



Quality of life, dependency and mental health scales of interest to nutritional studies in the population

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Abstract

Quality of life, dependency and mental health are multidimensional constructs that cannot be observed directly yet can be deduced in an indirect manner through indicators or profiles generated from questionnaires. These questionnaires are based on the validity of information transmitted by the respondents about perceptions, feelings and attitudes. For this reason, the information is difficult to contrast with and translate to a measuring system.

The use of questionnaires or rapid quality of life and mental health evaluation scales involve a process directed towards an early identification of specific problems so as to establish medical treatment.

This work will review the most commonly used scales or questionnaires in determining these variables and their relationship with the nutritional status of the population.

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Key words: *Quality of life. Questionnaires. Personal autonomy. Mental health, nutritional status.*

ESCALAS DE CALIDAD DE VIDA, DEPENDENCIA Y SALUD MENTAL DE INTERÉS EN ESTUDIOS NUTRICIONALES DE CARÁCTER POBLACIONAL

Resumen

Calidad de vida, dependencia y salud mental son constructos multidimensionales no observables directamente pero que pueden ser deducidos de manera indirecta a través de indicadores o perfiles generados a partir de cuestionarios. Estos cuestionarios se basan en la validez de la información de percepciones, sentimientos y actitudes que transmite el encuestado. Por esta razón, esta información es difícil de contrastar y traducir a un sistema de medida.

El empleo de cuestionarios o escalas de valoración rápida de la calidad de vida, dependencia y salud mental, conlleva un proceso dirigido a identificar precozmente a sujetos con problemas específicos para poder instaurar programas de intervención.

Este trabajo revisa las escalas o cuestionarios más empleados en la determinación de estas variables y su relación con el estado nutricional de la población.

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Palabras clave: *Calidad de vida. Cuestionarios. Dependencia. Salud mental. Estado nutricional.*

Abbreviation

HRQOL: Health-Related Quality of Life.

WHO: World Health Organization.

ADL: Activities of Daily Living.

ICF: International Classification of Functioning, Disability, and Health.

Introduction

Technological advances along with an augmentation in longevity have produced a change in health care

in such a way that lethal illnesses have become chronic illnesses. Situations have also increased in which health intervention is directed towards alleviating symptoms and preventing complications in recuperation, and/or maintaining quality of life.

Quality of life, dependency and mental health are multidimensional constructs which are not directly observable, but which can be deduced in an indirect manner through indicators or profiles generated using questionnaires. These questionnaires are based on the validity of information from perceptions, feelings and attitudes that the respondent transmits, however this information is difficult to contrast and translate to a system of measurement.

When speaking of questionnaires we often speak of Evaluation scales which are the tools that permit cumulative scaling of items by giving a global rating at the end of the evaluation. This is what differentiates them from data recollection questionnaires.

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Questionnaires require a series of psychometric properties that guarantee reliability and validity and must allow for an adequate rating of the scaling of the phenomenal object of measurement as well as for the quality of measurement, especially when the purpose is to extrapolate results obtained from the population. Therefore questionnaires must fulfil the following series of characteristics:¹⁻²

1. Validity of content: Both the questionnaire and the items must be adequate for measuring that which is to be measured. For this reason the questionnaire should be submitted to evaluation by investigators and experts.
2. Components and dimensions must be clearly defined so that each one contributes to the scale total in an independent way.
3. Reliability and precision: questionnaires must be capable of providing true and constant results when used under similar conditions in repeated situations.
4. Sensibility to change: They must be capable of detecting differences in the magnitude of construct, which are the changes in different individuals, and the answers given by the same individual over time.
5. They must be accepted by the agents involved: interviewer, respondent, investigator, etc. in those aspects such as the time needed to conduct the questionnaire and the level of reading and understanding necessary to answer the questions.

