically significant relationships were found between the SOC scores and living arrangements, level of education and the level of responsibility in the former job, although there was no significant



TABLE 2. Means and standard errors of the sense of coherence component and overall scores by gender, living arrangements, educational level, and responsibility of former job

Components and scale	Gender		Living arrangements		Level of education		Responsibility of former job	
	Women	Men	Alone	With spouse/ partner	Low	High	Low	High
<b>A. Mean scores</b>								
Comprehensibility:								
Mean score	24.6	23.5	23.8	24.3	24.0	24.1	22.6	25.5
Standard error	0.85	0.89	1.34	0.69	0.95	0.79	0.47	1.43
Manageability:								
Mean score	19.0	19.1	19.0	19.1	18.7	19.4	17.2	20.6
Standard error	0.75	0.79	1.18	0.61	0.84	0.70	0.41	1.26
Meaningfulness:								
Mean score	19.5	19.7	18.4	20.7	18.6	20.5	19.6	19.5
Standard error	0.69	0.72	1.09	0.56	0.77	0.64	0.38	1.16
SOC overall score:								
Mean score	63.0	62.3	61.2	64.2	61.3	64.0	59.8	65.6
Standard error	1.94	1.67	3.05	1.57	2.17	1.81	1.06	3.25
Main effects								
Interaction effects – living arrangement by ...								
Components and scale	Gender	Living arrangement	Level of education	Responsibility of former job	Gender	Level of education	Responsibility of former job	
<b>B. Main and interaction effects</b>								
Comprehensibility:								
<i>F</i> (df 1, 184)	1.41	0.14	0.00	3.73*	0.88	0.10	0.55	
$\eta^2$	0.01	0.00	0.00	0.02	0.01	0.00	0.00	
Manageability:								
<i>F</i> (df 1, 184)	0.03	0.00	0.94	5.48*	0.80	0.02	0.21	
$\eta^2$	0.00	0.00	0.01	0.03	0.00	0.00	0.00	
Meaningfulness:								
<i>F</i> (df 1, 184)	0.08	3.62*	6.61**	0.01	0.40	6.75**	2.21	
$\eta^2$	0.00	0.02	0.04	0.00	0.00	0.04	0.01	
SOC overall score:								
<i>F</i> (df 1, 184)	0.12	0.75	1.73	2.93*	0.97	1.23	0.00	
$\eta^2$	0.00	0.00	0.01	0.02	0.01	0.01	0.00	

Notes: df: degrees of freedom.  $\eta^2$  (eta squared) is the between-groups sum of squares as a proportion of the total sum of squares, the 'explained' proportion.

Significance levels: \*  $p < 0.05$ , \*\*  $p < 0.01$ .

relationship with gender (Table 2). Level of responsibility in the former job was related to the comprehensibility and the manageability components of SOC (Table 2), and to a lesser degree with the overall sense of coherence. In all cases, senior citizens who had high levels of responsibility in

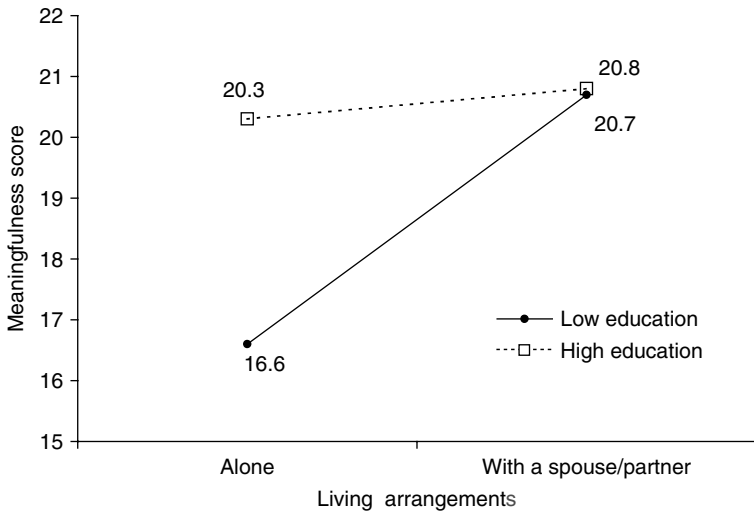


Figure 1. Interactions between living arrangements, educational level and meaningfulness score.

their past jobs also had high SOC. Education level and living arrangements were both related to meaningfulness: senior citizens with higher education levels and who lived with a spouse or partner also had higher SOC scores.

