8. Old-Old People

Major Recent Findings and the European Contribution to the State of the Art

Constança Paúl

Introduction

In developed regions, people aged 80 years and over constitute 3% of the population and are the fastest growing segment of the aged population (WHO, 2002). This age boundary is said to mark the transition from the third to the fourth age that takes place when 50% of the people who reached age 50 or 60 have died, which is between 80 and 85 years (Baltes & Smith, 2003).

It is expected that in 2050 people 80 years old and more will be 3.4% of the total population of the world, 8% of the population of the more developed regions, 10.6% of the Southern Europe population, and 10.1% of the Western Europe population (United Nations, 1996a,b). To live a long life constitutes a challenge to the self and to the all community. Although the trend in population health, associated with improvements in life expectancy, seems to be positive, the patterns will vary widely from country to country (Hayward & Zhang, 2001). The disability-free life expectancy and life free of functional limitation (measured in DALYs – disability adjusted life years) is crucial when looking at very old people, and a major component of quality of life.

What is the profile of the oldest-old people? Is the aging process continuous until very old age or is there a discontinuity of the aging process beyond the 8th decade of life (Poon, et al., 2005). Are the old-old people survivors, and do they have distinctive characteristics as a group for that reason alone, or is living to a very old age just prolonging the same trajectory, even though very few succeed in extending their life span beyond a certain age? With the expanded life expectancy what should we expect in terms of autonomy for this very old population?

The profile of the old-old throughout the world show that they are mostly females, probably living alone, with lower levels of education and higher poverty rates compared to the younger-old (Poon, Jang, Reynolds, & McCarthy, 2005). According to these authors, at least in the United States, it is estimated that approximately one-third of the oldest-old are healthy enough to live independently in the community, one third are functionally impaired, and one third are extremely impaired and disabled. These figures are similar to the ones presented by Deep and Jeste (2006), based in a meta-analysis, which show that around one third of old people have aged successfully. How-
ever, the predictors include younger age in first place, plus not smoking, no disabilities, musculoskeletal diseases, or diabetes, and to a lesser extent, continuing physical activity, more social contacts, better self-perception of health, less depression, and less cognitive decline or medical conditions. According to this data it seems that the probability of finding a “successful” old individual diminishes with advancing age and diminishing health. However, according to Poon et al. (2005) there is still “one third of success” within the very old population. The claimed heterogeneity of old people is even larger for centenarians compared with younger cohorts. Maybe the success of these old-old is explained by factors different from the ones of younger cohorts, namely efficient coping strategies, developed throughout the lifetime, which helped them face stresses and led to positive evaluations of themselves. This constitutes, in our view, one of the major issues for this area of research in the near future.

We completed a literature review in PsycINFO searching for old-old, very old, and centenarians. We also searched the European Longitudinal Studies on Aging (e.g., BASE, ELSA, Lundt 80+, Octo-twin) to find results on people aged 80 years and over. There is a great variability in what constitutes the concept of old-old, particularly the age boundary of age groups. Although most of the studies classify people aged 80+ years as old-old or very old, others put those aged 75+ in this same category, and a few consider the old-old as those aged 85+. Our main interest is on the protective factors associated with successful and active aging, and on the adaptation process to the challenges of this last stage of life.

To adapt to the challenges of getting older, people have to cope with illness and aging-related losses. The range of possible outcomes of the aging process is sufficiently large to include completely different trajectories above and below a disability threshold. The concept of wisdom (Baltes & Staudinger, 2000) is defined as an expertise in the conduct, meaning, and interpretation of life. It is hypothesized that old people regulate the subjective impact of health-related losses by internally adapting and reconstructing reality, and so report positive well-being even when objective life circumstances are negative. The proposed SOC model (selection, optimization, compensation) explains how elderly people can cope successfully with age-related losses, mainly by using the compensation mechanism later in life. More recently, Baltes (1997) updated his own theory focusing attention on the dilemmas of the so-called fourth age. These very old populations are characterized, according to the author, by a reduced potential to compensate for losses because of cognitive decline and increased frailty. Evidence from the BASE study (Baltes & Mayer, 2001) shows and accumulation of chronic problems in the fourth age (80% of old-old people experience losses in 3–6 areas: vision, hearing, strength, functional capacity, instrumental activities of daily living [IADL, activities of daily living [ADL], illness, cognition), increased systemic breakdown in psychological adaptability, and increased losses in positive aspects of life (happiness, social contacts). The profile of functioning 2 years prior to death appears increasingly negative with losses in cognitive functions and in identity, greater loneliness, and psychological dependence. Even though the news is not very good, the heterogeneity of the aging process can shed light on the future and teach us how to prevent or postpone decline and intervene to raise the quality of life of this very old population.