Health-Related Quality of Life (HRQOL)

The definitions found in the bibliography related to the HRQOL derive from the definitions for health and quality of life given by the World Health Organization (WHO), which in 1948 defined health as “a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity³.” Subsequently, in 1994 it described quality of life as “an individual’s perception of their position in life in the context of the culture and value systems in which they live and in relation to their goals, expectations, standards and concerns⁴”. Therefore, the evaluation of Health-Related Quality of Life concerns the way in which illness, as a producer of pain, physical dysfunctions and discomfort, causes limitations or alterations in the everyday conduct, social activities, psychological well-being and other aspects of daily life in individuals. (Fig. 1)⁵⁻⁶

Quality of Life evaluation is of great interest. However it is a difficult concept to quantify objectively. It concerns the measurement of results centred on the patient and the impact that illness and subsequent treatment have on the patient’s perception of their own satisfaction and physical, psychological, social and spiritual well-being⁷. The importance of the HRQOL has continued to grow in recent years, becoming a

central objective in health care and a measurement of results in patient-centered health care.

To evaluate the HRQOL, instruments must be used which assess the effects of health status on the normal life of an individual. Difficulty exists in trying to evaluate the effects on the quality of life of a defined population group with specific pathologies.

The instruments that measure the HRQOL are utilized more and more to evaluate clinical procedures and the quality of the care given. There are different criteria for classifying HRQOL measuring instruments, although the most accepted is that proposed by Guyatt et al⁸ which distinguishes between generic tools and specific tools for an illness.

Generic tools can be used on different types of patients or populations with the advantage that they allow us to compare the impact of different illnesses on the HRQOL and determine the effects of treatment on different aspects of the HRQOL. They are applicable to a great variety of conditions being that they cover a wide spectrum of dimensions of the HRQOL. Generic dimensions such as physical, mental, and social status are included in these health profiles.

However one disadvantage is that by not including specific aspects for the evaluation of a particular condition, they can be less sensitive to change. The most utilised are the SF-36 and the EuroQol-5D.

Specific instruments focus on particular aspects of an illness or concrete syndromes and have the advantage of being more sensitive to quality of life aspects determined by the effects of a specific illness.

In general terms, specific questionnaires for measuring HRQOL are more adequate than generic ones for measuring changes in the evolution of a patient, especially those changes caused by treatments, given that generally specific tools include questions about signs and symptoms that a patient with a particular

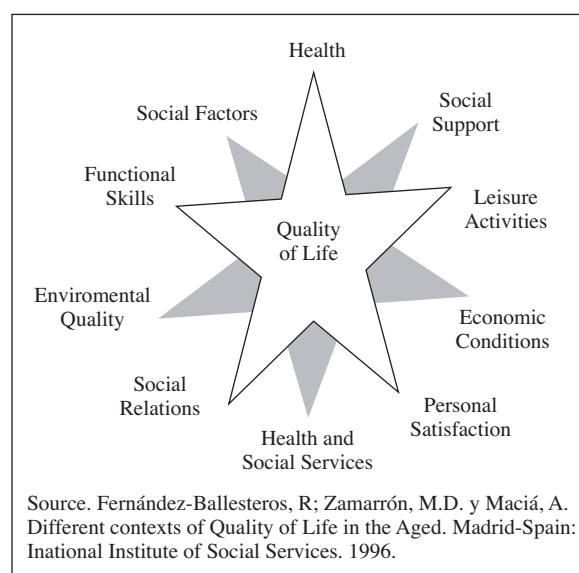


Fig. 1.—Factors which make up quality of life.

illness suffers from in different degrees. The majority of experts in HRQOL evaluation recommend the use of specific instruments for each illness, together with the administration of some generic tool. The main disadvantage is that this does not allow for comparisons between different conditions⁹.

Alterations in nutritional status have effects which condition an individual's quality of life in an important way, impeding, or at the very least complicating physical, psychological and social development. Nonetheless, it is not easy to find any approximations to measure the impact that these nutritional alterations can have on quality of life, unless it be those made from generic questionnaires.

The revision of tools utilized with the objective of measuring the impact of nutritional status on quality of life makes clear the difficulty involved in developing a tool which can measure the quality of life of malnourished patients as well as provide information about how said quality of life is affected by malnutrition status. There exists the need to have a tool available, which together with other classic parameters, signals the proper moment to initiate or terminate a nutritional intervention, as well as giving information as to whether said intervention is positive.

