

Psychological Well-Being and Autonomy in Very Old Age: Findings from a Study in the South of Portugal

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Abstract

A person-oriented approach, *k*-means cluster analysis, was used with the *aim* of define “desirable” or “less desirable” ageing profiles in a heterogeneous sample of very old adults, defined as participants aged 85 years or older (85+). *Research sample* consisted of 52 participants with a mean age of 88.4 years ($SD = 2.8$ years) living in southern Portugal, in the community (51.9%) or in residential care homes. Three subgroups of participants with distinct empirical profiles were identified across *measures* of cross-disciplinary constructs (body mass index, cognition, and mental health), positive psychological functioning dimensions, and selection, optimization, and compensation (SOC) adaptive strategies. The majority of participants was assigned to the *Overall-Positive Profile* ($n = 25$), a relatively high performing subgroup which seemed to experience the more balanced trajectories of ageing. The remaining participants were assigned to the *Average Profile* ($n = 15$) and to the *Depleted Profile* ($n = 7$) subgroups. Subjects in this small cluster had the lowest mean scores compared to the results of the other two large clusters, which points to an overall decline in their trajectories of ageing. *Study findings* suggest the usefulness of a multidimensional person-oriented approach to describe and understand the variability of trajectories in advanced ageing. This perspective, by refining the comprehension of the dynamics between social and psychological losses and available resources in the very old, can contribute to practical matters substantiating what are the most appropriate social and psycho-educative strategies to meet their specific needs and help them cope with the challenges of extended longevity.

Keywords: very old adults; life-span perspective; psychological well-being; functional autonomy.

Introduction

People aged 80 years old and over have become the fastest growing age segment in most European populations (PRB, 2010). Portugal, with individuals aged 65 or more years accounting for 19% of the entire population, is the 7th most aged country in the world (INA, 2011). This marked change in the age structure is a strong challenge to meet the needs of the extended longevity of the Portuguese population, which means the request to develop at governmental and community levels effective social and health policies. This general scenario informs the present study focused in the functioning profiles of a sample of very old people living in Algarve, in southern Portugal. The basic theoretical framework of our investigation departs from two core approaches to the study of normal, optimal, and pathological profiles of ageing: the perspectives of life-span psychology (Baltes & Baltes, 1990) and life-course psychological well-being (Ryff, 1989). The main aim is to assess whether identification and description of individual differences allow outlining “desirable” or “less desirable” ageing profiles of very old adults, defined as participants aged 85 years or older (85+). This aim implies a person-oriented approach with a broadly defined assessment of functioning. The relevance of main factors in the ageing process of 85+ is briefly analysed.

85+and the losses and challenges of an extended longevity

Why do some people age more optimally than others? Why do some older people thrive in the face of adversity? Age-related diseases as a part of “normal ageing” do not affect all people in the same way. In fact, older people have differential and multifaceted patterns of ageing and are thought to be more diverse than younger people in health, psychological functioning, and dimensions of social interaction (Nelson & Dannefer, 1992). Despite decrements in general autonomic activity and in the scope of plasticity, older adults have the capacity for considerable resilience in the face of stressful challenges (Ryff et al., 2002b). However, accumulating evidence reveals that very old age brings with it increased risk factors for mental health and well-being. The prominent role of health status in the analysis of well-being in the 85+ is pointed by research (e.g., Gestorf et al., 2006; Smith & Baltes, 1997) and can place serious constraints on life satisfaction and overwhelm individuals to such a degree that they moderate their expression of well-being. There is also evidence in the literature that social relations, community differences and socio-economic factors affect the ability of older individuals to function normally in their daily life (e.g., Avlund et al., 2004). Older people with low educational levels or incomes have shown to be in worse health, at higher risk of long-term health problems and functional limitations due to illness. This pattern is found to be consistent across all European Countries (Jané-Llopis & Gabilondo, 2008).

