

THE QUALITY OF LIFE QUESTIONNAIRE (QLQ) FOR OLDER PERSONS WITH DISABILITY: A PRELIMINARY STUDY

M.^a Ángeles Alcedo Rodríguez*, Antonio-León Aguado Díaz*,
Benito Arias Martínez**, Meni González González*, Cristina Rozada Rodríguez*

* University of Oviedo. ** University of Valladolid

The aim of this study was to develop an instrument for the assessment of quality of life (QoL) in persons with disability involved in the ageing process. It was applied to a sample of 2,292 people over 45 years of age from different regions of Spain. The need for QoL assessment instruments for this group of people that allows us to make valid and reliable measures with which to plan effective intervention actions and strategies has guided the development of this Quality of Life Questionnaire (QLQ). Analysis of the instrument's psychometric properties revealed high internal consistency, with a Cronbach's alpha of 0.92. The dimensionality of the instrument yields a six-factor solution that samples six of the main QoL dimensions, namely, physical well-being, social inclusion, emotional well-being, personal development and self-determination, interpersonal relationships and material well-being. These results support the suitability of the QLQ for assessing QoL as it is perceived by the sample of our study, that is, older persons with disability.

Keywords: ageing, aging, disability, assessment, quality of life.

El objetivo de este trabajo es la elaboración de un instrumento para evaluar la calidad de vida (CV) de las personas con discapacidad que envejecen. Se ha aplicado a una muestra de 2.292 personas con discapacidad mayores de 45 años procedentes de distintas comunidades autónomas del territorio español. La necesidad de disponer de instrumentos de evaluación de CV para este colectivo de personas con discapacidad que envejecen, que nos permitan realizar medidas fiables y válidas sobre las que planificar actuaciones y estrategias de intervención eficaces, ha orientado la elaboración de esta Escala de Calidad de Vida (ECV). El análisis de las propiedades psicométricas de la escala muestra una elevada consistencia interna, alfa de Cronbach de 0,92. La dimensionalidad de la escala arroja una solución hexafactorial que muestrea seis de las principales dimensiones de CV, en concreto, bienestar físico, inclusión social, bienestar emocional, desarrollo personal y autodeterminación, relaciones interpersonales y bienestar material. Estos resultados evidencian la adecuación de la ECV para evaluar la CV tal y como es percibida por la muestra de nuestro estudio, las personas con discapacidad que envejecen.

Palabras clave: envejecimiento, discapacidad, evaluación, calidad de vida.

The concept of quality of life (QoL), which in modern times refers to the efficacy of treatments with the aim of estimating the losses suffered due to illness, is far from being a new concept, having been implicit in pre-Socratic thought, though it does not emerge in an explicit fashion until around 30 years ago. The dynamic nature of this concept and its association with diverse objectives makes it difficult to define. There is no unanimously accepted definition of QoL, but rather numerous definitions with various points in common. Some years ago authors were already speaking of over 100

versions and measures of the construct (Keith, 2001). Such conceptual plurality also exists in the field of disability. Thus, what links the different definitions of this term is that they cover a broad spectrum of dimensions of human experience, dimensions that refer to individuals' relationships with their lives (the extent to which expectations coincide with achievements), to objective and subjective factors that affect life or areas of human experience, and to one's degree of satisfaction with the perceived circumstances of life (Aguado, González, Alcedo & Arias, 2003).

The QoL model for the area of disability most widely accepted by the international scientific community is that proposed by Schalock (1996), which has recently been revised (Schalock & Verdugo, 2006). This concept uses indicators referring to eight dimensions that represent the nucleus of basic needs in the life of a person: *emotional well-being, interpersonal relations,*

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Correspondence concerning this article should be addressed to M.^a Ángeles Alcedo Rodríguez. Facultad de Psicología. Universidad de Oviedo. Plaza Feijóo, s/n. 33003 Oviedo. Spain.

E-mail: malcedo@uniovi.es

material well-being, personal development, physical well-being, self-determination, social inclusion and rights. A preoccupation with physical well-being, and especially with health and healthcare, make these the most relevant and determinant indicators of QoL in older persons with disability. Indeed, these indicators are found in over 80% of studies focusing on the ageing process in persons with disability. This can be explained by the fact that people's perception is radically altered when they present serious health problems. Together with these indicators, place and characteristics of residence, on the one hand, and social support and the roles of the family and service providers, on the other, emerge as vital components of QoL; another frequently-cited indicator –referred to in over 50% of studies– is social inclusion, while a lower proportion, roughly between 20% and 30%, refer to emotional well-being, personal development and interpersonal relations. The remaining dimensions –rights, material well-being and self-determination– are only found in about 10 percent of studies (Schalock & Verdugo, 2003).

