

## ASSESSMENT OF QUALITY OF LIFE: PRESENT AND FUTURE METHODOLOGICAL CHALLENGES

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*El impacto de la Calidad de Vida en áreas como la salud, el rendimiento escolar o la participación social ha estimulado el desarrollo de distintas aproximaciones que han tratado de abordar tanto la definición como la evaluación de este constructo. Sin embargo, a pesar de los beneficios que supone el enfoque multidisciplinar, esta diversificación ha impedido alcanzar una definición única del constructo y, por tanto, un instrumento o procedimiento de evaluación consensuado. El objetivo de este estudio es plantear los retos metodológicos que afectan al estudio de la Calidad de Vida en la actualidad. Se presenta una breve descripción de la evolución del constructo en los distintos ámbitos, los avances más novedosos y los planteamientos que guiarán la investigación futura en marco nacional e internacional.*

**Palabras clave:** Calidad de vida, Evaluación, Avances metodológicos,, Psicología transcultural.

*The growing importance of quality of life in diverse domains, such as health, school performance and social participation, has led to the development of new conceptualisations and assessments of the construct. This diversity of perspectives brings about many benefits, but it also creates an obstacle for the formulation of a single unifying definition of the construct and, therefore, an agreed instrument or assessment framework. The aim of this study is to discuss the current methodological challenges in the measurement of quality of life. Firstly, we provide a brief description of the construct as defined in various areas, then we examine the new methodological developments and different applications. We also present an overview of the different possibilities for future developments in defining and measuring quality of life in national and international studies.*

**Key words:** Quality of Life, Assessment, Methodological challenges, Cross-cultural Psychology.

### A OVERVIEW OF THE CONCEPT OF QUALITY OF LIFE

According to the *Diccionario de la Real Academia Española* [Dictionary of the Royal Spanish Academy] (DRAE), quality of life refers to "the set of conditions that help to make life enjoyable and valuable." This simple definition that would fit the popular idea of quality of life, begins to raise difficulties when we wish to specify what "to make life enjoyable and valuable" means or when we wish to determine the "set of conditions" that favours this state. On both counts, personal experiences, ambitions or expectations (among other things) introduce a subjective factor that makes the concept difficult to extend to multiple people, especially if these people come from different socio-demographic or cultural groups. This situation becomes clear if we think of our inner circle, where we can easily identify people we know whose priorities are far from our own, which clearly leads to a different assessment of what gives us quality of life. The same problem occurs on a large scale, when studies aim to assess quality of life on a national level, and of course in international studies aimed at comparing participants from different countries.

In common parlance, the term quality of life is used to refer to different aspects such as satisfaction with specific conditions, commodities at a socio-economic level, facilities for meeting the needs of daily life, or even happiness. How often we have heard someone say "This is quality of life", and more importantly, in how many different contexts and with how many different nuances? Precisely this familiarity with the concept is one of the reasons why quality of life is, as Campbell, Converse, and Rodgers (1916) noted, something that many people talk about but nobody knows how to define clearly. Many years later, Barofsky (2012) also indicated that the "everydayness" of the term is a constraint to both the definition and the measurement of this construct.

This situation poses a challenge in science where, ideally, "personalised" definitions should be left behind in order to establish common definitions and agreed criteria to guide the activity of the research community. Therefore, it is in this context where concern for the systematic study of the concept of quality of life as well as its assessment emerged in the 60s (Gómez & Sabeh, 2001). Although there has always been interest in the construct, in this period a change of perspective occurred in which the idea of proposing solutions subsequent to the emergence of the problem was replaced by a concept of social change that seeks to promote an improvement in society (Casas, 2004). In other words, the idea of quality of life became an activity aimed at promoting positive behaviours that improve people's situations.

From then until now, the concept of quality of life has been used in various fields such as psychology, health, education, economics or politics, which has led to the study of the construct at different levels of generalisation. While psychology has focused on the individual aspects of people (Aroila, 2003), economics and politics have addressed issues concerning society or the community, considering quality of life as the indispensable motor of innovation for social evolution (Yúdice, 2002). On the other hand, in healthcare and education both fronts have been covered, focusing on groups of people with specific circumstances, such as a specific pathology (e.g., Lara, Ponce, & de la Fuente, 1995), or special educational needs (e.g., Gómez-Vela, Verdugo, & González-Gil, 2007). This diversity of approaches has meant that the meaning of quality of life is complex and has definitions that adjust to the focus of interest in each case. However, in an attempt to reduce this diversity, two main branches emerged that divide the research on quality of life in health sciences and social sciences. From the common objective of knowing the most important aspects for peoples' lives and their influence on the different life areas of human beings, the two perspectives present an approach to the concept that incorporates different nuances.