Baltes and Smith (2003) summarize their current view on the dilemmas of the fourth
age in a core article that appeared in *Gerontology*. The main idea is that recent findings about the oldest-old point toward a biocultural incompleteness, vulnerability, and unpredictability of the fourth age. They stress the losses in cognitive potential and ability to learn, increase in chronic stress syndrome, sizeable prevalence of dementia, high prevalence of frailty, dysfunctions, and multimorbidity, all endangering human dignity in dying at older ages. The meta-theoretical proposition about the biocultural architectures of the fourth age argues that the efficacy of culture to compensate for biological decline decreases in very old age. The authors consider that the fourth age is not a simple continuation of the third age and that healthy and successful aging has its age limits. They consider that resources should be allocated to children, youth, and young adults to guarantee age fairness, and that societal resources continue to be available to support old age.

We begin by reviewing the more recent findings on cognition and personality, and finally physical and mental health. Next we focus on adaptation, quality of life, and life satisfaction within an integrative view of very old age. Looking at the positive aspects of a successful long life we will arrive at preventive interventions, avoiding, or at least postponing, disability, to as close to death as possible, and questioning the recent pessimistic view of Baltes, described above. The shortage of research with old-old people in Europe make it difficult to restrict the literature reviewed to European research, although there are major contributions coming from European teams.

### Cognition in Very Old Age

Based in a systematic review of cognitive decline in the general elderly population, Park, O’Connell, and Thomson (2003) showed that some degree of cognitive impairment was almost universal and could be expected in the majority of the oldest-old. The prevalence of cognitive impairment and the rate of decline increased with age. Studies excluding people with dementia at baseline showed smaller rates of decline. The intra- and interindividual variation was great. The Cambridge Project for Later Life (Brayne, Huppert, Paykel, & Gill, 1992) was cited to illustrate the proportion of participants whose cognition was unchanged (15%), with a further 28% improving over the 28-month follow-up. In the Baltimore Epidemiologic Catchment Area Study, 32% of the participants did not change their cognitive function over a period of 11.6 years follow-up (Lyketsos, Chen, & Anthony, 1999). If the cognitive decline seems normative, its extension and temporal limits are not, as we could see from a vast number of revised papers.

Howieson et al. (2003) examined the occurrence and outcome of cognitive decline in healthy, community-dwelling, old-old people who at entry had no cognitive impairment and were followed for up to 13 years. Three outcomes of aging were determined: intact cognition, persistent cognitive decline without progression to dementia, and dementia. Whereas 49% remained cognitively intact, 51% developed cognitive decline. Those who remained cognitively intact had better memory at entry and were less likely to have APOE4 than those who developed cognitive decline. Of the 48 par-
participates with cognitive decline, 27 (56%) developed dementia about 2.8 years later. The old are at high risk for developing cognitive decline but many will not progress to dementia during the next 2 to 3 years or even beyond. Hong, Zarit, and Johansson (2003) examined participants from the larger Origins of Variance in the Old-Old: Octogenarian Twins (OCTO-Twin) study. Mild cognitive impairment was rated at baseline, however, neither set of criteria predicted subsequent dementia. The failure to confirm subsequent dementia suggests that there may be many sources of mild cognitive impairment in very late life besides incipient dementia, and once again the progress is not unidirectional.

Higher age was related to lower performance in all cognitive measures, except synonyms. For digit span forward, symbol digit, and general cognitive ability tasks, there was an interaction between sex and age with greater deficits in the performance of women compared with those of men at higher ages. They did not found sex-specific genetic influences, and the magnitude of genetic effect was similar for men and women (Read, Vogler, Pederson, & Johansson, 2006).