Functional capacity and cognitive functioning

Functional capacity corresponds to the ability for the individual to care for oneself, performing personal care tasks and more complex tasks of adaptation to the environment in which he lives. There is evidence of the strong connection between functional ability, intellectual functioning, and social involvement (Baltes et al., 1999). Almost all the indicators of physical and cognitive functioning seem to be related to life-expectancy,

showing that older individuals with lowered functional capacity have a significantly shorter life expectancy compared to those with good functional capacity (BURDIS network, 2004). However, many older people experience functional limitations due to health-related problems. Moreover, the disabling impact of mental health problems as depression on daily life activities is as high as that of some major chronic disorders (Avlund et al., 2004). Some degree of cognitive impairment could be expected in the majority of oldest old (Gestorf, 2004) and cognitive dysfunction is one of the most important factors that make it impossible for very old people to live independently at home (Jané-Llopis, E., & Gabilondo, A. 2008). However, recent data (for a review see Paúl, 2007) shows there is still a considerable amount of very old people (ranging from 30% to 50%) who manage their lives independently and to whom living longer lives seems to be a positive experience, until very close to death.

Well-being and positive psychological functioning

Research has shown that well-being is connected with mental health and promotes positive psychological functioning (Ryff & Singer, 2002a; Ryff, Singer & Love, 2004). Emphasizing a life course approach to personal growth and autonomy during old age, the theory of psychological well-being (for a review see Ryff & Singer, 2006) established six core dimensions of positive psychological functioning: these include positive self-regard (*self-acceptance*), pursuing goals that give life meaning (*purpose in life*), realizing one's unique potential (*personal growth*), experiencing deep connection to others (*positive relations*), managing surrounding demands (*environmental mastery*), and exercising self-direction (*autonomy*). According to Ryff and Singer's research (2006) purpose in life and personal growth profiles show a decline in the older adult, and positive relations with others and self-acceptance show little variation with age.

Selection, optimisation and compensation (SOC) strategies of adaptation

In SOC model (Baltes & Baltes, 1990; Freund & Baltes, 2000) selection, optimization, and compensation are universal processes of adaptive regulation throughout the life-span. Research in this field suggests that using SOC strategies to manage changes in the multiple domains that occur in very old age are a key factor to enhance personal development and well-being (Freund & Baltes, 2007). *Selection* concerns the process of setting personal goals and is a basis to focus in limited resources whereas *elective selection* focuses on developing and committing to a subset of possible options and *loss-based selection* is a reformulation of goals in response to internal or external losses (Freund & Baltes, 2002). *Optimization* refers to the acquisition and application of goal-relevant means involved in attaining higher levels of functioning. *Compensation* addresses the management of impending or actual losses in function by investment of substitutive means. Despite some decrease in the use of optimization and compensation in old age, a large number of studies point the importance of the interplay of the three SOC processes in successful ageing (Freund & Baltes, 2000). Given the probability that losses increase with age and changes in multiple domains occur in old age, successful ageing requires strategies that both enhance positive development (elective selection, optimization,) as well as regulating losses (loss-based selection, compensation). The positive relation of optimization and compensation with subjective indicators of successful ageing as satisfaction with ageing and emotional well-being is pointed out in several research (e.g., Freund & Baltes, 1998; Freund & Riediger, 2003).

Method

Participants

In order to recruit participants, cooperation was promoted with local community centres, day care centres and residential care homes, in urban and rural areas. The only exclusion criteria considered for this study was age below 85 years, diagnosed dementia, and presence of disabling pathologies or disease that prevented to understand informed consent. Individual interviews to subjects, ranging from 70 to 100 minutes, were conducted to examine several domains of functioning. Research sample consisted of 52 participants 85 to 97 years; mean age 88.4 years ($SD = 2.8$ years), the majority being women (67.3%) and most individuals were widowed (86.5%). Illiteracy rate was high (42.3%), a third had an elementary school degree and 61.5% had low professional qualifications. Most participants lived in the community (51.9%) and the remaining in residential care homes. Almost all those participants living in the community spent part of their time in day care centres and benefited from some kind of social support.