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On the one hand, in the healthcare field, the concept emerges of quality of life related to health (HRQOL, or Health-Related Quality of Life) which was initially defined in 1948 by the World Health Organization (World Health Organization, WHO) as a state of complete physical, mental and social well-being that goes beyond the mere absence of disease (WHO, 1998). Some of the most relevant studies in this approach have shown the powerful influence of quality of life in such significant aspects as patient adherence to prescribed treatments (Carballo et al., 2004) or the evolution of disease (Jones et al, 2006; Lemonnier et al, 2014)..

On the other hand, in the field of social science, efforts have been focused on trying to unify the concept of quality of life which, as Veenhoven (2000) indicates, has been used interchangeably with other constructs such as well-being or happiness. In this context, two of the basic traditions described by Schwartzmann (2003) are included: research into the concept of happiness in psychology and the study of social indicators in sociology. The main concern in the social sciences is people's environment, highlighting the more private component of quality of life; and therefore the studies address aspects such as its influence on social participation (Nakamura et al, 2014; Wendel-Vos, Schuit, Tjihuis, & Kromhout, 2004) or the development of personal and professional relationships (Pinquart & Sorensen, 2000). Quality of life is then defined as the "experience that people have of their own ways and conditions of life" (Casas, 2004, p. 309); referring to objective factors, such as living conditions in themselves, and subjective elements that reflect people's own perception that they have of the situation. In line with the controversial role of subjectivity mentioned above, the research is characterised by proposing assessment focused on obtaining indicators of the presence or absence of subjective well-being in people. In other words, the elements considered in the traditional assessment focused on objective conditions are maintained but interest is moved to the discovery of the private and subjective aspects. In this line, Schalock and Verdugo (2002) describe the indicators of quality of life based on three personal dimensions that reflect the well-being of the person: specific perceptions, behaviours and conditions. Meanwhile Casas (2011) distinguishes two social indicators of subjective well-being: overall life satisfaction and satisfaction with specific or peripheral aspects.

These definitions reflect the efforts made to clarify the concept of quality of life and make it easier for researchers to outline new studies by differentiating and limiting the aspects of interest in each area of study. However, at the same time they present other difficulties such as the measurement of the construct. The same diversity described above is evident in the tools available for evaluating quality of life, as shown by previous reviews of the existing instruments for the evaluation of quality of life (Blanco & Chacón, 1985, Bowling, 1991).

Following the approach of social sciences, possibly the closest to the readers, we find instruments that refer to the division of quality of life into general and specific aspects. Among the general aspects, the main focuses of attention have been subjective well-being (*The Satisfaction with Life Scale*; Diener, Emmons, Larsen, & Griffin, 1985), happiness (*Happiness Measures*; Fordyce, 1988) and overall satisfaction (*Life Satisfaction Scale*; Huebner, 1994). The assessment of specific aspects has focused on the investigation of the main life areas of individuals (Cummins, 2003; Cummins, Eckersley, Van Pallant, Vugt & Misajon, 2003). For example, Zabriskie and McCormick (2003) used an adapted version of the *Satisfaction With Life Scale* to assess satisfaction with

family life (*Satisfaction with Family Life Scale*); Bowling and Hammond (2008) review the properties of the *Michigan Organizational Assessment Questionnaire* designed to measure job satisfaction (*Michigan Organizational Assessment Questionnaire Job Satisfaction Subscale*); and Heyland et al. (2002) investigated satisfaction with the services received in healthcare settings.

This situation reflects the current reality in the research on quality of life, which has led to decisions being made to approach the study of this construct, from different fronts both nationally and internationally, as described in the next section.