These difficulties in relation to the definition of QoL have led to lively debate over another aspect, that of its *assessment*. In recent years, conceptual developments and the practical implications of the construct itself have stimulated interest in the principles that should guide the assessment process (Verdugo & Schalock, 2006). The focus of interest is on providing instruments with adequate goodness-of-fit criteria that permit appropriate measurement of QoL. Currently, there are a range of instruments, including structured interviews, scales, questionnaires, inventories, etc., whose field of application is basically that of young people with disability. An area in which there has been particularly intense activity in the development of such instruments is that of intellectual disability. In this regard, one of the best instruments is Schalock and Keith's (1993) Quality of Life Questionnaire, which has been adapted for Spanish population, specifically for assessing perceived quality of life in adults with intellectual disability in the employment context (Crespo, 2003). Another instrument available in the Spanish context is the Integrated Scale (*Escala Integral*; Verdugo, Arias & Gómez, 2006), which permits the objective assessment of quality of life in young adults with intellectual disability.

However, the multidimensionality and subjectivity of the concept and the lack of consensus on a definition lead to difficulties in the assessment of QoL (Cummins, 2005; Aguado, Alcedo, Rueda, González & Real, 2008). Added to such difficulties is the fact that attempts to

measure this construct lack any kind of broad or lengthy tradition, especially in the older population with disabilities –the specific population that concerns us here. There are no instruments designed or adapted for assessing QoL in older people with disability, despite the fact that this population is on the increase and is the source of numerous and novel challenges. The *social relevance* being acquired by the elderly population in general, and by *persons with disability* in particular – especially in relation to the large numbers involved– is enormous. More than half of those with disability living in Spain are aged 65 or over, while a quarter of the total, some 820,000, are aged 45 to 64, and coping with processes of *premature ageing*. Moreover, the *hard core* of situations of dependence, that is, those living in family homes with severe and total disability for carrying out basic everyday activities, numbers 859,890 (IMSERSO, 2005). The risk lies in being unable to provide quality responses to the needs of this population in view of the considerable lack of knowledge about it. Indeed, this is the least-studied age group within the disabled population. The absence of a conceptual framework that includes aspects of both the ageing process itself and disability, combined with a lack of solid and consensus-based theoretical models, have impeded the development of research lines contributing data with good empirical support in relation to QoL in the population in question (Aguado, Alcedo, Fontanil, Arias, Verdugo & Badia, 2006).

What is urgently needed, therefore, is a clear conceptual delimitation of the QoL construct in old age. Given its complexity, we acknowledge the difficulty of finding a unanimously accepted definition. Despite some degree of consensus with regard to a multidimensional approach that takes into account physical functioning, personal energy and vitality, psychological and emotional well-being, social functioning, received and perceived support and life satisfaction, its assessment is hampered by a lack of properly adapted instruments. In view of this situation, we must opt for a particular concept and model of QoL which permits us to design and develop an assessment instrument that meets the scientific requirements, that is: i) having an underlying solid theoretical model, ii) having guarantees of demonstrated reliability and validity, and iii) contributing useful information for the implementation of adequate care and support measures in response to the *needs* of the target population of this study, i.e., people with disability involved in the ageing process.

Therefore, the conceptualization of QoL proposed by Schalock, as a multidimensional construct covering both objective and subjective aspects, and which is reflected in a general perception of well-being or satisfaction, is that which we consider most suitable in relation to the aims of our research. Indeed, this model has served as a basis and guide for the design and development of the *Quality of Life Questionnaire*, constructed and applied within a wider research project¹, and whose psychometric properties we shall now present.

METHODOLOGY

Participants

Selection of participants was made by means of non-probabilistic incidental or accidental sampling. We took advantage mainly of *associations* and *public and private institutions* that are in contact with or work with disabled groups in each of the 16 Autonomous Regions of Spain in which the research was carried out. A group of assistants, principally psychology graduates and senior undergraduates in psychology and special education, previously trained in carrying out field work, contacted the institutions and associations and applied the questionnaire.