In scientific bibliographies we find how a specific medical intervention increases the patient's quality of life. However in few cases do we find that this is authenticated by a measurement of this quality of life¹⁰.

The absence of specific tools to register effects on the HRQOL, together with the necessity of knowing the impact of concrete problems such as nutritional status, forces the use of various instruments concomitantly which in turn leads to a lack of operational ability and a vision most likely contaminated by other modifying variables of effects present in the patient's pathological context which the generic questionnaires collect in a prevalent way¹¹.

The ideal would be to have an instrument available that together with other classic parameters would indicate the most adequate moment to incite and terminate nutritional intervention as well as giving information on whether said intervention has been valid. In a revision performed on Quality of life related to nutritional status¹², all of the studies included in the revision and other publications, demonstrated the need to study this relationship in greater detail.

For this reason *CaVEN* (Quality of life questionnaire related to nutritional status) was created. This is a constructed and validated questionnaire which measures quality of life in relation to nutritional status¹³.

In the elaboration of this specific tool to measure quality of life in relation to nutritional status, 14 experts on nutrition were interviewed and 6 focal groups were formed 17 judges, experts in clinical nutrition, questionnaire validation and other areas of knowledge, participated in the evaluation of the different versions of the questionnaire. After eliminating or restating the items which were ambiguous, incomprehensible,

redundant or inconsistent from a theoretical point of view, there remained a questionnaire made up of 26 items referring to 6 dimensions of health: Perception of General Health (8 items), Physical Activity (4 items), Work Activity (2 items), Mood (6 items), Family and Social Relationships (3 items), Pain and Physical Discomfort (3 items).

CaVEN was designed to be a self-administered questionnaire and was edited so that subjects could directly express their sensations and perceptions about their quality of life during the previous month in accordance with a 1-6 Likert type scale.

CaVEN showed how it was possible to put together the adequate psychometric characteristics so as to fulfil the proposed task as well as measure the perceived quality of life of patients with different nutritional status. It can be used not only to identify the level of affection that provokes the different degrees of malnutrition on quality of life, but also to evaluate the impact of the different interventions directed to modify the nutritional status on quality of life¹⁴.

The *CaVEN* questionnaire expounds its capacity to measure the affection of the quality of life of the subjects. Compared with other questionnaires utilized as references or *Gold Standard*, the *CaVEN* has been shown to perform as a valid and trustworthy tool for measuring the Quality of life related to nutritional status questionnaire.

Dependency

To establish what dependency is and how it deals with a concept that is closely related to that of personal autonomy it is necessary that both concepts be previously defined according to the definitions as established in the Act on the Promotion of Personal Autonomy and Care for Dependent Persons¹⁵ (39/2006) in which it is indicated that:

- 1. Dependency:** *the permanent state in which persons that for reasons derived from age, illness or disability and linked to the lack or loss of physical, mental, intellectual or sensorial autonomy require the care of another person/other people or significant help in order to perform basic activities of daily living.*
- 2. Personal Autonomy:** *ability of one's own initiative to control, deal with and make personal decisions about how to live in keeping with the regulations and personal preferences as well as carrying out the basic activities in their daily life.*
- 3. Activities of Daily Living (ADL):** *those that allow a person to cope with a minimum level of autonomy and independence, such as: taking care of themselves, basic domestic chores, essential getting about, recognising people and objects, knowing where they are, understanding and carrying out orders or simple tasks.*

On the basis of these definitions we can deduce two clear phenomenon. On the one hand autonomy and dependency are two concepts that are closely related; the loss of personal autonomy implies dependency being that as a consequence of limitations in the development of personal autonomous and social skills, a person has greater difficulty adapting to their environment and, as a result, need support to compensate for these limitations (Fig. 2). On the other hand, being that age is a key variable, there exists an indubitable relationship between old age and dependency. Disabilities during old age result in a loss of personal autonomy in performing daily activities such as shopping, food preparation and feeding oneself with the resulting lack of daily nutritional needs and state of malnutrition¹⁶. It is beyond doubt that there exists an important relationship between the conservation of these skills, the degree of dependency and nutrition. The lack of personal autonomy in the development of the ADL can significantly affect the patient's nutritional status.