## THE STUDY OF QUALITY OF LIFE

Despite the clear influence of the methodological issues in the research on quality of life, the ultimate goal of the assessment is to draw conclusions regarding this variable, and it is on this point that the national and international studies focus. In Spain (as in other countries), much of the research focuses on the assessment of specific groups or content-specific assessment, while at the international level the aim is to establish "universal" indicators of quality of life for comparative purposes. Described below are some of the current lines of work in the two contexts.

### *Quality of life in international and transcultural studies*

On the international scene, various organisations have proposed approaches intended to assess different countries or groups in a standardised way. The healthcare aspect is represented by the WHO, which in recent years has tried to introduce the individual perception of patients in relation to their quality of life, as part of the assessment of their functionality (WHO, 1994). In its classification models, the WHO proposes indicators that describe health conditions globally, such as the International Classification of Functioning, Disability and Health. This model includes the concept of functionality, which incorporates personal and environmental factors and their interaction with the disease suffered by the individual.

Studies of the social aspect are associated with survey research whereby items are administered to different groups which are subsequently compared in relation to the amount of the variable. In this context, the main limitation comes from the difficulty of establishing common indicators to the different groups evaluated and ensuring equivalence in the definition of these indicators. The European Statistical System Committee (ESSC) attempted to address this difficulty by developing, in November 2011, a list of dimensions to measure the quality of life in the European Union. These dimensions are divided into specific indicators so that the assessment of these indicators provides, according to this approach, information on people's quality of life. For example, the dimension "overall experience with life" covers three themes: satisfaction with life, emotions and goals. These themes are subdivided into indicators that are formulated in terms of items, such that the application of those items would measure the construct quality of life. Other dimensions are "leisure and social interactions", "environment" and "physical and financial security," which are defined the same way in terms of themes and indicators as described above.

This perspective has been accepted by many researchers since it offers a broad framework in which studies of various types have a place. In fact, numerous international studies with comparative objectives have followed the guidelines proposed by the ESSC. Some examples are the *European Values Study (EVS)*, the *European Social Survey (ESS)*, the



*European Quality of Life Survey (EQLS)*, and the *World Values Survey (WVS)*. In all of these studies, the dimensions and indicators proposed for generating quality of life items are used. However, this scheme does not meet the needs of researchers concerned with the subjective sphere.

Another approach to quality of life from the social perspective is that proposed by the Organisation for Economic Co-operation and Development (OECD), which has presented one of the most universal panoramas to date by creating the *Better Life Index*. Based on the responses of participants from different countries on five continents, this index assesses the most relevant aspects for the citizens, but this also leaves out the more private aspects of the assessment. Therefore, despite international efforts to reach a satisfactory definition for the different areas of study, the inclusion of the subjective aspects that capture personal perceptions of quality of life has not yet been achieved.

Beyond the definition of the construct, in the international framework another of the most important challenges relates to achieving equivalence in measurement. Ensuring the equivalence of the responses provided by different groups is, as indicated by Van de Vijver and Matsumoto (2011), the only way to make valid comparisons between the groups assessed. Both the level of equivalence and the presence of bias have been analysed previously in the context of quality of life (Meng, King-Kallimanis, Gum & Wamsley, 2013; Scott et al., 2009a.) The construct equivalence is particularly important in this area, as although subjective well-being can be conditioned by objective conditions, an individual assessment is likely to be more determined by the specific circumstances of each person. That is, two people in the same circumstances in two different countries could assess their quality of life differently in relation to continua such as wealth-poverty or health-disease. This fact is the main challenge in the international arena: ensuring that the quality of life indicators that are established are independent of the context and/or focus attention on subjective aspects that must also be interpreted through the groups. In other words, the assessment of subjective elements, both in themselves and in a comparative scenario, currently constitute the biggest challenge on an international level.

#### **Quality of life in specific contexts**

In Spain, several research teams are working directly or indirectly in the study of quality of life. Two main objectives can be identified: the study of the quality of life construct itself, which is approached from the assessment of groups selected based on demographics (sex or age) or groups of people with specific circumstances (patients, caregivers, etc.); and the creating of instruments that capture the aspects of interest.