Turning to the interaction effects, it was found that favourable living arrangements, such as living with a spouse or partner, moderated the negative effect of a lower level of education, especially in terms of the motivational component of SOC (or ‘meaningfulness’). (Table 2). As Figure 1 displays, seniors who lived with a spouse or partner had a higher SOC whatever their education level, and conversely, those who lived alone had high SOC only if they also had more education. No other significant interactions were found between living arrangement and gender, level of education or past job. Finally, age had a significant relationship only in the case of the meaningfulness component [ $F(1, 184) = 7.2$ ,  $p < 0.008$ ,  $\eta^2 = 0.04$ ]. At older ages, meaningfulness decreased ( $\beta = -0.152$ ,  $t = -2.685$ ,  $p < 0.008$ ).

## Discussion and conclusion

This study has investigated the factors associated with whether or not an older person perceives reality as controllable and meaningful and believes

that life's challenges are still worth facing. More specifically, this research analysed the 'sense of control' (SOC) among a sample of Italian senior citizens in relation to gender, educational level (compulsory or higher), living arrangements (alone or with a spouse or partner), and high or low responsibility in the previous main job. Additionally, we controlled for the effect of age because, during this phase of life, it can be a strong intervening factor, with older age raising the perception that reality is out of one's control, or that one has less control. Based on the evidence from the published literature, we expected that scores for the three components and overall SOC would be higher among those with higher levels of education, among those who had responsibility in their former job, and among those who lived with a spouse or partner. Furthermore, it was anticipated that senior citizens who lived alone would be more likely to perceive reality as less controllable, manageable and meaningful, particularly among those with low resources, especially those deriving from education.

The expectations were partially confirmed by the findings. Generally speaking, senior citizens who lived with a spouse or partner, who had had more education, and who had retired from jobs with high responsibility, had high SOC. In other words, these seniors perceived reality as more controllable, manageable and meaningful. It was also found, however, that some components of SOC were more influenced by socio-demographic attributes than others. The level of responsibility in the previous job was especially related to the cognitive and instrumental components of SOC, 'comprehensibility' and 'manageability'. If one accepts that responsibility in the former job is also a proxy for socio-economic status, the findings are also consistent with Lundberg's (1997: 821–31) and Larrson and Kallenberg's (1996: 175–80) findings. Given that the analysis was cross-sectional, however, we are unable to associate the differences with specific motivations as other studies have done. For example, Geyer (1997: 1771–79) attributed the differences to the few opportunities at the workplace for unskilled workers to develop strong SOC, while Nilsson *et al.* (2003: 297–304) drew attention to the differential impact of negative life events and negative social changes on unqualified workers. Moreover, we feel that the similarities between our findings and previous findings with respect to job responsibility are of great interest and merit further investigation.

Educational level and living arrangements were both related to the motivational component of SOC, namely 'meaningfulness'. That is to say that the subjects with more education or who lived with a spouse or partner were more likely to perceive reality as meaningful and to believe life's challenges to be worth facing. As for the influence of educational level, we know that less educated people are less likely to understand and

act upon reality, and that conversely more educated people are likely to have a higher quality of life for reasons associated with their higher social and economic status (Lundberg 1997: 821–31). We were unable to examine the direct influence of socio-economic status, but can speculate that more highly educated people, through their greater understanding of reality, are more likely to find motivations for believing that life's challenges are still worth facing. Although the link between level of education and meaningfulness has never been investigated among older people, we know that formal thinking is strongly related to the level of education (Piaget 1972: 1–12; Labouvie-Vief 1980: 141–161). The power of formal reasoning is also well known because it allows human beings to go 'beyond the information given' and to imagine creative solutions to problematic situations (Bruner 1957: 41–60). We also know that crystallised intelligence, broadly cultural knowledge, is very likely to be stable and even to increase with age (Baltes, Lindenberger and Staudinger 1998: 1029–144). Thus, believing that it is still worth facing life's challenges and daily hassles can reasonably be related to the level of education.

As hypothesised, the favourable living arrangements of living with a spouse or partner moderated or buffered the negative impact of low education, especially on the motivational component of SOC. In other words, the senior citizens in the sample were more motivated to face life's challenges and daily hassles when they had higher cognitive resources (as indicated by more education), or when they did not live alone and were able to share normal daily activities and hassles with significant others. The study by Forbes (2001: 29–32) reached a similar finding.

No gender differences were found, in contrast to the findings of Larsson and Kallenberg (1996: 175–80), which found that women had lower scores than men for both the perception of order in internal and external stimuli (*viz.* the comprehensibility component), and having sufficient resources to control their reality (*viz.* the manageability component). We reiterate that the participants of the present study, both women and men, had more education than the national and local older population and that this could have produced a biased sample. With this caveat, it is of interest that the finding of no gender effect contradicts the general view in the literature that women have lower self-regard than men. There are many possible explanations, and the finding underlines the need for further investigation of the low self-perception of many working-age women and its connections with multiple and possibly conflicting social roles. Women in contemporary western societies are more likely than their predecessors to perceive high expectations of achievement in more than one social role (personal career, being a wife and a mother), which may contribute to a negative self-view. Because the study was cross-sectional, we could not

identify or distinguish ageing and cohort effects, so we do not know whether gender differences were present in the same sample in the past and disappeared when retirement placed men and women in a more similar condition. This phenomenon merits further investigation through longitudinal studies.