The cut-off point was set at age 45, a level considered as indicative of ageing in persons with disability. Although chronological age is indeed an arbitrary and rather imprecise measure of the ageing process (since there is no single moment at which a person becomes “elderly”), we considered it appropriate to take age 45 as the threshold for the onset of ageing. This cut-off point can be justified by the following factors. First, the widespread and oft-repeated idea that ageing in some people with disability begins before the age of 50, in the form of so-called *premature physical ageing*, sometimes accompanied by psychological and social dysfunctions, and recognized by a large part of those affected and specialists; and second, the criteria of Spain’s National Statistics Institute’s “Survey on disabilities, deficiencies and state of health for 1999 (*Encuesta sobre discapacidades, deficiencias y estado de salud: Año 1999*) (INE, 2000), which takes as one of its analysis levels the age range 45 to 64, considering this as the first stage of the ageing process.

The questionnaire was filled out by a total of 2,292 people with disability aged over 45. Mean age was 59.26

years, with a range from 45 to 99 years. With regard to gender, the sample is quite homogeneous, with similar percentages of men (51.5%) and of women (48.5%). As far as place of residence is concerned, the majority of the sample (67.3%) live in urban areas, while the regions (*Comunidades Autónomas*) most strongly represented in our sample are the Principality of Asturias, 45.8%, Castilla-León, 17.4%, and the Basque Country, 12.2%. As regards type of disability (Table 1), there is a clear predominance of persons with physical disability, 37.3%, and intellectual disability, 32.3%. The rest of the disability categories are much less well represented. Those in our sample have borne their disability (which may have developed over this time) for a mean of 37.03 years, with a standard deviation of 21.39 years. It is clear, then, that our participants have spent a long period living with their disability, giving them relevant knowledge of the experience of life and ageing from this perspective.

Finally, and with regard to residential characteristics (Table 2), it can be seen that over half of our sample of disabled older persons (59.5%) live in family environments, either that of their own nuclear family or that of close relatives. Just 28.5% of them are living in homes for the elderly. Thus, we are able to state that we have restricted the representation of elderly people living in institutional environments, a desirable objective in view of the fact that they are not

Valid	Intellectual disability	32.3
	Physical disability	37.3
	Visual disability	5.6
	Auditory disability	7.7
	Mental disorders	6.7
	Alzheimer’s disease	5.7
	Parkinson’s disease	4.6
	Total	100.0

Valid	Alone	6.9
	Own family	35.3
	Family of origin	24.2
	Other family	5.0
	Institutional	28.5
	Total	100.0

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representative of the Spanish population of elderly persons with disability, the majority of whom, according to the INE Survey data (Jiménez & Huete, 2002, 2003), live in family environments.

Drawing up the Quality of Life Questionnaire

The initial version of the *Quality of Life Questionnaire* (QLQ) has a total of 65 items or questions covering the different dimensions of QoL. Its aim is to reflect the importance and degree of use of the objective indicators of QoL that define the dimensions of the model