McGinnis and Zelinski (2003) find that there is a subgroup of older adults who experience verbal processing and comprehension deficits and a subgroup that does not. The size of the verbal deficit subgroup increases with age. One of the hypotheses to explain the cognitive performance of older adults is the abstraction deficit. According to this, there is a tendency for over-abstracted processing, characterizing inferential processes, that increases with age, which means that the old-old individuals are more likely to focus on thematic interpretations instead of processing at more optimal levels of abstraction.

The extent to which the characteristics and behaviors of an individual change or remain stable over the life span is an important issue for the study of cognitive aging. It seems that performance variability, which refers to change that is relatively rapid and transient, is related to changes in cognition and may be considered a marker of cognitive aging (MacDonald et al., 2003).

Cognitive performance seems not to benefit from training in very old age. Singer, Lindenberger, and Baltes (2003) trained old-old people from the BASE study in mnemonic skills but did not obtain any gains, particularly in the crystallized-ability domain. These differences in plasticity could be predicted by 6 years prior to loss in perceptual speed. More precisely, perceptual speed, memory, and fluency declined with age whereas knowledge remained stable up to age 90, declining thereafter. It seems that rates of decline vary by distance to death, age, and intellectual ability (Singer, Verhaeghen, Ghisletta, Lindenberger, & Baltes, 2003).

In the Lund 80+ study, Svensson et al. (1993) report cognitive decline with advancing age regardless of the health status of the individuals. The authors present a comparison of their own data on reasoning and spatial ability with those from the Gothenburg Health Study and found significant decline comparing baseline measures at 70 years with those 9 years after, and no differences between people aged 79 from Gothenburg and people aged 80 from Lund.

Data from the second wave of ELSA (English Longitudinal Study of Ageing) directed by Michael Marmot (Banks, Breeze, Lessof, & Nazroo, 2006[not in refs]), showed that one-third of the sample reported that their memory had worsened over the
previous 2 years. Older groups have a double disadvantage in relation to their memory performance, that is: they remember fewer words immediately and they forget more. Around two-thirds of participants aged 75+ have a striking impairment in prospective memory – remembering to carry out an action without being reminded. The most sensitive measure of cognitive decline, particularly for the older group, was speed of information processing. Literacy was strongly age related and the impairment was greater in people aged 80+ years. The trend for literacy impairment to increase with age was evident even when controlling for level of education. The higher the level of wealth, the better the cognitive performance, on all measures except speed of processing (Huppert et al., 2006).

The proximity to death seems to accelerate decline in memory, reasoning, speed and verbal abilities (Johansson et al., 2004). According to Small et al. (2003), mortality is related to deficits observed in old people in cross-sectional studies, and mortality is also related to longitudinal changes in cognitive performance among a group of very old individuals. These associations were independent of cause of death.

Both physical and cognitive activities were related to better cognitive performance. Cognitive activity was a stronger predictor than physical activity of the complex but not the simple tasks, suggesting that physical and cognitive stimulation are useful in protecting against cognitive decline with age (Newson & Kemps, 2006b). Actually, fitness was a strong predictor of cognition and accounted for more variance in processing resources than in higher-order functions. Newson and Kemps (2006a) found that cardiorespiratory fitness may have a selective protective effect against age-associated cognitive decline. Ghisletta et al. (2006), based on data from SWILSO-O (Longitudinal Study on the Oldest-Old; Lalive d’Espinay et al. (2001) suggest that increased leisure activity engagement may lessen decline in perceptual speed but not in verbal fluency or performance, whereas cognitive performance does not affect change in activity engagement.

Cognitive decline is concurrent with sensory decline in old age. It seems that there is a common factor explaining a small proportion of variability of both (memory and visual aging) but that there are also independent factors influencing cognitive and sensory decline in agreement with neuroimaging studies showing different rates of changes in different regions within an individual (Anstey, Hofer, & Luszcz, 2003).

There are two main hypotheses to explain cognitive aging: (1) The source of age-related declines on a wide variety of cognitive tasks is based on changes in a single mechanism underlying many functions, on random changes caused by life experiences or (2) there are process specific changes. The first hypothesis is consistent with the idea of dedifferentiation of specialized abilities (Baltes, Cornelius, Spiro, Nesselroade, & Willis, 1980), and the common aging factor could be, for example, the general slowing observed in old people (Salthouse, 1998). The second hypothesis is consistent with the research of Zelinski and Lewis (2003) as they concluded that there may be multiple processes in aging, some associated with stability and others associated with change but that the process-specific models of change better explain cognitive aging.