Studies unifying both concerns currently represent the most complex and challenging option. For example, one of the most important lines in the study of quality of life is currently focused on the evaluation of subjective well-being in children and adolescents. The main objective is to understand the determinants of subjective well-being in this group. However, the study of the concept involves complex methodological challenges. For example, the assessment of children and adolescents involves conducting longitudinal studies or having instruments adapted to the characteristics of the participants in different age groups. In both cases we are faced with situations in which participants experience a developmental change in the course of the study, and therefore, it is necessary that the instruments used capture the same content in all administrations, so that it is possible to draw conclusions about the changes associated with subjective well-being beyond the changes

resulting from growth. This means that researchers must generate tools that capture equivalent indicators in groups that differ in their demographics and, in all likelihood, in their cognitive abilities to cope with the task set. Recent research seeks to respond to this situation by including graphic materials that have proved their usefulness in obtaining information from younger participants (Nic Gabhainn & Sixsmith, 2006).

#### **CHALLENGES IN THE STUDY OF QUALITY OF LIFE**

In view of the above, one might ask what the most important challenges are in the study of quality of life. This approach requires us to return to the most recent studies, extract their limitations and propose innovative approaches in relation to the critical points described above.

First, both the definition and assessment of quality of life have been widely addressed in studies that have attempted to gather different formulations and propose comprehensive definitions (Blanco & Chacón, 1985; Bowling, 1991; Casas, 2004; Gómez & Sabeh, 2001). However, the need to respond to concerns from different fields of study has hindered the achievement of proposals accepted by the scientific community as a whole. To overcome this limitation involves possibly returning to the beginning with the conceptualisation and extracting the common concerns of psychologists, sociologists, health workers, educators and other professionals interested in the study of quality of life. Despite the ambitious project, psychometrics can provide a theoretical and methodological framework to guide the process of defining the construct (Crocker & Algina, 1986), establishing the necessary steps to collect and integrate the different perspectives in a detailed definition of the dimensions and indicators that enables the generation of items that measure people's quality of life.

Another challenge for research in this field is to create versions that permit the assessment of groups that speak different languages, and to establish equivalence in the measurements made using these instruments. As mentioned in previous sections, this task has mainly been approached by organisations interested in international comparison. However, ensuring equivalence, or in other words the absence of bias between groups, is still a challenge. Bias refers to the presence of elements in the measuring instruments that do not have the same meaning across groups (Poortinga, 1989). The studies of bias in the context of quality of life have so far pursued different objectives, such as, for example, examining the adequacy of the translated versions of assessment instruments (Scott et al., 2009a), or obtaining validity evidence of the usefulness of a tool to assess different groups (Rendas-Baum, Yang, Varon, Bloudek, DeGryse & Kosinski, 2014). However, as Scott et al. (2009b) suggest, there is still no agreement on the nature and impact of bias in assessments of the quality of life.

In this regard, recent studies have tried to determine both the impact of and the elements generating bias in assessments of quality of life. To do this, mixed designs that combine quantitative and qualitative methodologies represent the most promising option in recent years, as they integrate findings of a different nature with the aim of achieving a more global and sophisticated view of the phenomenon studied (Tashakkori & Teddlie, 1998). Benítez, Van de Vijver and Padilla (in press) used statistical techniques to detect bias at item level and cognitive interviews in order to explain its causes. These authors describe three main sources of bias: linguistic (words and expressions that do not have the same meaning in the different versions), contextual (differences in interpreting the nuances connected with the agreements established in



each country or culture) and substantive (differential interpretations due to the specific circumstances of the groups or countries evaluated). Also Benítez, He, Van de Vijver, and Padilla (under review) used a mixed design to interpret the presence of bias related to cultural trends expressed during the process of responding to the items. Specifically, this study describes the causes of differences in the frequencies of choice of specific alternatives between the groups.

In addition to the mixed research, the use of qualitative procedures in itself represents an important contribution to the study of bias in evaluating the quality of life. To date, its implementation has pursued two fundamental objectives: to identify and understand the origin of the differences between the groups and to provide a comprehensive view of the bias integrating the various levels (item, method and construct). Among the studies of the first group is the work by Smits et al. (2005) in which differential interpretations of the symptoms related to mental health (considered negative indicators of quality of life) among participants from Turkey and Morocco are described. In the second group, Benítez, Padilla and Van de Vijver (2015) illustrate a comprehensive evaluation of bias using cognitive interviews. The authors provide qualitative evidence of the presence of differences between groups unrelated to the construct as well as specific elements of the groups demonstrating the non-equivalent composition of quality of life construct through the groups evaluated.

