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Satisfaction with life related to functionality in active elderly people

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Introduction. To study the relationship between the objective variables of functionality and degree of life satisfaction in elderly people with an active lifestyle.

Material and methods. The study took place using a sample of 340 elderly people, aged 60-85, who were all leading an active life. The tests applied were: Satisfaction with Life Scale, Rivermead Behavioral Memory Test, Memory Failures Everyday, Geriatric Depression Scale, OARS social support subscale, COOP-WONCA physical dimension subscale and Siu and Reuben hierarchical scale for self-sufficiency.

Results. Statistical analyses were made using Pearson's correlations, with a significance level of $p < 0.05$ and $p < 0.001$ between the objective variables and satisfaction with life level. The overall results show a negative correlation, that is, a paradox of well-being between the objective criteria of level of studies, memory level and self-sufficiency and the objective criterion of the level of life satisfaction.

Conclusion. Proposals for intervention in elderly people's physical activity are needed, since reduced mobility could lead to a pathological pattern of life.

Key words:
Age. Personal satisfaction,. Functionality. Observational descriptive studies.

Actas Esp Psiquiatr 2009;37(2):61-67

Satisfacción con la vida en relación con la funcionalidad de las personas mayores activas

Introducción. Estudiar la relación entre variables objetivas de funcionalidad y grado de satisfacción con la vida en personas mayores con un estilo de vida activo.

Material y métodos. Estudio con 340 personas mayores con edades comprendidas entre los 60-85 años. Todas ellas presentan un estilo de vida activo. Pruebas aplicadas: Escala de Satisfacción con la Vida, Test Conductual de Memoria Rivermead, Cuestionario de Fallos de Memoria de la Vida Diaria, Escala Geriátrica de Depresión, subescala de apoyo social del OARS, subescala de la dimensión física del COOP-WONCA, escala de valoración jerárquica para la autonomía de Siu y Reuben.

Resultados. Análisis estadísticos con las correlaciones de Pearson ($p < 0,05$ y $p < 0,001$) entre las variables objetivas de funcionalidad y el nivel de satisfacción con la vida. Los resultados globales muestran que hay correlación negativa, es decir, paradoja del bienestar entre los criterios objetivos nivel de estudios, nivel de memoria y autonomía y el criterio subjetivo del nivel de satisfacción vital.

Conclusión. Se hacen necesarias propuestas de intervención en actividad física entre las personas más mayores ya que la reducción de la movilidad podría ser el desencadenante de un modelo de vida patológico.

Palabras clave:
Edad. Satisfacción personal. Funcionalidad. Estudio descriptivo mediante observación.

INTRODUCTION

The demographic changes that have been occurring in our societies have been causing a social reality unknown up to now, such as increased longevity and the specific weight of the elderly as a social group. Aging projections tend to grow increasingly older. In the year 2050, 19.8% of the Spanish population will be 65 years or older (HelpAge International, 2002)[1].

Recognition of the potential of the elderly has become known as «successful aging». This distinguishes between pathological or passive aging patterns and a normative or active aging pattern. In the latter group, the physical and psychological functioning levels remain on high levels and, in some aspects, may even improve (Rowe and Kahn, 1987)[2].

Some authors include criteria related with the subjective assessment and the meaning that the elderly person attributes to his or her condition within the concept of «good aging». In this sense, the presence of high levels of well-being

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is one of the criteria most mentioned as a component of «successful aging.» This well-being may sometimes be associated to a subjective experience of happiness or satisfaction while other times it is linked to objective values present in the culture (Caro and Sánchez, 2005)[3].

Both the objective and subjective criteria are necessary to define successful aging (Baltes and Baltes, 1990)[4]. The former are needed because they provide some clear and stable objectives that serve as a guideline for the prevention of a pathological model among the group of elderly subjects and the latter refer to the value system of the persons and make it possible to identify what is called «well-being paradox» (Mroczek and Kolarz, 1998)[5], that is, the fact that even under unfavorable situations, which should clearly be improved, the subjects can contemplate their situation in a satisfactory way.

