Chapter

Quality of Life and Biopsychosocial Paradigm: A Narrative Review of the Concept and Specific Insights

Floriana Irtelli and Federico Durbano

Abstract

The quality of life concept was born in the 1970s within the social sciences and soon it arrived in the field of medicine and health, where this notion has been considered as a criterion to evaluate health interventions. The World Health Organization defines quality of life as the subjective perception individuals have of their life position, in their cultural context and value system, in relation to their objectives, expectations, standards, and worries. It is a very complex and articulated conception, and as a matter of fact in this chapter, we will analyze an overview about this topic, to examine it in depth, and clarify this concept; synthetically, we can note that the quality of life is specified by the perception of one's physical, psychological, and emotional health, by the degree of personal independence, by social relations, and by the type of interaction with one's context. We can note that this construct is broader than that of health, it is not a synonym of it, and it is also important to point out that the definition of the World Health Organization about this topic connects elements resulting from an enormous amount of studies. In this sense, being healthy is considered one of the numerous quality of life dimensions, and health-facilitating behaviors are judged as predictors of the quality of life itself. Moreover, the definition of quality of life always includes a reference to the individual's physical state, but it is not considered only on the basis of a person's bodily functions, detectable with standardized parameters, since it is described in relation to the perceived satisfaction degree regarding this functionality level. This kind of definition shifts the emphasis from the objectively definable functionality to the subjectivity dimension; the detection of both these two aspects can constitute a reliable quality of life measure. Furthermore, we can note that the most common method for measuring quality of life is the administration of questionnaires and, in addition, that there are two questionnaire types: generic and specific for pathology. Finally, this chapter highlights the importance of the biopsychosocial paradigm in relation to the quality of life concept.

Keywords: quality of life, definition, World Health Organization, subjective dimensions, psychosocial factors, biopsychosocial paradigm, questionnaires

1. Introduction

This is a review about the concept of quality of life: today this notion is very important and its definition is really complex; as a matter of fact, it has evolved over the years and become an increasingly articulated idea (i.e., it is specified by the perception of one's physical, psychological, and emotional health, by the degree of independence, by social relations, and by the type of interaction with one's context). We also can note that the quality of life construct is broader than that of health, it is not a synonym of it (as we will analyze). In this sense, being healthy is considered a dimension of quality of life and health-facilitating behaviors are considered the predictors of the quality of life itself [1]. These aspects and many other features are going to be analyzed in depth and clarified in this narrative review.

2. Historical overview: the concept's evolution and scientific assessment

The debate regarding quality of life is quite ancient. Starting from early Greece, Plato had devoted several years of his life in developing a perfect government where quality of life for citizens is a mainstream. The precise term "quality of life" however had not yet been coined at that time; actually, it was introduced later, in the 1970s. We can synthetically define the quality of life as a person's judgment about various aspects of his/her own physical, social, and psychological well-being. The growing importance of personal evaluation of life aspects supported the development of a more precise definition of this concept and the need of a scientific assessment using psychometric standardized tests: thus, an initiative to develop a scientific quality of life assessment was born. The World Health Organization has therefore started a specific research aimed to create a rigorous measurement of this construct. The specific need to develop this research arose for several reasons. First, during recent years, beyond traditional health indicators (such as morbidity and mortality), there has been a broadening focus on the measurement of health outcomes [2], on the inclusion of measures of perceived health, on the impact of disease and impairment about daily activities and behavior [3], and on functional status/disability status measures. Furthermore, it is important to remember that it was also noted that while these questionnaires were beginning to provide a general measure of the impact of the disease, they did not actually assess the specific quality of the disease. This is the reason why, later, some specific questionnaires were developed to measure quality of life in the context of distinguishing diseases. A criticity arose because many measures of health status have been developed in the United Kingdom and in North America, the translation of which for their use in other settings appearing quite unsatisfactory and time-consuming [4]. A third important reason was the need to go beyond the increasingly mechanistic model of medicine that deals only with the eradication of disease and symptoms. The awareness that this model is obsolete reinforced the need for the introduction of a new humanistic perspective into health care. It is widely recognized that health care is essentially a humanistic transaction where the patient's well-being is the primary aim; it no longer stops just at making the symptoms disappear, but it is more inclusive and complete. To deal with these reasons, the World Health Organization created the initiative to develop a quality of life assessment promoting a holistic approach to health and health care, as emphasized in the World Health Organization's definition of health as the "state of physical, mental and social well-being and not merely as the absence of disease and infirmity." Precisely in 1995, this organization defined in an extensive and articulated way the