## CONCLUSIONS AND DISCUSSION

The aim of this study was to present an overview of the research into quality of life as well as the past, present and future challenges in this field. Both the theoretical aspects and the revised empirical studies have demonstrated the importance that quality of life has in society today, and how interest in the impact of quality of life has spurred the development of rigorous scientific studies that have contributed to significant progress in recent years.

Following the review and reflection made in this paper, several conclusions can be drawn. The first clear result, derived from the contents described, is the need to continue research into quality of life leveraging the efforts made so far. That is, despite the diversification and the multidisciplinary nature surrounding the construct, there are important points of departure that must be a reference for future research. For example, the consensus definitions in the different areas represent the most advanced theoretical bases to date, and as such, should be considered in future studies pending further investigations that incorporate the aspects that have been most critical, such as those related to the more subjective aspects.

Likewise, the assessment tools available gather and capture the most current theoretical approaches, so their application may be relevant in studies that replicate the conditions for which the instrument was originally created. However, in the case of comparative studies it is necessary to ensure equivalence in the construct measured in the different groups involved, as well as the lack of bias at different levels (Van de Vijver & Matsumoto, 2011). To do this, it is proposed to implement mixed designs that include a statistical assessment of the bias and a qualitative review of the interpretations made by the participants, so we have information on the aspects being captured differentially through the groups.

Currently, the literature on quality of life is extensive, although it is essential to promote new studies that advocate a "universal" definition of the construct. According to the limitations observed in the previous

research, this definition would consist of a model of dimensions, indicators and relationships that would enable the generation of a set of items that capture the quality of life construct in a standardised and non-biased way. Apart from these purely methodological challenges, future research should also address the substantive requirements. This would include studies aimed at promoting quality of life in patients with specific health conditions, subjective well-being in children and adolescents, or other investigations not mentioned above focused on quality of life related to ecological behaviours, or with personal characteristics such as attachment to the place of residence or belonging to majority or minority groups (Benítez, He & Adams, 2015).

Despite the idealism of the reflections raised, the progress observed in recent years shows the interest and dedication of the various professionals making headway in the research into quality of life. Therefore, this paper aims to be a starting point to guide and lead the steps planned from the various fronts toward a common goal.

## REFERENCES

- Aroila, R. (2003). Calidad de vida: Una definición integradora [Quality of life: An inclusive definition]. *Revista Latinoamericana de Psicología*, 35(2), 161-164.
- Barofsky, I. (2012). Can quality or quality-of-life be defined? *Quality of Life Research*, 21(4), 625-631.
- Benítez, I., He, J., & Adams, B. (2015). *The role of environmental satisfaction in wellbeing: A comparison between mainstreamers and minority groups*. XII Congreso de Psicología Ambiental [Congress of Environmental Psychology] (pp. 288). Granada: University of Granada.
- Benítez, I., He, J., Van de Vijver, A.J.R., & Padilla, J.L. (Under review). Linking Response Styles to Response Processes: A Cross-Cultural Mixed Methods Approach. *International Journal of Psychology*.
- Benítez, I., Padilla, J.L., & Van de Vijver, A.J.R. (2015). *The qualitative assessment of bias: Contributions of Cognitive Interviewing methodology to the bias definition*. 13<sup>th</sup> European Conference on Psychological Assessment (pp. 27). Zurich: University of Zurich.
- Benítez, I., Van de Vijver, A.J.R., & Padilla, J.L. (In press). A Global Strategy for Investigating Item Bias in Cross-Cultural Studies: A Mixed Methods Approach Integrating Differential Item Functioning and Cognitive Interviews. *Journal of Mixed Methods Research*.
- Blanco, A., & Chacón, F. (1985). La evaluación de la calidad de vida [The assessment of quality of life]. In F.F. Morales, A.B. Abarca, C.H. Casal, & J.M.F. Dols, *Psicología Social Aplicada [Applied Social Psychology]* (pp. 183-210). Bilbao. Desclée de Brouwer.
- Bowling, A. (1991). *Measuring health: a review of quality of life measurement scales*. Milton Keynes: Open University Press.
- Bowling, N. A., & Hammond, G. D. (2008). A meta-analytic examination of the construct validity of the Michigan Organizational Assessment Questionnaire Job Satisfaction Subscale. *Journal of Vocational Behavior*, 73(1), 63-77.
- Campbell, A., Converse, P.E., & Rodgers, W.L. (1916). *The quality of American life*. New York, NY: Russell Sage Foundation.
- Carballo, E., Cadarso-Suárez, C., Carrera, I., Fraga, J., de la Fuente, J., Ocampo, A., Ojea, R., & Prieto, A. (2004). Assessing relationships between health-related quality of life and adherence to antiretroviral therapy. *Quality of Life Research*, 13, 587-599.
- Casas, F. (2004). De afrontar problemas sociales a promover la calidad de vida [From tackling social problems to promoting quality of