The phenomenon of dependency, which at the same time linked to another concept which is that of disability, is a subject of worldwide importance, being especially relevant to developed countries as they are also the highest in ageing populations¹⁷.

Based on the Disabilities, Independence and Dependency Situations Survey of 2008¹⁸, the disability rate in Spain was 89.7 disabled for every 1000 inhabitants. This data gives us an idea of the enormous economic impact of dependency which supposes an important problem for the Public Health System which must rate itself from two points of view: Health, given that disability is the consequence of an illness or alteration in health, and require medical assistance; and Rehabilita-

tion, with a focus centred on social integration of these persons provided by health care professionals¹⁹.

Disability or dependency assessment needs to be centred on the studies of those activities in which one person needs the assistance of another for their realisation, without losing sight of corporal deficiencies or context²⁰. Therefore, to the extent to which we want to obtain greater sensitivity and/or specificity in rating dependency, we shall have to differentiate and measuring the three components: deficiency, activities and assistance, without sacrificing any of them.

Measurement of dependency is measured through the use of Scales of Dependency. There exist a multitude of scales which allow adjustment of the degrees of dependency and for this the WHO, conscience of the difficulties of Dependency evaluation and scaling, have spent many years developing a valid, reliable and international instrument which will facilitate assessment. Thus, the World Health Assembly of May 22, 2001 approved the International Classification of Functioning, Disability, and Health (ICF)²¹ presenting a generic scale for adjusting dependency in 5 iso groups based on severity.

Table I shows the scales of greatest interest for adjusting dependency in the performance of daily activities just as other scales allow us to obtain detailed information about diverse aspects intimately related to dependency. The use of these scales could be useful for exploring other components of dependency such as the "Interacting context".

No scale specifically relating dependency with a person's nutritional status has been found and for this reason it is necessary to design and validate an instrument that evaluates nutritional status in relation to dependency.

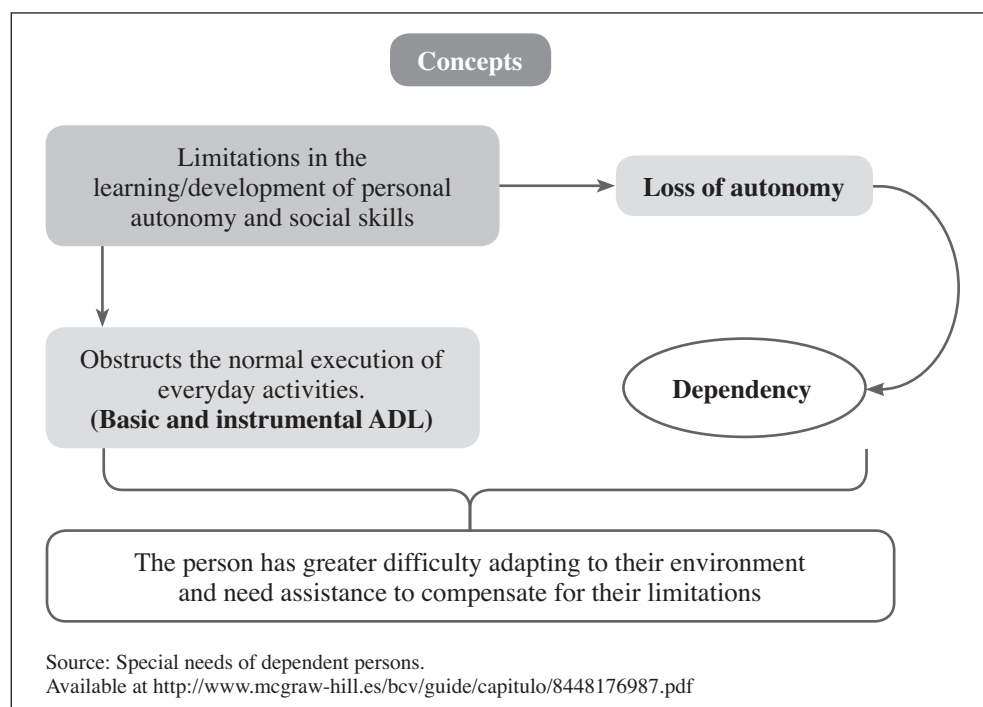


Fig. 2.—Diagram showing the relationship between the concepts of personal autonomy and dependency.