In summary, some degree of cognitive impairment is almost universal and can be expected in the majority of the oldest-old, however, its extension and temporal limits vary widely. Cognitive decline is concurrent with sensory decline in old age and the proximity to death seems to accelerate decline.
Personality Along the Life Span

Although many studies have examined the issue of personality stability in early and middle adulthood, few have explored the limits of personality stability in the very old, who are often confronted with major changes in their health and life circumstances, which can severely impact adaptive behavior. Maiden, Peterson, Caya, and Hayslip (2003) conducted a longitudinal study of women with a mean age of 80 years. They were assessed on the personality traits of Neuroticism, Extroversion, and Openness. Although multiple regression analyses revealed moderate stability on all three traits, their stability was found to be influenced by negative changes in life circumstances. For example, decreased social support and increased unmet needs were associated with more Neuroticism. Less Extroversion was associated with poorer health and greater psychosocial needs. The trait of Openness was very stable and was the least affected by life events. These contradictory findings are reconciled by considering personality development within an interaction framework. Other findings report small changes, for instance, the cross-sectional study of Weiss, Costa, Karuza, Duberstein, Friedman, and McCrae (2005), which found no age differences in personality as measured with the NEO, although the old-old people aged 80–100 years, particularly the men, were higher in Agreeableness.

Svensson et al. (1993) showed that persons from the Lund 80+ study who experienced a negative change in health showed more Neuroticism and experienced lower life satisfaction depending on the coping mechanism used (e.g., avoidance coping leads to less Neuroticism).

It seems that personality stability extends to very old age. Read et al. (2006) studied the stability and change in genetic and environmental components of personality in pairs of twins 80 years and over and found high mean level stability in Extroversion and Neuroticism. Mortality was related to lower scores in Extroversion and higher scores in Neuroticism. The genetic effects were moderate for Extroversion and Neuroticism. Nonshared environmental effects were less stable over time. No new genetic effects were found over time, thus, showing more stability. New environmental effects emerged but this does not show cumulative long-lasting effects.

As a synopsis, it seems that personality stability extends to very old age, although negative changes in life circumstances was found to influence some variation.

Physical Health in the Oldest-Old People

Health is a major factor of quality of life particularly in very old age. During the 20th century, mortality among the old declined about 1% per year (Crimmins, 2004). Although according to Olshanansky, Carnes, and Desesquelles (2001) the future increase in life expectancy will be minimal and implies deep knowledge, and intervention, in the basic mechanisms of aging. Trends in the health of the elderly can be summarized in two opposite hypotheses from the 1980s – one by Fries (1980) assuming the “compression of mortality” with disease and disability postponed to later ages, and the other
by Kramer (1980), considering the “expansion of morbidity” that assumes that people will simply live longer with greater burdens of disease and disability. The actual general trend shows that older people are healthier then they were 2 decades ago, with improvements in most dimensions of health. People live longer and have fewer disabilities, have less functioning loss and report themselves to be in better health. Because people live longer a greater percentage of people have some specific common diseases and on average live with more diseases, on the other hand having a disease appears to be less disabling. There is a strong cohort effect in the improvement of health that seems to favor those in their 60s. The key for continuing improved health seems to be to delay the onset of risk factors, disease, and disability in older-age people (Crimmins, 2004).

Results from ELSA (Banks, Breeze, Lessof, & Nazroo, 2006) shows from the first wave of data (cross-sectional) that there is considerable variation in the level of physical impairment between age groups. Of the respondents in their 80s and older, 58% report no difficulties with basic activities of daily living and 17% report no difficulty with mobility functions; walking speed slows dramatically with age; and chronological age is the strongest determinant of scores on the objective cognitive tests, whereas scores on the subjective measure (self-reported memory) are more strongly influenced by education and occupational class than by age). Breeze, Cheshire, and Zaninotto (2006) reported that in the second wave of ELSA, only 1 in 10 of those aged 80 years and over were without a diagnosis of any chronic condition. Older age was also associated with greater likelihood of multiple falls. The association between wealth and health indicators largely disappeared in those older than 75 years.