- life]. *Revista de Historia de la Psicología*, 25(4), 305-322.
- Casas, F. (2011). Subjective social indicators and child and adolescent well-being. *Child Indicators Research*, 4(4), 555-575.
- Crocker, L., & Algina, J. (1986). *Introduction to classical and modern test theory*. Orlando, FL: Harcourt Brace Jovanovich.
- Cummins, R.A. (2003). Normative life satisfaction: Measurement issues and a homeostatic model. *Social Indicators Research*, 64, 225-256.
- Cummins, R.A., Eckersley, R., Van Pallant, J., Vugt, J., & Misajon, R. (2003). Developing a national index of subjective well-being: The Australian Unity Well-being Index. *Social Indicators Research*, 64, 159-190.
- Diener, E. D., Emmons, R. A., Larsen, R. J., & Griffin, S. (1985). The satisfaction with life scale. *Journal of Personality Assessment*, 49(1), 71-75.
- Fordyce, M. W. (1988). A review of research on the happiness measures: A sixty second index of happiness and mental health. *Social Indicators Research*, 20(4), 355-381.
- Gómez, M., & Sabeh, E. (2001). *Calidad de vida: Evolución del concepto y su influencia en la investigación y la práctica [Quality of life: The evolution of the concept and its influence on research and practice]*. Salamanca: Instituto Universitario de Integración en la Comunidad [University Institute of Integration in the Community], Faculty of Psychology, University of Salamanca.
- Gómez-Vela, M., Verdugo, M. Á., & González-Gil, F. (2007). Calidad de vida y autoconcepto en adolescentes con necesidades educativas especiales y sin ellas [Quality of life and self-concept in adolescents with and without special education needs]. *Infancia y Aprendizaje*, 30(4), 523-536.
- Heyland, D. K., Rocker, G. M., Dodek, P. M., Kutsogiannis, D. J., Konopad, E., Cook, D. J., Peters, S., Tranmer, J.E., & O'Callaghan, C.J. (2002). Family satisfaction with care in the intensive care unit: Results of a multiple center study. *Critical Care Medicine*, 30(7), 1413-1418.
- Huebner, E. S. (1994). Preliminary development and validation of a multidimensional life satisfaction scale for children. *Psychological Assessment*, 6(2), 149.
- Jones, P.B., Barnes, T.R.E., Davies, L., Dunn, G., Lloyd, H., Hayhurst, K.P., Murray, R.M., Markwick, A., & Lewis, S.W. (2006). Randomized Controlled Trial of the Effect on Quality of Life of Second- vs First-Generation Antipsychotic Drugs in Schizophrenia Cost Utility of the Latest Antipsychotic Drugs in Schizophrenia Study (CUtLASS 1). *Archives of General Psychiatry*, 63, 1079-1087.
- Lara, M.C., Ponce, S., & de la Fuente, J. R. (1995). Conceptualización y medición de la calidad de vida de pacientes con cáncer [Conceptualisation and measurement of quality of life in cancer patients]. *Revista de Investigación Clínica*, 47(4), 315-327.
- Lemonnier, I., Guillemin, F., Arveux, P., Clément-Duchêne, C., Velten, M., Woronoff-Lemsi, M.C., Jolly, D., & Baumann, C. (2014). Quality of life after the initial treatments of non-small cell lung cancer: a persistent predictor for patients' survival. *Health and Quality of Life Outcomes*, 12, 73-83.
- Meng, H., King-Kallimanis, B.L., Gum, A., & Wamsley, B. (2013). Measurement bias of the SF-36 Health Survey in older adults with chronic conditions. *Quality of Life Research*, 22, 2359-2369.
- Nakamura, P.M., Teixeira, I.P., Smirmaul, B.P.C., Sebastião, E., Papini, C.B., Gobbi, S., & Kokubun, E. (2014). Health related quality of life is differently associated with leisure-time physical activity intensities according to gender: a cross-sectional approach. *Health and Quality of Life Outcomes*, 12, 98-108.