FACTOR	IP ITEM	M	SD	r	alpha	ALPHA
Factor 1	1 Level of autonomy in domestic tasks	2.38	2.15	0.37	0.93	
	2 Level of autonomy in basic activities	3.15	2.15	0.48		
	3 Level of autonomy for getting up and going to bed	3.34	2.16	0.39		
PW	4 Level of autonomy for changing body position	3.55	2.11	0.40	0.92	
	5 Level of autonomy for getting about	3.18	2.09	0.38		
Physical well-being	6 Level of autonomy in use of public transport	2.40	2.37	0.31	0.93	
	7 Sphincter control	3.11	2.85	0.29		
	8 Physical exercise or sporting activity	1.78	2.19	0.26		
	9 Quality of eating habits	2.33	2.40	0.32		
	10 Personal rating of state of health	2.68	2.28	0.34		
Factor 2	11 Practice of a hobby or leisure activity	2.15	2.15	0.35	0.93	
	12 Formation of aid associations	1.91	1.91	0.56		
SI	13 Information on resources	0.94	0.94	0.54	0.92	
	14 Intensity or frequency of support	1.82	1.82	0.49		
Social inclusion	15 Participation in community activities	1.71	1.71	0.20	0.93	0.69
	16 Architectonic barriers in my environment	3.32	3.32	0.15		
	17 Limitations on access to community life	3.34	3.34	0.18		
	18 Feeling of respect and acceptance by society	2.28	2.28	0.34		
Factor 3	19 A person like any other	2.28	3.06	0.67	0.92	
	20 Importance of religion	1.97	2.94	0.53		
EW	21 Practising religious person	1.75	2.92	0.48	0.92	
	22 Satisfaction with current situation	1.98	2.89	0.69		
Emotional well-being	23 Substantial family problems	2.13	3.03	0.70	0.92	0.91
	24 Satisfaction with emotional life	2.16	2.97	0.72		
	25 Satisfaction with one's living environment	2.38	2.83	0.73		
	26 Satisfaction with current sex life	0.01	4.63	0.42		
Factor 4	27 Ability to look after yourself	2.68	0.93	0.37	0.93	
	28 Ability to look after family well-being	1.94	0.93	0.29		
PD	29 Ability to relate and communicate	3.04	0.93	0.40	0.93	
	30 Decision-making on daily life activities	2.03	0.93	0.36		
Personal development	31 Choice of where and with whom to live	1.73	0.93	0.34	0.93	0.85
	32 Goals and objectives in life	1.30	0.92	0.63		
	33 Good personal control	1.82	0.92	0.74		
	34 Life satisfaction	1.97	0.92	0.74		
Factor 5	35 Satisfaction with family relations	2.23	2.99	0.43	0.93	
	36 Satisfaction with family support	2.49	2.55	0.39		
IR	37 Satisfaction with how you are treated	2.12	3.43	0.54	0.92	
	38 Friends	2.49	2.28	0.50		
Interpersonal relations	39 Satisfaction with friend relationships	2.17	2.98	0.39	0.92	0.88
	40 Intimacy for forming relationships	2.02	3.04	0.39		
	41 Social relations with others	2.16	2.58	0.49		
	42 Satisfaction with all relationships	1.90	3.13	0.68		
Factor 6	43 Satisfaction with current income	1.76	2.78	0.32	0.93	
	44 Home ownership	1.75	2.90	0.28		
MW	45 Adequate living conditions	1.74	3.81	0.54	0.92	0.70
	46 Suitable place to live	2.30	2.75	0.26		
Material well-being	47 Availability of personal technical aids	0.07	4.53	0.28	0.93	

Note: IP: position of item on the scale; M: mean of the item; SD: standard deviation of the item; r: coefficient of correlation of each item with the total scale; alpha: reliability coefficient of the

proposed by Schalock (1996). The definitive version of this instrument after modifying –according to the experience of the different phases of research in which the instrument has been used– the dichotomic responses into scale-based responses for obtaining greater precision and variability, has a smaller number of items, 47 in total, since the empirical verification of the data resulted in the elimination from the analyses of those items that failed in this sample to obtain sufficient corrected homogeneity. That is, we removed 17 items that obtained low or negative indices of corrected homogeneity. Thus, the QLQ ended up as a Likert-type scale with 4 response options. Likewise, and given the

IP	ITEM	r	alpha
1	Level of autonomy in domestic tasks	0.37	0.93
2	Level of autonomy in basic activities	0.48	0.92
3	Level of autonomy for getting up and going to bed	0.39	0.93
4	Level of autonomy for changing body position	0.40	0.93
5	Level of autonomy for getting about	0.38	0.93
6	Level of autonomy in use of public transport	0.31	0.93
7	Sphincter control	0.29	0.93
8	Physical exercise or sporting activity	0.26	0.93
9	Quality of eating habits	0.32	0.93
10	Personal rating of state of health	0.34	0.93
11	Practice of a hobby or leisure activity	0.35	0.93
12	Formation of aid associations	0.56	0.92
13	Information on resources	0.54	0.92
14	Intensity or frequency of support	0.49	0.92
15	Participation in community activities	0.20	0.93
16	Architectonic barriers in my environment	0.15	0.93
17	Limitations on access to community life	0.18	0.93
18	Feeling of respect and acceptance by society	0.34	0.93
19	A person like any other	0.67	0.92
20	Importance of religion	0.53	0.92
21	Practising religious person	0.48	0.92
22	Satisfaction with current situation	0.69	0.92
23	Substantial family problems	0.70	0.92
24	Satisfaction with emotional life	0.72	0.92
25	Satisfaction with one's living environment	0.73	0.93
26	Satisfaction with current sex life	0.42	0.93
27	Ability to look after yourself	0.37	0.93
28	Ability to look after family well-being	0.29	0.93
29	Ability to relate and communicate	0.40	0.93
30	Decision-making on daily life activities	0.36	0.93
31	Choice of where and with whom to live	0.34	0.93
32	Goals and objectives in life	0.63	0.92
33	Good personal control	0.74	0.92
34	Life satisfaction	0.74	0.92
35	Satisfaction with family relations	0.43	0.93
36	Satisfaction with family support	0.9	0.93
37	Satisfaction with how you are treated	0.54	0.92
38	Friends	0.50	0.92
39	Satisfaction with friend relationships	0.39	0.92
40	Intimacy for forming relationships	0.39	0.93
41	Social relations with others	0.49	0.92
42	Satisfaction with all relationships	0.68	0.92
43	Satisfaction with current income	0.32	0.93
44	Home ownership	0.28	0.93
45	Adequate living conditions	0.54	0.92
46	Suitable place to live	0.26	0.93
47	Availability of personal technical aids	0.28	0.93