quality of life as the subjective perception that individuals have of their position in life, in their life context, culture and value system, and in relation to the achievement of their goals and their expectations, reference standards, and concerns. The result is a very complex concept in which the quality of life refers to various dimensions: the perception of one's physical, psychological, and emotional health, the degree of independence of the individual, social relations and the type of interaction with their own life context. As we have anticipated, the concept of quality of life therefore appears broader than that of "health," being not synonymous with "health" [5] but at the same time being intertwined with this notion and with the concept of a biopsychosocial paradigm. The definition of quality of life given by the World Health Organization links together a huge amount of studies [6–14], and in this way being in a state of good health is considered only one dimension of quality of life, and behaviors facilitating health are considered predictors of the quality of life itself. An acknowledgement of these aspects is necessary in order to distinguish the notion of quality of life from the notion of health. It is important to point that the definition of quality of life always includes a reference to the physical state of the subject, but it is not enough to describe the quality of a person's functionality. The latter can be detected with standardized parameters, since it is mostly correlated to the degree of satisfaction perceived with respect to these standardized parameters and the level of physical functionality.

In this chapter, we present a definition of quality of life that shifts the emphasis from the scope of objectively definable functionality to the focus on subjectivity. In the field of objectivity, the disease is described as a defined clinical and physical state (the disease) and as the different areas of functionality (work area, psychological area, social area, etc.). It is also important to consider that quality of life refers to a subjective point of view, which is embedded in a cultural, social, and environmental context. In different geographic areas, there can be different concepts and different cultural values that can influence people's perception. It is also important to state that the World Health Organization's quality of life definition focuses on the respondents' "perceived" quality of life; it does not require a measure of any detailed symptoms, conditions, or diseases, nor disability as objectively judged, but rather the perceived effects of disease and health interventions on the person's quality of life. Starting from this point of view, an assessment of this multidimensional concept was developed, incorporating the individual's perception of health status, psychosocial status, and other aspects of life. For several years, the importance of going beyond an observation of the quality of life from an individual point of view was also underlined, and already in 2003 an Italian researcher, Ingrosso, encouraged a collective and social research in this field. In particular, he states that the topic of quality of life can characterize the perspective about a local community and its dynamics. In this broader definition of quality of life, Ingrosso refers to the evaluation that individuals of a population make about the correspondence of certain personal and collective endowments with respect to their own scale of needs and values, based on their own orientations and experiences. He put as example how citizens of a specific local community can express judgments about the adequacy or inadequacy of policies or complexes of interventions that are implemented in a specific geographic territory [15]. He also pointed out that in recent years the debate about the quality of life has partially gotten lost in generalities. The debate was also divided between the extendibility of the objective component and the subjective one, thus losing the perspective about the sense of collective, contextual, relational, and operational evaluation with which the term was originally used as from the 1970s. Scientific research can thus modify the collective knowledge about this topic, to stimulate the citizens, whether directly or indirectly, to think about some

aspects regarding the lines of intervention consistent with their own expectations. Therefore, not only quantitative methods like indicators and surveys, but also qualitative surveys and dynamic surveys, such as participatory research-process methods, are useful for the purposes of these surveys. These methodologies are often indicated as the first fundamental step when carrying out interventions in a city or territory [15]. Today the social aspect of quality of life is increasingly present, so the concept of quality of life now is often strictly related to the terms "livable" and "livability," referring to the more or less desirable economic and social environment of a town, a metropolis, or a country: nowadays, these terms have become part of the common language.

3. Specific questionnaires: focusing on the difference between the quality of life concept and the health concept

Often, as before said, the concept of quality of life is confused with the concept of health, but this is wrong because the term health is not enough to explain the quality of life. For example, some individuals can live with a poor functional status or a poor health status but they express a high quality of life, or vice versa; moreover, quality of life cannot also be equated simply with the terms "lifestyle," "life satisfaction," "mental state," or "well-being." As anticipated in the last decades, several scientific studies have tried to define this construct better, outlining the most appropriate areas and tools for the investigations and the observation of this concept; in fact during the past years two classes of complementary health status measures have emerged: objective measures of functional health status and subjective measures of health and well-being. These measures are multilevel and multidimensional, and there are many published quality of life measures. A really important measurement scale is the World Health Organization's Quality of Life scale; this questionnaire measures this specific area by examining the answers that the subject can provide on a Likert scale (from 1 to 5). This questionnaire exists in two versions:

- the World Health Organization's Quality of Life scale-100 (WHOQOL-100);
- the World Health Organization's Quality of Life scale Brief (WHOQOL-Brief).

These scales can also be used to assess variation in quality of life across different cultures or to compare different subgroups. The WHOQOL-Brief is a 26-item version, which summarizes the WHOQOL-100 (i.e, the 100-item version, which is longer); both these questionnaires are useful in clinical settings, medical practices, audits, policy-making, and in the assessment of the effectiveness of different treatments. The brief version of WHOQOL can also be used in a variety of different cultural settings, it is easily administered and does not impose a huge burden on the respondent. The answers are always given on a Likert scale (from 1 to 5); the questions that are addressed in the short version of the test are presented in **Box 1**.