- Nic Gabhainn, S., & Sixsmith, J. (2006). Children photographing well being: facilitating participation in research. *Children & Society*, 20(4), 249-259.
- Pinquart, M., & Sorensen, S. (2000). Influences of Socioeconomic Status, Social Network, and Competence on Subjective Well-Being in Later Life: A Meta-Analysis. *Psychology and Aging*, 15(2), 187-224.
- Poortinga, Y.H. (1989) Equivalence of cross cultural data: an overview of basic issues. *International Journal of Psychology*, 24, 737-756.
- Real Academia Española [Royal Spanish Academy]. (2015). *Diccionario de la lengua española [Dictionary of the Spanish Language]* (22.a ed.). Madrid, Spain: Autor.
- Rendas-Baum, R., Yang, M., Varon, S. F., Bloudek, L. M., DeGryse, R. E., & Kosinski, M. (2014). Validation of the Headache Impact Test (HIT-6) in patients with chronic migraine. *Health and Quality of Life Outcomes*, 12(1), 1-10.
- Schalock, R.L., & Verdugo, M.A. (2002). *The concept of quality of life in human services: A handbook for human service practitioners*. Washington, DC: American Association on Mental Retardation.
- Schwartzmann, L. (2003). Calidad de vida relacionada con la salud: aspectos conceptuales [Quality of life related to health: Conceptual aspects]. *Ciencia y Enfermería*, 9(2), 9-21.
- Scott, N.W., Fayers, P.M., Aaronson, N.K., Bottomley, A., de Graeff, A., Groenvold, M., Gundy, C., Koller, M., Petersen, M.A., & Sprangers, M.A.G. (2009a). Differential item functioning (DIF) in the EORTC QLQ-C30: A comparison of baseline, on-treatment and off-treatment data The EORTC Quality of Life Group and the Quality of Life Cross-Cultural Meta-Analysis Group. *Quality of Life Research*, 18, 381-388.
- Scott, N.W., Fayers, P.M., Aaronson, N.K., Bottomley, A., de Graeff, A., Groenvold, M., Gundy, C., Koller, M., Petersen, M.A., & Sprangers, M.A.G. (2009b). The practical impact of differential item functioning analyses in a health-related quality of life instrument. *Quality of Life Research*, 18, 1125-1130.
- Tashakkori, A., & Teddlie, C. (1998). *Mixed methodology: combining qualitative and quantitative approaches*. Thousand Oaks, CA: Sage.
- Van de Vijver, F. J. R., & Matsumoto, D. (2011). Introduction to the methodological issues associated with Cross-Cultural Research. In D. Matsumoto & F. J. R van de Vijver (Eds.), *Cross-cultural research methods in psychology* (pp. 1-16). New York, NY: Cambridge University Press.
- Veenhoven, R. (2000). The four qualities of life. *Journal of Happiness Studies*, 1(1), 1-39.
- Wendel-Vos, G.C.W., Schuit, A.J., Tijhuis, M.A.R., & Kromhout, D. (2004). Leisure time physical activity and health-related quality of life: Cross-sectional and longitudinal associations. *Quality of Life Research*, 13, 667-677.
- World Health Organization. (1994). *Quality of life Assessment- An Annotated bibliography*. Geneva: World Health Organization.
- World Health Organization. (1998). *The world health report 1998: life in the 21st century A vision for all*. World Health Organization.
- Yúdice, G. (2002). *El recurso de la cultura [The resource of culture]*. Barcelona: Gedisa.
- Zabriskie, R. B., & McCormick, B. P. (2003). Parent and child perspectives of family leisure involvement and satisfaction with family life. *Journal of Leisure Research*, 35(2), 163.