Different authors have identified a pathological model of aging (Miller and Weissert, 2000[6]; Aarsland, Larsen, Tandberg and Laake, 2000[7]; Gaugler, Kane, Kane, Clay and Newcomer, 2003[8]; Hebert, Dubois, Wolfson, Chambers, and Cohen, 2001[9]; Liu and Tinker, 2001[10]; Strain, Blandford, Mitchell and Hawranik, 2003[11]) that increases risk of dependence of the consequent institutionalization, using objective criteria such as: low rate of affective relationships with family members and friends, loneliness or little family support (Aarsland et al., 2000[7]; Gaugler et al., 2003[8], depressive mood state (Harris and Cooper, 2006)[12], alteration of physical form and difficulties to perform daily life activities (Gaugler et al., 2003)[8], increased age and greater educational level (Aarsland et al., 2000[7]; Gaugler et al., 2003[8]; Himes, Wagner, Wolf, Aykan and Dougherty, 2000[13]; Liu and Tinker, 2001[10]; Smith, Kokmen and O'Brien, 2000[14]; Tomiak, Berthelot, Guimond and Mustard, 2000[15]; Yaffe, Fox, Newcomer, Sands, Linquist, Dane and Covinsky, 2002[16]), and cognitive level (Hebert et al., 2001[9]; Tomiak et al., 2000[15]).

In the study in question, the relationship between the objective variables of functionality with grade of life satisfaction of elderly persons with active aging are analyzed to observe if the well-being paradox exists.

Subjects

The sample of the present study is made up of 340 persons, 30 men and 310 women, whose ages range from 60 - 85 years. Mean age of the participants is 71.64 years (SD: 6.002). These persons carry out an active aging model (Kalache and Kickbusch, 1997)[17]. To do so, they attend the Social Action Centers (CEAS) of the Leon and Province City Hall to perform different activities. The sociodemographic characteristics of the sample are shown in table 1 and the means of the descriptive analyses of the tests applied are shown in table 2 (table 1 and 2).

The study is carried out with a correlational design to observe the relationships established between objective criteria that refer to characteristics on the cognitive (complaints of memory and objective level of memory), emotional (isolation, mood state), social (social support) and physical (physical condition and independence) levels and subjective criteria, specifically with the cognitive component of subjective well-being (Diener and Lucas, 1999)[18]. They also collect sociodemographic aspects such as gender, age, level of studies, role of caregiver, social relationships and variables related with the level of satisfaction with life.

Table 1 Sociodemographic Data

Category	N
Gender	
Men	30
Women	310
Age	
60-64	57
65-69	50
70-74	131
75-79	69
80-85	33
Studies	
Primary	265
Secondary	41
University	34
Zone	
Rural	165
Urban	175
Role	
Caregiver	55
Non-caregiver	285
Social relationships	
Relatives and friends	129
Friends	114
Alone	97

Table 2 Descriptive Data

	Media	SD
Depression	9.30	4.46
Memory	10.31	1.41
Not isolated	24.09	22.00
Social Support	0.95	0.84
Physical condition	2.85	0.78
Autonomy	1.48	1.30
Memory complaints	35.00	4.89

Procedure

Based on the sample characteristics, one of the most delicate aspects of our study was the data collection, since the elderly persons group often has sensory difficulties and functional alphabetization. To improve this handicap, training in the application of tests was given to both the study subjects and interviews. The subjects underwent a trail with similar questionnaire formats to those they were going to encounter and the letter size of the questionnaires they had to fill out was also increased, homogenizing the sensory and educational characteristics of the subjects. In regards to the interviewers, they were trained to apply and record data. To do so, they watched video recordings of interviewers giving tests to elderly subjects in a group session to identify errors and aspects to be improved in an evaluation. Both the interviewers and subjects interviewed, who appear in the video, were persons not belonging to the sample. The duration of the test application was 2.30 hours (1: 45 for the questionnaires made in groups of 10 persons and 45 minutes for the memory battery that was done individually).

Instruments

The tests used were: «satisfaction with life scale» (SLS)[19] to measure subjective criterion of satisfaction with life. This questionnaire had five items with multiple response alternative, that ranged from 7 «highly agree» to 1 «highly disagree». The Rivermead Behavioural Memory Test-RBMT of Wilson[20], developed to detect daily memory functioning deterioration, was used to measure the level of objective memory. This is made up of 10 subtests. It has four parallel versions. It grades the performance of Memory as Normal, Weak, Moderate and Severe. The subjective level of memory was measured with the Memory Failures Everyday, MFE of Sunderland[21], with 28 items on situations and activities of daily life. To measure mood state, the Geriatrics Depression Scale (GDS) of Yesa vage[22] was used. This instrument was adapted and validated for the Spanish geriatric population with high indexes of sensitivity and specificity. It is made up of 30 items that the subject should answer dichotomically. The cut-off for the Spanish population is 17/18 points. The subscale of social support of the Scale of Social Resources (OARS)[23] was used to evaluate social support. To evaluate the physical dimension, we used the COOP-WONCA *(Darmouth COOP Functional Health Assessment Charts/Wonca)*[24]. The COOP-WONCA charts are made up of nine scales, having a single item, with five point Likert-like answer alternatives. The highest scores express the worst functioning levels. The Hierarchical Assessment Scale for Autonomy of Siu and Reuben[25], specifically the Spanish version provided by Ruipérez (2000), was also used[26]. The scale is made up of six items referring to activities going from higher (instrumental activities) to lower difficulty (basic activities). For each activity, the subjects have to respond if they perform them independently and without problems or can only do them if they are helped. The highest scores indicate greater degree of autonomy.