Table I
Dependency rating scales

<i>Dependency Scales</i>	<i>Objective</i>	<i>Use</i>	<i>Nutritional Ranking</i>
Barthel Index ^a	Evaluates the capacity to carry out basic daily activities	Rehabilitation, geriatric and patients in resident homes	No
Katz Index ^b	Evaluates the capacity to carry out basic daily activities	Rehabilitation, geriatric	No
Lawton Index ^c	Evaluates the capacity to carry out basic daily activities	Rehabilitation, geriatric and patients in resident homes	No
Mini Nutritional Assessment MNA ^d	Evaluation of nutritional status	Geriatric	Yes
Norton Scale ^e	Evaluates the risk of bedsores	General hospitalised patients	No

^aMahoney FI, Barthel D. Functional evaluation: The Barthel Index. Maryland State Medical Journal 1965; 14: 56-61.

^bKatz S, Ford AB, Moskowitz RW, Jackson BA, Jaffe MW. Studies of illness in the aged. The index of ADL: a standardized measure of biological and psychosocial function JAMA. 1963; 185: 914-9.

^cLawton MP, Brody EM. Assessment of older people: self-maintaining and instrumental activities of daily living. Gerontologist. 1969; 9: 179-186.

^dGuigoz Y. The Mini Nutritional Assessment (MNA(R)) Review of the Literature - What Does It Tell Us? J Nutr Health Aging. 2006; 10: 466-87.

^eNorton D, McLaren R, Exton-Smith AN. An Investigation of Geriatric Nursing Problems in Hospital. London: Churchill Livingstone; 1962:193-224. Norton D. Calculating the risk: reflections on the Norton Scale. Decubitus 1989; 2:24-31 (erratum 1989;2:10).

Mental Health

The positive dimension of mental health makes reference to the concept of welfare and the skills for adapting to adversity. It includes self-esteem, self-control, optimism and a sense of coherence. Mental health is the basis of welfare and the proper functioning of an individual and community is much more than the absence of pain, being that it has value in itself²². The degree of mental health is related with the capacity to confront and overcome life's adversities with losing emotional balance.

In Spain, according to the Disabilities, Independence and Dependency Situations Survey (DIDSS 2008) 18, disabilities attributed to dementia, mental disorders and reduced intellectual capacity affects 719,000 people over the age of 6; 19% of all people with disabilities.

During the aging process deterioration of cognitive functions is observed. This can emerge from its lightest form (as a simple non progressive memory deficiency) to the severest form of dementia with irreversible and progressive effects on occupational and social activities which can affect the individual's feeding capacity. Therefore, cognitive deterioration has a direct relationship with diet and can result in a state of malnutrition, a fact which especially aggravates the ageing process²³.

The noted increase in the prevalence of cognitive deterioration in the elderly population and its impact on the level of independence and quality of life of the institutionalised elderly justifies the need for early detection of such alterations so as to initiate, as soon as possible, intervention programs directed at delaying dependency, maximizing capabilities and improving quality of life.

During clinical evaluation of cognitive degeneration, the use of neuropsychological tests and screening instruments is recommended. Currently, is assumed that at least a part of those persons that will suffer dementia in

the future can be detected by means of neuropsychological testing.

There exist different test forms for evaluating the cognitive function²⁴ (Table II). None of them alone are capable of diagnosing dementia and cannot be considered independently apart from clinical evaluation.

It would be desirable to have an instrument available for the evaluation of the nutritional status of mental health patients with the objective of knowing how the nutritional status is modified on the basis of their cognitive status.