The conclusions of the Rotterdam Study (Hofman, Jong, van Duijn, & Breteler, 2006) show that the neurological diseases (dementia, stroke, Parkinson’s disease, and macular degeneration) are extremely common and increase with age. The rise of incidence seems to continue in very old people. The authors stressed the fact that longitudinal studies, like that one, made clear that silent and nonsilent strokes predict dementia and that stroke is often a precursor of dementia. They also found a strong predictive value of diabetes mellitus for Alzheimer’s disease and cognitive function. Their point was the possibility of prevention or at least postponement of the diseases by looking carefully to the vascular factors, to the oxidative stress, and the inflammatory factors earlier in life.

Data from five annual interviews of people 80–84 years old, living in the community, of The Swiss Interdisciplinary Longitudinal Study on the Oldest-Old (SWILSO-O; Lalive d’Espinay et al., 2001) shows that 17% of people were dependent at base line and that 5 years later this number rose to 37%. However, the most common individual health trajectory was stability (be it in good or bad health), which means that decline was not the rule. Moreover, in the first wave, 58% were helping others (children) and 45% were still helping others in the second wave. At the same time, the number of those receiving help rose from 21% to 42%.

In the Lund 80+ study two-thirds of the subjects were not dependent on any kind of regular formal or informal support. Regarding medical examination, only 13% had symptoms requiring additional treatment, 51% had diagnoses and were being treated, and 24% were found to be healthy (Svensson et al., 1993).
Pain is an important factor influencing quality of life in very old age and we should be more attentive and proactive about it. Among old-old subjects living in the community, daily pain is highly prevalent and this condition is associated with impaired muscle strength and lower physical performance (Onder, Cesari, Russo, Zamboni, Bernabei, & Landi, 2006). Sleep is another area of discomfort and complaint for the old-old. Research on this subject is difficult, mainly because of the medication taken by most old people and their sleep behavior during the day. McCrae et al. (2003) report that the old-old slept longer each night, but took longer to fall asleep, napped more, and were more likely to complain of insomnia than the young-old; otherwise, the young-old/old-old distinction did not explain sleep differences among different types of sleepers. Data from the Lund 80+ study (Svensson et al., 1993) show that sleep was judged very good or fairly good for 76% of the sample although 31% of people took hypnotics.

Nutrition is a very important issue during old age. The old old people believed they were doing well nutritionally despite reduced independence and physical limitations. They were positive about their lives and creative in problem solving to remain independent. Social relationships were the major factor for maintaining independence into old age. The leading barrier to maintaining nutritional health was health problems. Those with more barriers were more likely to be depressed. Knowledge of aids and barriers to nutritional health, from a personal perspective, gives an understanding of the issues and concerns of old-old people (Callen & Wells, 2003). Besides these problems, the old old people were less likely than the old and young-old ones to do health check-ups. Model testing found that age, chronic illnesses, degree of physical and mental health, and cognitive status directly or indirectly influenced older adults participation in primary and secondary health behaviors (Resnick, 2003). The health status effects on health behavior change differ by age group and health status. Food consumption, food preparation, and medical care show negative change for old old persons (Zanjani, Shaie, & Willis, 2006). Health interventions need to focus on the old old individuals with physical disability, and on smoking and seat belt use, to limit future onset of disability and morbidity and prevent premature death.

It is well established from the health psychology literature that subjective health is more influential on quality of life than objective health. Benyamini, Blumstein, Lusky, and Modan (2003) investigated gender differences in the association between self-rated health (SRH) and mortality. The study was based on an Israeli nationally representative sample (aged 75–94 years), who were interviewed about their SRH, as well as sociodemographic information and other measures of health, physical functioning, cognitive status, and depression. For both genders, SRH was associated only with shorter term mortality and not with longer-term mortality. This association was strongest among the old (ages 75–84) women, compared with the old men and with the old old (85–94) women and men. The SRH-mortality association may differ among age and gender groups.

Svensson et al. (1993) found that 25% of the 80+ individuals rated their health as very good and an additional 49% rated health as fairly good. The correlation between the individuals’ and physicians’ ratings was highly significant, which is very interesting considering the predictive value of these measures in terms of mortality and mor-
bidity. In ELSA three-fifths of people at age 80 or over described their health as good, very good, or excellent (Marmot, 2006).