In addition, a questionnaire was elaborated in which they were asked about different sociodemographic variables (gender, age, educational level, caregiver role and social relationships).

RESULTS OF THE CORRELATIONS

We have found a negative correlation in the global analysis of the variables between satisfaction with life and study level ($r = -0.402$, $p < 0.001$) and a positive one with the geographic zone ($r = 0.147$, $p < 0.001$), caregiver role ($r = 0.172$, $p < 0.001$), and social relationship ($r = 0.728$, $p < 0.001$). We have also found a negative correlation with the level of satisfaction with life and all the objective variables of cognitive functionality (memory ($r = -0.109$, $p < 0.05$), emotional ($r = -0.358$, $p < 0.001$), social ($r = -0.378$, $p < 0.001$), and physical ($r = -0.171$, $p < 0.001$) complaints (tables 3 and 4).

Table 3 Correlations of satisfaction with life and sociodemographic data

Category	Gender	Age	Studies	Caregiver role	Social relationships	Zone
Global	–	–	-0.402**	0.172**	0.728**	0.147**
Level of satisfaction						
High	–	–	–	–	0.366**	–
Low	–	-0.171*	-0.222**	0.166*	0.476**	0.148*
Geographic zone						
Rural	–	–	-0.307**	0.180*	0.726**	–
Urban	–	–	-0.505**	–	0.717**	–
Age groups						
60-64	–	–	-0.657**	–	0.811**	–
65-69	–	–	-0.674**	–	0.728**	–
70-74	–	0.289**	-0.432**	0.268**	0.803**	–
75-79	-0.274*	-0.303**	–	0.260*	0.822**	0.396**
+80	–	-0.468**	–	–	0.480**	–

A negative relationship is found in the group of subjects who have a low level of satisfaction with the characteristics of age ($r = -0.171$, $p < 0.05$) and studies ($r = -0.222$, $p < 0.001$). There is a positive relationship with geographic zone ($r = 0.148$, $p < 0.05$) and caregiver role ($r = 0.166$, $p < 0.05$). Level of satisfaction with life and social relationships have a positive correlation regardless of whether the subjects belong to the low or high level of satisfaction ($r = 0.366$, $p < 0.001$ and $r = 0.476$, $p < 0.001$). In the highly satisfied group, there is a negative correlation with memory level ($r = -0.219$, $p < 0.001$) and mood state ($r = -0.184$,

$p < 0.05$). In the low satisfied group, there is a negative correlation with mood ($r = -0.279$, $p < 0.001$) and social support ($r = -0.488$, $p < 0.001$) (tables 3 and 4).

Table 4 Correlations of satisfactions with life and functionality

Category	Memory	Conplaints	Depression	No isolation	Social support	Physical Conditions	Autonomy
Global	-0.257**	-0.109*	-0.358**	0.168**	-0.378**	-0.171**	-0.198**
Level of satisfaction							
High	-0.219**	–	-0.184	–	–	–	–
Low	–	–	-0.279**	-0.190**	-0.488**	–	–
Geographic zone							
Rural	-0.266**	–	-0.354**	–	-0.345**	–	–
Urban	-0.197**	–	-0.329**	0.334**	-0.381**	–	0.334**
Age groups							
60-64	–	–	-0.417**	-0.523**	–	–	0.694**
65-69	–	–	-0.383**	-0.356*	-0.381**	–	0.370**
70-74	-0.277**	–	-0.273**	-0.174*	-0.280**	-0.256**	0.248**
75-79	-0.350**	-0.369**	-0.541**	-0.240*	-0.473**	-0.278*	-0.240*
+80	-0.470**	0.378*	-0.524**	-0.376*	-0.677**	0.387*	-0.476**