Conclusions

In issues related to nourishment it is necessary to distinguish between two different facets: nutrition, directly related to the necessary contributions for maintaining or improving health status, and food, as a cultural and socialising element respectful towards traditions and cultures, generator of welfare. Both aspects merge with and influence people's quality of life in a direct manner, especially when they are older.

Quality of life depends as much on physical well-being as on psychological, and both factors can be influenced by nutritional status. A growing knowledge that poor nutritional status has a negative impact on quality of life exists. It must not be forgotten that nutritional status is one of the most important and potentially modifiable disability risk factors.

In spite of the fact that, on the one hand, difficulties exist at the moment of being able to measure quality of life and, on the other, a variety of methods are employed to evaluate nutritional status, a close association between malnutrition and worsening in the quality of life has been observed, and as such, both the functional status as well as the cognitive state are intimately

Table II
Mental Evaluation Scales

<i>Evaluation Scales of cognitive function</i>	<i>Objective</i>	<i>Use</i>	<i>Items explored</i>
Mini Mental State(MEC) ^a	Screened for neurodegenerative illnesses that show cognitive degeneration	Adults and Elderly	Orientation, focusing, concentration, calculating, memory, language and construction
Pfeiffer Questionnaire (SPMSQ) ^b	Evaluate degree of cognitive degeneration	Institutionalized or not patients. Very useful in populations with high prevalence of illiteracy.	Short and long term memory, orientation, information about everyday facts and calculating capacity
Yesavage Geriatric Depression Scale (GDS) ^c	Evaluates depression in the Elderly	Elderly	15 items provide information regarding affective state

^aFolstein MF, Folstein SE, McHugh PR. Mini Mental State. A practical method for grading the cognitive state of patients for the clinical. *J Psychiatr Res* 1975;12:189-198. Lobo A, Ezquerro J. El Mini-Mental cognoscitivo: un test sencillo y práctico para detectar alteraciones intelectivas en pacientes médicos. *Actas Luso-Esp. Neurol Psychiatr* 1979; 3:149-153.

^bPfeiffer E. A short portable mental status questionnaire for the assessment of organic brain deficit in elderly patients. *J Am Geriatr Soc* 1975;23:433-441. García-Montalvo JL, Rodríguez L, Ruipérez I. Valoración del cuestionario de Pfeiffer y la escala de incapacidad mental de la Cruz Roja en la detección del deterioro mental en los pacientes externos de un servicio de geriatría. *Rev Esp Geriatr Gerontol* 1992;27: 129-133.

^cPérez E, González MA, Moraleda P, Szuker S, González JA. La escala de depresión geriátrica (GDS) como instrumento para la evaluación de la depresión: bases de la misma. Modificaciones introducidas y adaptación a la realidad psicogeriatrica española. *Rev Esp Geriatr Gerontol* 1990;25(3):173-180. Yesavage JA, Brink TL, Rose TL, Lum O, Huang V, Aday M, et al. Development and validation of a geriatric depression screening scale: a preliminary report. *J Psychiatr Res* 1982;17:37-49.

related to said quality of live. To sum up, it can be concluded that:

Mental health, quality of life and dependency are increasingly important elements in rating health status.

Without any doubt, healthy nutritional status contributes to improving the functional and mental status of the individual and thus contributes to an improvement in the quality of life itself, something extremely important at the present time being that life-spans have clearly increased.

Public Health works to find a compound measurement which encompasses different objective and subjective dimensions.

General Health Surveys are trying to collect this information in a comprehensive manner.

The specific measurement instruments utilised are disparate and a lack of specific instruments exists which forces the use of different concomitant instruments.

It is necessary to continue working on the development of specific questionnaires for evaluating quality

of life, dependency and mental health in relation to the nutritional status of the individual.

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<i>Generic scale of dependency severity</i>	
Group 1	No dependency
Group 2	Light dependency
Group 3	Moderate dependency
Group 4	Severe dependency
Group 5	Total dependency
Source: WHO, 2001	

Fig. 3.—Generic scale of severity of dependency.

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