Note: IP: position of item on the scale; r: coefficient of correlation of each item with the total scale; alpha: reliability coefficient of the scale if the item is removed.

relevance of certain sociodemographic and clinical characteristics in the ageing process of these persons, the instrument registers personal data related to the variables in question. Once the instrument had been drawn up and applied, we needed to validate it in order to confirm its applicability in older persons with disability. To this end, and first of all, we carried out an analysis of its *reliability*, whose results are presented in the following section.

Psychometric properties of the Quality of Life Questionnaire

Data on reliability

We examined the internal consistency of the instrument in the sample of 2,292 people with disability aged over 45 using the inter-item specific analysis procedure (Cronbach's alpha). The combined results are shown in **Table 3**.

In turn, **Table 4** shows separately the correlation between each item and the total instrument, the alpha that would be obtained if we eliminated each one of the items separately and the alpha for the total of the instrument.

The correlation between each item and the total questionnaire yields coefficients close to and exceeding 0.40, thus satisfying the minimum criterion of 0.20 considered as the most suitable for this type of instrument. These results indicate high functional equivalence between the response to each item and the response to the total instrument. Thus, and given that the items present satisfactory correlation indices, it can be considered that there is a sufficient degree of discrimination, suggesting homogeneity within the QoL questionnaire.

As far as the alpha internal consistency indices are concerned, all are high, with values ranging from 0.92 to 0.93 and a global coefficient of 0.92, which indicates high homogeneity. It should be borne in mind that consistency coefficients of 0.80 and over are considered good, while those over 0.90 are deemed excellent.

In sum, the instrument's internal consistency is high, showing that it is a *reliable instrument*: it measures in an adequate fashion the field of study, i.e., QoL in relation to a series of basic dimensions. The next objective is the dimensional analysis of the QLQ, that is, its *factorial structure*, which will provide us with data on its structural validity.

Factorial structure

Once the reliability of the QLQ had been analyzed we

proceeded to its factorial analysis, another of the objectives of the present study, with the aim of judging the applicability of the instrument to the population of ageing persons with disability. The factorization procedure was principal components *promax rotation*.

Table 5 shows the means and standard deviations of the 47 items making up the questionnaire. The results reveal that there is variability and dispersion of the scores, and that the responses given to the items fit normal distributions. The criteria followed for selecting the items that would finally form part of the factors were as follows:

- ✓ We considered only saturations of 0.35 or higher.