Subjects from both the urban and rural zones have a negative correlation between satisfaction with life and study levels ($r = -0.307$, $p < 0.001$ and $r = -0.505$, $p < 0.001$) and a positive one with social relationships ($r = 0.726$, $p < 0.001$, and $r = 0.717$, $p < 0.001$). Those subjects from the rural area also have a positive correlation with the caregiver role ($r = 0.180$, $p < 0.05$). Regarding the functionality variables, there is a negative correlation in the geographic zones between memory level ($r = -0.266$, $p < 0.001$ and $r = -0.197$, $p < 0.001$), mood state ($r = -0.354$, $p < 0.001$ and $r = -0.329$, $p < 0.001$) and social support ($r = -0.345$, $p < 0.001$ and $r = -0.381$, $p < 0.001$). Furthermore, there is a positive correlation in the urban zone with autonomy ($r = 0.334$, $p < 0.001$) (tables 3 and 4).

In the 75-79 year old age group, there is a negative correlation between satisfaction with life and gender ($r = -0.274$, $p < 0.05$). The 70-74 age group has a positive correlation between satisfaction with life and age ($r = 0.289$, $p < 0.001$) and this is negative for the 75-79 year old age group ($r = -0.303$, $p < 0.05$) and over 80 years of age one ($r = -0.468$, $p < 0.001$). The 75-79 year old group has a positive correlation between satisfaction with life and rural zone ($r = 0.396$, $p < 0.001$). The 60-64, 65-69 and 70-74 year old groups show a negative correlation between satisfaction with life and study level ($r = -0.657$, $p < 0.001$; $r = -.674$, $p < 0.001$; $r = -0.432$, $p < 0.001$). The 70-74 and 74-79 year old groups show a positive correlation with the caregiver role ($r = 0.268$, $p < 0.001$ and $r = 0.260$, $p < 0.05$) respectively. All the age groups have a positive correlation between satisfaction with life and social relationships ($p < 0.001$). Regarding the functionality variables, there is a negative correlation between satisfaction and memory level in the age groups of 70-74, 75-79 and over ($r = -0.277$, $p < 0.001$; $r = -0.350$, $p < 0.001$; $r = -0.470$, $p < 0.001$). Regarding memory complaints, there is a negative correlation with satisfaction in the age group of 75-79 ($r = -0.369$, $p < 0.001$) and a positive one with the age group of over 80 years ($r = 0.378$, $p < 0.05$). Mood state and social support correlate negatively with satisfaction with life in all the age groups. Physician condition correlations negatively in the age groups of 70-74 years ($r = -0.256$, $p < 0.001$) and 75-79 years ($r = -0.278$, $p < 0.05$) and positively in the age group of over 80 years ($r = 0.387$, $p < 0.05$). Autonomy correlates positively with satisfaction with life in the age groups of 60-64 years, 65-69 and 70-74 years ($r = 0.694$, $p < 0.001$; $r = 0.370$, $p < 0.001$; $r = 0.248$, $p < 0.001$) and negatively with the age groups of 75-79 ($r = -0.240$, $p < 0.05$) and over 80 years ($r = -0.476$, $p < 0.001$) (tables 3 and 4).

DISCUSSION OF CORRELATION RESULTS

The overall correlations of the sociodemographic and functional variables analyzed show satisfactory aging except for study level, memory level and autonomy which show a pathological aging model. These same results are confirmed by other investigators who have studied the variables of elderly subjects who have a greater risk of being institutionalized[27].

Satisfaction and sociodemographic variables

The inverse relationship found between satisfaction with life and study level, regardless of the geographic zone, in the study subjects confirm the popular belief that «the less you know, the happier you are». However, if we consider that the sample is mostly formed by women, we could relate the low cultural level with generational, restriction and obligations factors due to their gender and socioeducational context factors[28,29,30,31]. In fact, the subject group with a higher level of studies has a negative relationship with the level of satisfaction with life, data that agrees with other investigators[32,33]. This contradiction could be related with the fact that the social integration of those who have had less intellectual possibilities is easier compared to those who have had an academic education who reach the social milestone of retirement, as a way of reducing the life activity.

We have found a positive correlation between age and satisfaction with life in the age group between 70-74 years. This could be explained by the high level of social participation (this doubles and triples the number of participants of other age groups in our study). Different investigators

stress the participation in social activities in a healthy and autonomous way of aging[7,8,34,35]. However, the relationship is the opposite with the age groups between 75-79 and the group over 80 years. This could be explained by the age itself, that is related with greater risk of fragility and incapacity[36] or with reduced aspirations[37,38]. If we consider that these are a central aspect to maintain satisfaction, then it is worthwhile taking precautions against lack of expectations among the elderly, promoting productive activities that favor their personal and social development in general[3].