Instruments

In order to ensure consistency to the person-oriented holistic approach of very old people, a set of cross-disciplinary instruments were applied:

- *The Biopsychosocial Assessment Method* (Botelho, 2005) for the assessment of functional ability.
- *The Mini Mental State Examination* (MMSE) (Folstein, Folstein, & McHugh, 1975) in the Portuguese adaptation (Guerreiro, Botelho, Leitão, Castro – Caldas, & Garcia, 1994), for screening cognitive functioning.
- *The Scales of Psychological Well-Being, reduced version* (Ryff, 1989) in the Portuguese adaptation (Novo, Silva, & Peralta, 1997) for assessment of dimensions of well-being.
- *The Mental Health Inventory, MHI-5* (Ware, Johnston, Davies-Avery, & Brook, 1979; Veit, & Ware, 1983) in the Portuguese adaptation (Ribeiro, 2001) for screening mental health.
- *The SOC Questionnaire (Short -Form)*, originally developed by Freund and Baltes (1988), in the Portuguese version (Amado, Diniz & Martin, 2006), to assess the SOC strategies of adaptation.

Data Analysis

Person-oriented approach, multivariate cluster analysis methods, were used in the study to assess whether identification and description of individual differences in a heterogeneous sample of very old persons allowed outlining different profiles of ageing in clusters, or subgroups of participants. Clusters are characterized by their unique patterns or profiles of average scores on the variables used for the clustering process (Rapkin & Luke, 1993). This perspective was operationally defined in the present study as empirically derived subgroups sharing communalities in psychosocial profiles across several domains of functioning. Considering the study aims the k -means non-hierarchical method was selected. In k -means, before starting the clustering process, it is necessary to

establish the number of clusters. Ward’s hierarchical clustering method was applied to help to determine the optimal number of clusters. The analysis of Ward’s dendrogram clearly indicated the eligibility of the three cluster solution as the most adequate for the data. Research sample consisted of 52 participants, but only 47, who scored in all the measures of the selected thirteen variables, were included in the clustering process. As the variables were measured in different units before clustering, respondent’s data was standardized by rescaling each variable to have a mean of zero and a standard deviation of unity. All analysis has been performed with IBM SPSS Statistics 19.

Results

In *k*-means analysis clusters are represented by a central vector, the cluster centers, and a case is assigned to the cluster for which its distance mean is the smallest. As can be observed in *Table 1* the final cluster centers had a large difference in the number of subjects assigned to each one, with Cluster 3 including the majority of subjects (53.2%), Cluster 2 (31%) and Cluster 1 only a small number of subjects (14.9%). Despite this unequal distribution, the three cluster solution was consistent in differentiating empirically three different patterns or profiles of ageing in the total sample ($n = 47$).

Table 1. K-Means Final Cluster Centers of Variables

Variables	Cluster 1 (n=7)	Cluster 2 (n=15)	Cluster 3 (n=25)
Body mass index	.562	-.244	-.497
Cognitive functioning	-.904	-.043	-.231
<i>Mental health</i>	-.683	-.454	.489
Autonomy	-.375	-.094	.372
<i>Environmental mastery</i>	-.819	-.914	.682
Personal growth	-.542	-.506	.175
Positive relations	.079	.237	.032
Purpose in life	-.376	-.133	.342
<i>Self-acceptance</i>	-.745	.312	.522
<i>Elective selection</i>	-.845	.901	.246
Loss-based selection	-.422	.071	.170
Compensation	-.604	.143	-.201
Optimization	-.870	.267	.044

Note. All scores reported in standardized scores; variables in italic indicate the dimensions that differentiate more between clusters, according to ANOVA.

In *Table 1* we can also observe the variables (in italic) that, according to the application with descriptive purposes of ANOVA F-test, revealed greater potential to differentiate participants between clusters profiles. In this perspective, the most important were the well-being dimensions environmental mastery ($F = 25.2$) and self-acceptance ($F = 7.75$), SOC adaptive strategy elective selection ($F = 10.5$) and mental health ($F = 8.79$).