IP	ITEM	M	SD
1	Level of autonomy in domestic tasks	2.38	2.15
2	Level of autonomy in basic activities	3.15	2.15
3	Level of autonomy for getting up and going to bed	3.34	2.16
4	Level of autonomy for changing body position	3.55	2.11
5	Level of autonomy for getting about	3.18	2.09
6	Level of autonomy in use of public transport	2.40	2.37
7	Sphincter control	3.11	2.85
8	Physical exercise or sporting activity	1.78	2.19
9	Quality of eating habits	2.33	2.40
10	Personal rating of state of health	2.68	2.28
11	Practice of a hobby or leisure activity	2.15	2.15
12	Formation of aid associations	1.91	1.91
13	Information on resources	0.94	0.94
14	Intensity or frequency of support	1.82	1.82
15	Participation in community activities	1.71	1.71
16	Architectonic barriers in my environment	3.32	3.32
17	Limitations on access to community life	3.34	3.34
18	Feeling of respect and acceptance by society	2.38	2.28
19	A person like any other	2.28	3.06
20	Importance of religion	1.97	2.94
21	Practising religious person	1.75	2.92
22	Satisfaction with current situation	1.98	2.89
23	Substantial family problems	2.13	3.03
24	Satisfaction with emotional life	2.16	2.97
25	Satisfaction with one's living environment	2.38	2.83
26	Satisfaction with current sex life	0.01	4.62
27	Ability to look after yourself	2.68	0.93
28	Ability to look after family well-being	1.94	0.93
29	Ability to relate and communicate	3.04	0.93
30	Decision-making on daily life activities	2.03	0.93
31	Choice of where and with whom to live	1.73	0.93
32	Goals and objectives in life	1.30	0.92
33	Good personal control	1.82	0.92
34	Life satisfaction	1.97	0.92
35	Satisfaction with family relations	2.23	2.99
36	Satisfaction with family support	2.49	2.55
37	Satisfaction with how you are treated	2.12	3.43
38	Friends	2.49	2.28
39	Satisfaction with friend relationships	2.17	2.98
40	Intimacy for forming relationships	2.02	3.04
41	Social relations with others	2.16	2.58
42	Satisfaction with all relationships	1.90	3.13
43	Satisfaction with current income	1.76	2.78
44	Home ownership	1.75	2.90
45	Adequate living conditions	1.74	3.81
46	Suitable place to live	2.30	2.75
47	Availability of personal technical aids	0.07	4.53

- ✓ If an item saturated significantly in two or more factors with the same sign, it was considered only in that factor in which the saturation was highest.
- ✓ If an item saturated in more than one factor with different signs, the item was conserved in all factors.
- ✓ Each one of the factors must be made up of at least three items.

In line with these criteria we obtained a six-factor solution, whose composition is detailed below.

The **first factor** (Table 6), made up of a total of 10 items, is called *physical well-being*, and samples indicators related to the capacity for doing daily life activities, mobility, health and nutrition. It has high internal consistency, 0.92.

The **second factor** (Table 7), made up of 8 items,

Table 6 Factorial structure of the QLQ with promax rotation (N = 2,292). FACTOR 1	
IP	Factor 1: PW: Physical well-being
1	Level of autonomy in domestic tasks
2	Level of autonomy in basic activities
3	Level of autonomy for getting up and going to bed
4	Level of autonomy for changing body position
5	Level of autonomy for getting about
6	Level of autonomy in use of public transport
7	Sphincter control
8	Physical exercise or sporting activity
9	Quality of eating habits

Table 7 Factorial structure of the QLQ with promax rotation (N = 2,292). FACTOR 2	
IP	Factor 2: SI: Social inclusion
11	Practice of a hobby or leisure activity
12	Formation of aid associations
13	Information on resources
14	Intensity or frequency of support
15	Participation in community activities
16	Architectonic barriers in my environment
17	Limitations on access to community life

Table 8 Factorial structure of the QLQ with promax rotation (N = 2,292). FACTOR 3	
IP	Factor 3: EW: Emotional well-being
19	A person like any other
20	Importance of religion
21	Practising religious person
22	Satisfaction with current situation
23	Substantial family problems
24	Satisfaction with emotional life
25	Satisfaction with one's living environment
26	Satisfaction with current sex life

refers to aspects associated mainly with acceptance by society, participation in community activities, volunteering and social networks, and represents the *social inclusion* dimension. The alpha index of internal consistency is acceptable, 0.69, though lower than in the previous factor. However, this factor also covers fewer items, thus affecting the alpha index, which is a function of the number of items.

The **third factor** (Table 8), also comprising 8 items, has high homogeneity, its alpha index attaining a value of 0.91. Its items refer to indicators of *emotional well-being*, such as personal satisfaction, happiness, spirituality and affect.

The **fourth factor** (Table 9), also comprises 8 items, and is called *personal development and self-determination*. It refers to aspects related to independence, personal control, self-direction and decision-making. It has good internal consistency, alpha 0.85.