The relationship of satisfaction with life with that of not being the caregiver, especially in the rural area where social support is more difficulty (home help and/or day centers)[39] confirms the data from other investigators who assure that taking the burden feelings of the caregiver into account prevents psychiatric disorders, such as their depression and the institutionalization of the patient's relative[8,40,41].

Satisfaction with life and functionality

The mood state, non-isolation and social relationships have the most significant correlations with satisfaction with life, the alter standing out the most. Thus, it is confirmed that this is the variable that best defines successful aging. According to the proposal of Rowe and Kahn[42], maintenance of satisfactory interpersonal relationships allows for better instrumental and socioemotional support and the theoretical models of quality of life relate sociability skills with better physical and mental functioning[43]. Although social activity decreases with age, this decrease is imposed externally or as an unfortunate response to loss of health and loss of relatives and friends. A healthy response to these events should be aimed at replacing social relationships, a substitution that favors maintenance of activity as long as possible and better mood state[44,45,46], data that are confirmed in our study.

Objective memory loss and memory complaints have a negative correlation with satisfaction. The latter is expected since it indicates that there are fewer complaints among those who are more satisfied, although this correlation is inverted as age increases. The fact that the complaints evolve reverses, especially in the older age groups, could be an early sign linked to dementia[33]. Investigations having a similar simple as ours have found that the prevalence of memory complains in the elderly population is between 25% and 50%. The factors that are associated to memory alterations are elevated age, low educational level and female gender[47,48]. Based on these data, it is important to consider the inclusion of cognitive training programs of both objective memory[49,50,51,52] and memory complaints[53] to prevent deterioration. Multidimensional treatments should be performed to delay cognitive deterioration as much as possible and to improve the quality of life of the elder, their relatives and social setting[54]. We consider that this type of proposal is correct if we consider that cognitive stimulation decreases with age[55] and that transition from normal aging to Alzheimer's Disease seems to be continuous and not discreet[56].

The relationship between satisfaction and physical form in the more advanced age groups are the inverse. This is to be expected since the weight of years that is often related with worse mobility is a necessary condition for good health[8] and for the persons to be motivated to continuing having expectations. This is an important aspect of satisfaction[57]. Elderly and sedentary persons loss more muscle mass. The consequence of this mass loss is loss of up to 40% of muscle force and 30% aerobic resistance while being related with reduction of mobility in one's setting and capacity to perform instrumental activities of daily living and greater risk of falls[58,59]. Different investigations show that exercise improves cardiovascular functions, posture, muscle and joint pains. This makes it possible to increase functional independence, understanding this as the capacity of a person to go shopping, visit friends, use public transportation, without overlooking mental functions and socialization[60,61,62]. Autonomy is another one of the physical aspects in which the older age groups have a reverse relationship with satisfaction. In order words, the greater dependence, the greater the satisfactions. These data can be explained from the socioemotional theory of Carteasen on considering that elderly person accept help better with age, so that greater proximity can be supposed. Consequently, there is grater affectivity. In fact, the correlation with satisfaction with life and mood state is greater in the oldest age groups[63].

The paradox of well-being

Objective criteria are necessary because they provide us with objective and stable data that can guide the intervention and avoid the so-called *paradox of well-being*[5]. That is, the fact that even under very unfavorable situations that should clearly be improved, persons can contemplate their situation with optimism and satisfaction. In our study, the variables such as level of studies, memory, physical form and autonomy clearly confirm the paradox of well-being since the subjects, especially those of older age, relate satisfaction with the worsening of these variables. One way to relieve this loss would be through the practice of physical activity since if we consider data such as that a person who is dependent for daily life activity, who performs physical exercise (which means an improvement in maximum oxygen usage only of about 3.5 ml oxygen per kilogram of weight and per minutes) can stop being functionally dependent, and even reach flexibility values equal to that which they had fifteen years earlier[64]. It should also be remembered that mental and social functions also improve with physical exercise[61,62]. It becomes necessary to promote functionality in the elderly age groups since they are the group having the greatest risk of abandoning an active life style.

ACKNOWLEDGENENTS

This study has been realized thanks to research project funded by the Exma. Diputación of León in 2006.

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