According to Ben-Ezra and Shmotkin (2006), the more significant predictors of mortality in the old-old in Israel (CALAS study) are age, sex, disability, and self-rated health, although their predictive effect seems to diminish in very old age.

Personality also seems to be associated with perceived health and functioning status in older people (Duberstein et al., 2003) and lifetime trauma (e.g., sexual and physical abuse, witnessing crime, premature loss of a parent) appears associated with worse health in later life, although the risk is greater for the young-old than for the old old individuals (Krause, Shaw, & Cairney, 2004).

In summary, we can assert that the actual general trend in health shows that older people are healthier then they were 2 decades ago, with improvements in most dimensions of health. The most common individual health trajectory was stability (be it in good or in bad health), which means that decline was not the rule.

Mental Health in the Oldest-Old People

The association between physical health problems and depression is well documented even though the direction of the association is not clear. Late-life depression is common, disabling, and frequently comorbid with physical illness. Physical health and depression are closely related in the elderly (Beekman, Deeg, van Tilburg, Smit, Hooijer, & van Tilburg, 1995) as reported in cross-sectional and longitudinal studies. The relation between four aspects of physical health and depressive symptom levels were studied in a community-based sample of older inhabitants of a small town in the Netherlands. Results indicate that depression is sufficiently different from physical health to be distinguished from it, and that it is sufficiently related to physical health to be relevant for further study. The more subjective measures of physical health used in this study (pain and subjective health) appear to have a much stronger relation with depression than the more objective health-measures (chronic diseases and functional limitations). Physical health and aspects of the social environment such as marital status appear to have independent effects on mood. In this study these effects were moderated by age and sex. In women and the young-old none of the associations between physical health and depression were significant. In men and the old-old all associations were highly significant.

Most longitudinal studies report increases in depression contrarily to cross-sectional studies that are more likely to report stability or even decrease of depression. Rothermund and Brandstädter (2003) concluded that there are two phases: one to about 70 years characterized by stability and a subsequent phase with an increase of depressive tendencies may be because of the expectation of impending death.

We found in a representative sample of UK old and very old people living in the community that when adjusting for other variables (e.g., health problems, disability), age is not a predictor of depression. There were positive associations between depres-
sion and loneliness, number of health problems, and limitations caused by illness and a negative association with knowing neighbors and self-rated good quality of life (Paúl, Ayes, & Ebrahim, 2006).

According to Zhang, Ho, and Woo (2005) physical health is not the only aspect associated with depression. Income was significantly associated with cognitive functioning and geriatric depression in elderly persons in Hong Kong. Mental health, ADL deficiency, major chronic conditions, and resource utilization are interrelated. The fact that aging is associated with increasing cognitive impairment and geriatric depression presents new challenges for the health care system.

Depression is a serious problem for the oldest-old but a number of correlates are consistently identified in this age group as well as in the elderly population in general. Financial strain, poor self-rated health, loneliness, and heart disease were significantly and positively related to depression in the oldest-old, after gender, marital status, education, living arrangement, functional disability, sensory impairment, cognitive ability, and the presence of eight medical conditions were controlled. Interestingly, financial strain, self-rated health, and loneliness were found to be significant correlates of depression in the young-old and in the old-old groups. Therefore, they should be carefully considered for prevention and treatment of depression (Chou & Chi, 2005).

Mental well-being seems to benefit from physical and leisure activity in older adults, as was found by Lampinen, Heikkinen, Kauppinen, and Heikkinen (2006) in an 8-year follow-up study. Therefore, activity, health, and mobility should be targeted for preventive intervention in old age.