The **fifth factor** (Table 10), in which a total of 8 items saturate, groups together indicators related to interaction with the family, friendships, intimacy and support. Thus, it is a factor that samples *interpersonal relations*. Its internal consistency index reflects high homogeneity, alpha 0.88.

The **sixth factor** (Table 11) is that which comprises the smallest number of items, 5 in total; consequently, its internal consistency value is lower, at alpha 0.70, which is moderate but acceptable. The content of the items reflects the *material well-being* dimension, providing information on income, possessions and technical aid.

In sum, the six factors obtained as a result of the exploratory factorial analysis would form the six functional nuclei, referring to basic needs that represent the dimensions of the life of an older person with disability. In line with the QoL model proposed by Schalock, the model that served as a guide to the design and development of the assessment instrument we are validating, the *Quality of Life Questionnaire* which we have factorialized, brings together factors related to physical well-being, social inclusion, emotional well-being, personal development and self-determination, interpersonal relations and material well-being. These indicators, considered as determinant for the adequate assessment of QoL, allow us to make the definition of the construct more operative and its measurement more accurate.

CONCLUSIONS

Quality of Life and perceived needs are concepts that

have taken on considerable importance over recent decades in the field of disability. However, there is still a great deal we do not know in relation to these matters in old age. There is a predominance of theoretical publications, and empirical research is at almost a pre-scientific level. The need for QoL assessment instruments for older persons with disabilities, which would permit us to make reliable and valid measures with which to plan effective intervention strategies and actions, and to supervise social practices and support for improving results, has guided the development and validation of the *Quality of Life Questionnaire* presented here.

The first objective was to check the instrument's reliability. For the reliability analyses we calculated the internal consistency coefficient by means of Cronbach's alpha. The results obtained, both in the case of the corrected homogeneity indices (alpha obtained by eliminating each one of the variables) and in that of the global instrument, reveal high coefficients (alpha values between 0.92 and 0.93), confirming that the instrument fulfils the necessary reliability criteria.

Having confirmed the reliability, we proceeded to the factorial analysis of the instrument. Using the principal components with promax rotation method, we obtained a six-factor solution, which samples six of the principal QoL dimensions proposed by Schalock, namely, physical well-being, social inclusion, emotional well-being, personal development and self-determination, interpersonal relations, and material well-being. These results support the construct validity of the instrument and confirm its suitability for assessing the object of measurement, that is, QoL as perceived by the sample of our study: persons with disability involved in the ageing process.

In future research it will be necessary to carry out studies focusing on the analysis of the QLQ's concurrent validity, as well as differential analyses in relation to predictor variables such as type of disability, degree of disability, age, gender, or residential characteristics, in order to explore whether these clinical and sociodemographic variables that are so relevant in the ageing process of this population are associated with significant differences in the various QoL dimensions sampled by the instrument.

Summing up, the QLQ involves a series of basic principles for the measurement of this aspect which is determinant of a quality life (Verdugo & Schalock, 2006). Thus, its items sample aspects related to the life experience of disabled persons involved in the ageing

process, cover dimensions that take into account the comprehensive nature of an individual's character (be they objective or subjective), rate the degree to which these different dimensions contribute to a full and satisfactory life, and take account of the different contexts in which people go about their daily lives. We can therefore endorse the QLQ as a suitable instrument for the assessment of QoL in older persons with disability from a multidimensional perspective.

REFERENCES

Aguado, A.L., Alcedo, M.A., Fontanil, Y., Arias, B., Verdugo, M.A. & Badia, M. (2006). *Prevención de la dependencia y promoción de la autonomía personal: Estudio sobre el incremento de necesidades y el descenso de calidad de vida en el proceso de envejecimiento prematuro de las personas con discapacidad*. Resarch project report, IMSERSO y

Table 9
Factorial structure of the QLQ with promax rotation (N = 2,292).
FACTOR 4

IP	Factor 4: PD: Personal development
27	Ability to look after yourself
28	Ability to look after family well-being
29	Ability to relate and communicate
30	Decision-making on daily life activities
31	Choice of where and with whom to live
32	Goals and objectives in life
33	Good personal control

Table 10
Factorial structure of the QLQ with promax rotation (N = 2,292).
FACTOR 5