Additionally, we found that with increasing age, the senior citizens had a weaker perception that life's challenges were worth facing. There was one significant age relationship, with the meaningfulness component of SOC, although the relationship appears to derive from correlates of advanced age rather than age *per se*. For instance, losing companionship and affection through the loss of the partner and same-age friends and relatives, and the increasing likelihood of health problems strongly challenge one's motivation to face reality. Elderly people who still live with a spouse or partner or have high cognitive resources continue to perceive high motivation to engage in life's challenges.

It is also interesting to note that neither the cognitive nor the instrumental dimensions of SOC were significantly influenced by age. While remembering that we are unable to separate cohort and age effects, it may be pertinent that current older people's social and economic conditions are far better than their predecessors, and this may present as a lower probability of decreasing SOC and other aspects of self-perception. In Italy, as in other western countries, the current generation of elderly people is certainly more active than their predecessors (see ISTAT 2006). These findings indicate that, for older people, age is less relevant than social integration. Elderly people are more likely to maintain psychological health when they are fully integrated in normal daily life, with all its positive and negative aspects, and when they have a partner or other relatives with whom to spend time and share household responsibilities.

#### *Limitations and strengths of the analysis*

The analysis has the limitations of a cross-sectional design, of not having a direct measure of socio-economic status, and of a sample that over-represented those with more education (Ing and Reutter 2003: 224–8). Furthermore, including other indicators of psychological health, such as self-efficacy (Bandura 1997), might also have been helpful, especially considering that it might be easier to promote self-efficacy than sense of coherence. Balancing these limitations, the study has broken new ground and has particular merits. First, it has investigated SOC in a relatively healthy, active and committed sample of older people in a Mediterranean country, which contrasts with the majority of previous studies of SOC in

old age that have featured chronically-ill samples in northern European countries. Considering that SOC may be strongly influenced by non-normative life events, which are more likely in at-risk samples, and by the macro-social context in which people develop, the diversity of the sample and their social and cultural contexts makes an original contribution to understanding the universality of SOC development over the life-span. Our findings suggest that SOC is an important resource in facing limitations in the basic Activities of Daily Living, not only stressful life events, and that it is a relevant concept in Mediterranean countries, where family relationships are more important in the care of senior citizens than in Northern European countries.

Secondly, the findings showed that for sense of coherence to remain intact requires relational resources (living with a spouse or partner) and cognitive resources (high education level or high job responsibility). More specifically, they suggest that particular experiences may be especially important for the development and maintenance of specific components of a sense of coherence. For instance, the level of job responsibility appears to be most relevant for the cognitive and instrumental components, while educational level and living arrangements were more strongly tied to the motivational dimension. These findings challenge social scientists to investigate the kinds of activities – as alternatives to paid work – that help people develop and maintain a strong interest in life throughout the entire life-span. We argue that the same level of attention as has been dedicated to psychological development among adolescents and youth (Csikszentmihalyi and Schneider 2000; Larson 2000: 170–83) should be given to older people. This is a prerequisite for an evidence-based psychology of positive elderly development.

It is manifest that interventions to promote the sense of coherence are untested and likely to be fraught with difficulties (Wiesmann *et al.* 2006: 90–9). The finding that the living arrangements are a strong influence nonetheless encourages a prescriptive hypothesis, that living with the family is beneficial. It is clear, however, that this course for promoting a higher sense of coherence must begin well before retirement and old age. While some scholars have expressed doubts about the stability of SOC (Schnyder *et al.* 2000: 296–302; Smith, Breslin and Beaton 2003: 475–84; Wiesmann *et al.* 2006: 90–9), our view is that it is difficult to change, particularly following important life events that tend to crystallise it (Snekkevik *et al.* 2003: 443–53). On the other hand, promoting family living can certainly be introduced at every developmental phase, including old age. Social policies must be in place to support the families of older people, or to construct special care centres for senior citizens that as far as possible replicate the family setting (Brooks 1994: 227–48).

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## NOTES

- 1 We are aware that data on the socio-economic status of the sample would have enabled more rigorous checks of representativeness, but were advised by the Seniors' Council to avoid questions on salaries, incomes and property ownership. Despite our assurances that we would protect confidentiality, the Seniors' Council believed that such questions would have dissuaded members from participating (creating a different source of bias).

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