In general, we know that late-life depression is common, disabling, and frequently comorbid with physical illness. Most longitudinal studies report increases in depression contrarily to cross-sectional studies that are more likely to report stability or even decrease of depression. [exact repeat of sentence further above]

Quality of Life and Resilience in Very Old Age

Adapting to the challenges of aging is a major task for very old people. It is generally accepted that there are resource deficits, namely, in physical and functional health, social networks, and cognitive capacity in old-old people (e.g., Jopp & Smith, 2006), which enforce constant adaptation and a continuous redefinition of quality of life. Regardless of this, very old people reported happiness and a positive outlook on life, both good predictors of well-being during very old age. Most centenarians of the Heidelberg Centenarian Study felt happy, although they were experiencing decline in certain domains of functioning (Jopp & Rott, 2006). We found in a community sample of English people aged 80 years and over that 66% had long standing illness, disability, or infirmity; 53% had limitations in social participation, and 86% had limitations in activities of daily living. However, more then 70% rated their health and quality of life as good. Despite this apparent paradox between health and quality of life, deeper analyses showed that those in better health were more optimistic, and those with more health problems and more limitation of activity expressed lower self-perceived health status,
lower quality of life, and less optimism. This observation points, on one hand, to the importance of health for quality of life and, on the other hand, to the “low expectancies” people have for their health in later years, easily surpassed in our time (Paúl, Ayis, & Ebrahim, in press). Similar results were obtained by Samuelsson et al. (1997) in the Swedish Centenarian Study. The authors show that centenarians who reported high quality of life were healthier than those with lower levels.

Freund and Baltes (1998) reported a negative age correlation for the use of optimization and SOC strategies in a sample of old and very old people. The protective effect of SOC in determining successful aging was dependent of the resource level of the old-old individuals. The old-old people who profited more from SOC were those with low resources showing that SOC strategies serve as protective buffers when resources are limited (Jopp & Smith, 2006).

Autonomous living is the main objective of old people. People want to live on their own, taking care of themselves, engaged in the community, and being able to cope with the challenges of getting older and with the declines associated with age. To succeed in doing so people need to stay competent even in very old age. Competence comes out as a key aspect of old age and particularly of very old age.

Mastery of daily living is essential and a major component of competence during old age. Usually this mastery is measured by one’s ability to perform the ADL strictly related to survival and IADL, also essential to independent living. In a chapter devoted to everyday competence in old and very old age, Baltes and colleagues (2001) reviewed the concept of competence and showed evidence of its progression in old people. Their perspective of competence includes skills, mastery and the context, and is differentiated into two components: a basic level of competence (BaCo) and an expanded level of competence (ExCo). The BaCo reflects the basic personal maintenance of daily life (ADL), and the ExCo reflects the optional leisure and social activities, as well as the IADL, including relating the self to the world, and influencing quality of life. In any case, we are looking at not only capacities but behaviors. The reported findings show that older people differ from younger ones in resting time, which lasts longer in the oldest group, and in instrumental and leisure activities, that take up less time in the very old age group. Participants aged 85 and above report more difficulty in almost all the activities (except eating and grooming). In fact, the older people are less engaged in all activities. One conclusion of this study is that age and basic competence are important independent predictors of expanded competence. At the same time it becomes clear that there is a great variability between people, reinforcing the concept of differential aging. The authors propose balance/gait, intelligence, and personality as moderating factors between age and competence. That means that it is not age but health and psychosocial factors that are affecting competence.

Wilms, Riedel-Heller, and Angermeyer (in press) showed in a representative sample of the Leipzig population 75+ years old that 61.8% had relevant deficits in their capacity of independent living (ADL and IADLs). Most of the limitations were the result of variance shared by dementia and mobility-related declines suggesting caution when interpreting results from scales of ADL and IADL.

In brief, in spite of some physical and functional health problems, most of the very old people reported happiness and a positive outlook on life. Evidence shows great
variability of aging between people and that not age but health and psychosocial factors are affecting competence and many of those are modifiable.

**Adapting to Very Old Age: The European Contribution to Research**

Depending on the type of study (cross-sectional or longitudinal) data about people aged 80+ vary widely. In general, we can say that cross-sectional studies show more age-related decline then longitudinal ones. However, most of the studies show health and cognitive decline particularly close to death. Regarding personality and the emotions, although some papers found minor changes over time, it seems that it is quite stable or even that old people can better adapt to aging challenges.

Future research to study this very old group is urgent and should adopt a longitudinal approach. Cross-sectional studies will continue to have a role as exploratory pilot studies or as a first stage of prospective longitudinal studies (Shaie, 2000).