IP	Factor 5: IR: Interpersonal relations
35	Satisfaction with family relations
36	Satisfaction with family support
37	Satisfaction with how you are treated
38	Friends
39	Satisfaction with friend relationships
40	Intimacy for forming relationships
41	Social relations with others

Table 11
Factorial structure of the QLQ with promax rotation (N = 2,292).
FACTOR 6

IP	Factor 6: MW: Material well-being
43	Satisfaction with current income
44	Home ownership
45	Adequate living conditions
46	Suitable place to live
47	Availability of personal technical aids

- Departamento de Psicología, Universidad de Oviedo. (Unpublished).
- Aguado, A.L., González, I., Alcedo, M.A. & Arias, B. (2003). Calidad de vida y lesión medular. In M.A. Verdugo & B. Jordán de Urríes (Coords.): *Investigación, innovación y cambio*, (pp. 623-664). Salamanca: Amarú Ediciones.
- Aguado, A.L., Alcedo, M.A., Rueda, M.B., González, M. & Real, S. (2009). La evaluación e intervención de mayores dependientes. In R. Fernández-Ballesteros (Dir): *Psicología de la vejez. Una psicogerontología aplicada* (pp.215-247). Madrid: Pirámide.
- Crespo, M. (2003). *Validación y aplicación de la Escala de Calidad de Vida de Schalock y Keith (1993) a adultos con discapacidad intelectual en contextos laborales*. Doctoral dissertation. Departamento de Personalidad, Evaluación y Tratamiento Psicológicos. Universidad de Salamanca.
- Cummins, R.A. (2005). Instruments assessing quality of life: characteristics and functions. In J.H. Hogg & A. Langa (Eds): *Approaches to the assessment of adults with intellectual disabilities. Part. I*. London: Blackwell.
- IMSERSO, (2005). *Libro Blanco de la Dependencia, Tomos I y II*. Madrid: Ministerio de Trabajo y Asuntos Sociales.
- INE (2000). *Encuesta sobre discapacidades, deficiencias y estado de salud: Año 1999. Avance de resultados*. Madrid: Instituto Nacional de Estadística.
- Jiménez, A. & Huete, A. (2002). *La discapacidad en cifras*. Madrid: IMSERSO.
- Jiménez, A. & Huete, A. (2003). *Las discapacidades en España. Datos estadísticos. Aproximación desde la Encuesta sobre discapacidades, deficiencias y estado de salud de 1999*. Madrid: Real Patronato sobre Discapacidad.
- Keith, K.D. (2001). International quality of life: Current conceptual, measurement and implementation issues. *International Review of Research in Mental Retardation*, 24, 49-74.
- Schalock, R. L. (1996). *Quality of Life. Vol. 1: Its Conceptualization, Measurement and Use*. Washington, D.C.: American Association on Mental Retardation.
- Schalock, R.L. (2005). Introduction and overview to the special issue. *Journal of Intellectual Disability Research*, 49 (9), 695-698.
- Schalock, R.L. & Keith, K.D. (1993). *Quality of Life Questionnaire Manual*. Worthington, Ohio: IDS Publishing Corporation.
- Schalock, R.L. & Verdugo, M.A. (2003). *Calidad de vida: Manual para profesionales de la educación, salud y servicios sociales*. Madrid: Alianza Editorial. (Spanish version of the *Handbook on Quality of Life for Human Service Practitioners*. Washington, DC: American Association on Mental Retardation, 2002).
- Schalock, R.L. & Verdugo, M.A. (2006). Revisión actualizada del concepto de calidad de vida. In M.A. Verdugo (Dir): *Cómo mejorar la calidad de vida de las personas con discapacidad. Instrumentos y estrategias de evaluación*, (pp. 29-41). Salamanca: Amarú.
- Verdugo, M. A., Arias, B. & Gómez, L. E. (2006). Escala integral de medición subjetiva y objetiva de la calidad de vida en personas con discapacidad intelectual. In M.A. Verdugo (Dir.): *Cómo mejorar la calidad de vida de las personas con discapacidad. Instrumentos y estrategias de evaluación*, (pp. 417-448). Salamanca: Amarú.
- Verdugo, M.A. & Schalock, R.L. (2006). Aspectos clave para medir la calidad de vida. In M.A. Verdugo (Dir): *Cómo mejorar la calidad de vida de las personas con discapacidad. Instrumentos y estrategias de evaluación*, (pp.43-58). Salamanca: Amarú.