Three subgroups of participants with distinct empirical profiles were identified. *Table 2* describes those profiles generated across measures of the thirteen variables selected for the cluster analysis. *Cluster 1* represents the smallest subgroup of participants and had the lowest mean scores in all the indicators, except for environmental mastery. This subgroup seemed to experience an impoverishment of their abilities, a kind of an overall decline in their trajectories of ageing compared to the results of the other two large clusters. Those are the reasons why this low average subgroup was designated as having a *Depleted Profile*. Differently, the subgroup of participants assigned to *Cluster 2* was designated as having an *Average Profile* because they seemed to experience in most domains average or usual trajectories of ageing. However, this subgroup profile is also characterised by a great focus on cognition, positive relations with others and SOC strategies compensation and optimization, where they reached the highest clusters scores. The largest subgroup of participants was assigned to *Cluster 3* and was designated *Overall-Positive Profile* because this subgroup of participants scored above the sample mean in 9 variables of the study, and average in the other 4. They seemed to experience the more balanced trajectories of ageing, focused on mental health and wellness dimensions although also with adaptive SOC investment.

Table 2. Profiles of the Three Clusters: Cluster Means and Standard Deviations of the Thirteen Variables by Cluster

Variables	Cluster 1	Cluster 2	Cluster 3
	Depleted Profile (n=7) 14.9%	Average Profile (n=15) 31.9%	Overall-Positive Profile (n=25) 53.2%
Body mass index	27.7 (5.72)	24.5 (3.47)	23.4 (3.21)
Cognitive functioning	20.2 (4.85)	24.2 (3.53)	23.4 (5.05)
Mental health	15.7 (5.88)	16.7 (4.20)	20.9 (2.53)
<i>Psychological well-being</i>			
Autonomy	12.5 (1.61)	13.3 (2.16)	14.6 (1.89)
Environmental mastery	11.1 (3.18)	10.8 (2.50)	15.5 (1.63)
Personal growth	7.14 (1.77)	7.27 (2.78)	9.60 (3.26)
Positive relations	14.0 (3.23)	14.5 (2.13)	13.8 (3.02)
Purpose in life	9.14 (2.73)	9.87 (1.12)	11.2 (2.52)
Self-acceptance	12.5 (3.86)	15.6 (1.29)	16.2 (1.95)
<i>SOC strategies</i>			
Elective selection	1.71 (1.38)	1.93 (.45)	2.16 (.94)
Loss-based selection	1.00 (.57)	1.40 (.73)	1.48 (.71)
Compensation	.71 (.48)	1.47 (.99)	1.12 (.78)
Optimization	.57 (.78)	2.00 (1.00)	1.72 (1.27)

Note. Boldface numbers indicate the highest mean scores of each variable and the clusters were they occurred.

In *Table 3* we may see, for each subgroup, data concerning health and functioning, which were not considered in the cluster analysis: functional and physical autonomy, number of falls and cognitive impairment. Although the majority of individuals in the three clusters

has some degree of disability, the subgroups differed in their vulnerability to functional and physical decline, with losses in functional autonomy ranging from 100%, in the Depleted profile, to 68% in the Overall-positive profile.

Table 3 highlights as very old people experience the accumulation of multimorbidity and the increase in functional and physical disability. Even in the balanced trajectories of ageing in the subgroup with *Overall-Positive Profile* some degree of disability in *Physical Autonomy* is expressive (40%) and more than a third reported to have some falls. Two participants (8%) with *Cognitive Impairment* were identified in this overall-positive profile. This result was not unexpected, in our perspective, given the high illiteracy rate (36%) in this largest subgroup, as in the total sample, which is a well-known risk factor for cognitive impairment and also a recognised source of bias in MMSE cognitive assessment (Ponton, & Ardila, 1999). Unlike educational level and living in rural or urban settings, gender and living arrangement of participants is related with cluster membership, with the majority of women (72%) and the participants living in the community (60%) included in the overall-positive profile.

Table 3. Characteristics of Functional Capacity in the Three Subgroups Identified in the Cluster Analysis

	Cluster 1	Cluster 2	Cluster 3
	Depleted Profile (n=7)	Average Profile (n=15)	Overall-Positive Profile (n=25)
Characteristics	Number (%)		
<i>Functional Autonomy</i>			
Independent or autonomous	0 (0)	2 (13.3)	8 (32)
With some degree of disability	7 (100)	13 (86.7)	17 (68)
<i>Physical Autonomy</i>			
Independent or autonomous	1 (14.3)	5 (33.4)	15 (60)
With some degree of disability	6 (85.7)	10 (66.7)	10 (40)
<i>Number of Falls</i>			
Without Falls	3 (42.9)	8 (53.3)	16 (64)
With Falls	4 (57.1)	7 (46.7)	9 (36)
<i>Cognitive Impairment</i>			
Without Impairment	4 (57.1)	15 (100)	23 (92)
With Impairment	3 (42.9)	0 (0)	2 (8)