Takkinen and Suutama (2004), based on a study of lifelines of 83–87-year-old Finnish people, reported that the interindividual variance was greater during childhood and old age comparing with middle adulthood. Most of the lowest points in life were located in childhood and the highest points in the present old age. The densest period of major events and their affective meaning was in youth and young adulthood. The content is human relationships and school oriented in women and work and war oriented in men. These results seem to corroborate those of Field (1997). He found that when people were asked the period of life that brought them the most satisfaction “right now” was the most frequent answer.

Some psychological characteristics of the individuals can predict the long-term likelihood or severity of disability in older adults. According to Caplan and Schooler (2003) fatalism measured 20 years earlier predicted greater difficulty in everyday cognitive tasks as well as illness; on the contrary self-confidence was associated with lesser degrees of cognitive and fine-motor difficulty and intellectual resources (flexibility and education) predicted less cognitive and gross motor difficulty as well as lesser degrees of illness 20 years after. Most of these associations were stronger for the oldest group, and even though they were more fatalistic, they considered themselves as competent as the youngest to deal with unavoidable events in their lives. The way these characteristics influence illness and disability is not clear. It may be that people with more intellectual resources, less fatalism, and more self-confidence engage in more preventive behaviors. On the other hand, it may be that people higher in fatalism or lower in self-confidence might experience more stress and so became more vulnerable to disease and disability.

According to the findings of the Cross-Sectional and Longitudinal Study (CALAS), from Israel (Walter-Ginzburg, Shmotkin, Blumstein, & Shorek, 2005), there is a gender-based resilience pattern. Programs to reduce mortality should include physical activity, attendance of religious services, maintenance or improvement of ADL, and engaging in solitary leisure activities. For women smoke cessation programs and cognitive activities are very important and for men maintaining or increasing emotional ties will be beneficial.
In parallel with positive emotions, social relations seem to be very important for the survival and quality of life of very old people. Lyyra and Heikkinen (2006) studied 80-year-old Finns and found that the risk of death was 2.5 times higher in women with infrequent experiences of reassurance of worth, emotional closeness, sense of belonging, and opportunity for nurturance than women highest in these measures. This association remains even when controlling for sociodemographics and psychological and physiological health and functioning. None of these dimensions of social support seems to be relevant for men’s mortality.

In summary, adaptation and its results in very old age can be predicted by some psychological characteristics of individuals, such as fatalism or self-confidence. These characteristics may positively influence illness and disability and even mortality by means of preventive behaviors or by making people more vulnerable to stress and subsequent disease.

Conclusion and Future Trends

This review of recent data about very old age shows that, as Marmot, Banks, Blundell, Lessof, and Nazroo (2004, p. 4) stated:

“Middle age is no paradise; old age is not hell. The challenge for the future is to understand what leads some 80-years-olds to high levels of functioning and some 50-year-olds already to show signs of decline.”

It seems that cross-sectional studies show more decline than longitudinal ones, pointing to the importance of having more longitudinal research on aging and particularly following individuals for as long as possible. It is almost consensual that despite the decline observed in all studies heterogeneity is the rule and individual trajectories differ considerably and are quite stable at their own level. Apparently personality does not change significantly over time, and cognition suffers decline in some areas, mainly speed of information processing but differs enormously between individuals and to some extent with gender, wealth, and health status. The period near death seems to evidence a general decline in most old people. Health is a very important factor related to autonomy and well-being but once again there is still a significant amount of people (between 30% and 50%) who manage their lives independently and even continue to help others. Recent studies on health trends show that levels of disability are decreasing even though health continues to be a challenge. The pessimistic view conveyed by Baltes and Smith (2003) does not seem to be corroborated by many other papers reviewed here. In fact, at the individual level, the fourth age appears to be the continuation of the third age, enlarging the heterogeneity of aging results, and at least for one third of old people, living longer lives seems to be a positive and successful experience, until very close to dead.

We believe that on the whole, aging is a positive experience for the majority of people, even those in their 80s. In fact, optimism and positive emotions toward the self,
others, and the world appear to be critical aspects of longevity and quality of life. Future research should seek to understand how these factors come to influence health and well-being in very old age.

Although people aged 80 years and older are the most vulnerable to loneliness and deprivation, the future trend for less literacy impairments in these cohorts is quite positive and makes us expect a better future for this growing group of very old people.

References


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