Discussion

In this study cluster analysis was used to discern functioning profiles in a sample of adults aged 85 years or older (85+). Three subgroups of participants with distinct empirical profiles were identified across measures including functional and mental health constructs, psychological well-being dimensions and SOC strategies. The domains for defining cluster membership were chosen on the basis of previous research on patterns

or profiles of ageing. Research applying a person-oriented approach to the study of heterogeneity focused on participants older than age 85 is relatively sparse and only in the past decade became more frequent. In those studies, in the groups-defining dimensions prevails physical and functional health and cognition, followed by dimensions related to personality, well-being and social integration (for a review see Gestorf, 2004). Despite several limitations of the present study and the small sample size, the basic question is whether or not the clusters we identified are meaningful to elucidate data patterns and show some evidence of their value to the field of study.

All clusters show cognitive decline, expected on the basis of age, and investment in positive relations with others, important aspect of survival, given the progressive dependence of others in very old age. Otherwise, in line with research findings in psychological well-being in older adults (e.g., Ryff & Singer, 2006) personal growth and purpose in life show a decline in all subgroups. In all clusters there are also a substantial proportion of participants with physical and functional disability, showing the acknowledged accumulation of loss experiences and multimorbidity in the oldest old. Given the distinct characteristics of the profiles identified in the 85+ sample, they were thus nominated *Overall-Positive Profile* (n= 25), *Average Profile* (n =15) and *Depleted Profile* (n=7). The three subgroups of participants differed above all in terms of their vulnerability to functional and physical disability, mental health and wellness dimensions, and investment in adaptive SOC strategies. Results suggest the utility of a person-oriented approach to understand the variability and detect risks and protective factors in the very old trajectories of ageing. Key domains to elucidate “desirable” or “less desirable” ageing profiles in the research sample: environmental mastery, elective selection, mental health, and self-acceptance. These findings highlight that the synergy between well-being dimensions, SOC adaptive strategies and mental health enhance positive psychological functioning into very old age, and suggest these resources are available to the majority of the oldest old, even if some functions are on the decline. As already mentioned, the positive relation between these dimensions and positive trajectories of ageing is pointed out in several research (e.g., Freund & Baltes, 1998; Ryff, Singer & Seltzer, 2002b).

Implications for the field of education and learning of older adults

In this final topic we pretend just to outline briefly some connections between findings of this study and the new questions and problems arising in the field of education and learning of older adults as a result of the increasing size of very old people within our societies. Actually, most of the studies in the field are about third age learning. The period of advanced old age poses specific challenges to the goals and meaning of lifelong learning and demands new educational policies and practices, as Peter Jarvis (2011) pointed out in one of last meetings of ELOA’s network. In a similar perspective, *Futurage: A Road Map for European Ageing Research* (2011) when considering main research insights in education and learning of older adults points out the importance of targeting the specific needs of the very old and the most efficient psycho-educative approaches, and how they can become implemented most successfully.

Life span and life course approaches to positive trajectories of ageing emphasize the interrelation between individual and social resources. Therefore, by using personal

strategies individuals can contribute to their own successful ageing. The problem is that in very old age the increment in personal losses and decline in autonomy and health status imply they need more social and health support to age well and have some opportunities to engage in educational activities. This is the situation of the large majority of participants in this study. The personal circumstances and backgrounds of their lives, with low level of education and low social status and living arrangements in residential homes or staying many hours in day care centers, means the learning opportunities as well as individual's motivation and aptitude to participate in educational activities are strongly limited. So, facilities at all levels for social interaction for the very old are very important to facilitate continuing personal learning (Jarvis, 2011). Also intergenerational support in family and community is essential to increase cooperation between different generations and give a chance to encouraging new types of late-life learning initiatives (Formosa, 2012).

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