The creation of this questionnaire involved a collaborative approach to international instrument development [16], the aim being to develop a questionnaire that could be individually filled in a collaborative way and in several settings. In order to achieve these results, several culturally different centers were involved in operationalizing the scale's questions about the quality of life, and also in question writing, question selection, and pilot testing. Thanks to this approach, standardization and equivalence between different settings were guaranteed. Many centers in different geographic areas were selected in order to include differences in the levels of industrialization, types of health services, and other elements that were relevant

to the measurement of quality of life (e.g., the perception of self, the perception of the dominant religion, and the specific role assigned to the family in a cultural context). This method ensured a real internationality of the collaboration.

1. How would you rate your quality of life?
2. How satisfied are you with your health?
3. To what extent do you feel that physical pain prevents you from doing what you need to do?
4. How much do you need any medical treatment to function in your daily life?
5. How much do you enjoy life?
6. To what extent do you feel your life to be meaningful?
7. How well are you able to concentrate?
8. How safe do you feel in your daily life?
9. How healthy is your physical environment?
10. Do you have enough energy for everyday life?
11. Are you able to accept your bodily appearance?
12. Have you enough money to meet your needs?
13. How available to you is the information that you need in your day-to-day life?
14. To what extent do you have the opportunity for leisure activities?
15. How well are you able to get around?
16. How satisfied are you with your sleep?
17. How satisfied are you with your ability to perform your daily living activities?
18. How satisfied are you with your capacity for work?
19. How satisfied are you with yourself?
20. How satisfied are you with your personal relationships?
21. How satisfied are you with your sex life?
22. How satisfied are you with the support you get from your friends?
23. How satisfied are you with the conditions of your living place?
24. How satisfied are you with your access to health services?
25. How satisfied are you with your transport?
26. How often do you have negative feelings such as blue mood, despair, anxiety, depression?

Box 1.
WHOQOL-26 items.

To summarize, quality of life questionnaires should include different domains:

- physical domain (which refers to physical sensations, health, and pain),
- psychological domain (which refers to emotions, such as anxiety and desperation),
- level of independence domain (which refers to the autonomy of the person in various life areas, from the financial to the physical one),
- social relationships domain (which refers to social interactions with family, friends, and professionals)
- environmental domain (which refers to aspects of the environment that can promote the development of a person) [16].

It is also important to mention that with regard to the measurement of quality of life in illness situations, there are specific questionnaires [17] such as the WHOQOL for people with HIV or diabetes.

In summary, we can state that it is important to note that the definition of quality of life always includes a reference to the physical state of the subject, but is no longer considered only on the basis of the quality of the functionality of a person, detectable with standardized parameters, since they are described in relation to the degree of satisfaction perceived with respect to this level of functionality: this definition shifts the emphasis from the scope of objectively definable functionality to that of subjectivity; the detection of both these two aspects can probably constitute a reliable measure of the quality of life [1]. Finally, we can affirm that within the sphere of objectivity, disease is understood as a defined clinical framework and the different areas of functionality: physical, psychological, social, and work. In the context of subjectivity, the perception of disease and patient satisfaction are placed in the various areas of life, in which it is conceivable that the state of health may influence. Concluding, we can detect that the most common method of measuring quality of life is the administration of questionnaires, and that there are two families of questionnaires: generic and specific for pathology [1].

4. A new perspective: well-being as a promotion of quality of life

Health care professionals are increasingly recognizing that measurements only focused on disease outcomes are an insufficient determinant of health status. Accordingly, nowadays the focus has shifted from the idea of physical/psychological well-being as the elimination of a problem or a disease to a conceptualization of well-being as a promotion of quality of life. This shift of perspective has radically changed not only our concept of health and disease, but also that of the human being, of his/her life process and crises [18]. For a long time, the conditions of well-being have been defined on the basis of normative models that have produced health models consistent with the biomedical model, which was very reductive. Only in relatively recent times, and certainly thanks to the contribution of health psychology, we have begun to implement a new approach that claims the specificity of a discipline connected to the singularity and uniqueness of the subject. This uniqueness, to be grasped, also requires openness to a complex thought, capable of overcoming the reductionist perspective and the dichotomies [18]. Today we accept that to understand a phenomenon we have to take into account the context, the

individual perspective and perception of the person that is involved in this context, and the multiple dimensions that contribute to the generation and understanding of the reality that we are studying. All these cognitive shifts have a particularly important impact on care systems and on devices that are designed to intervene in critical situations, which are also the result of the culture and context that can produce them, and consistent with the social representations of illness, health, quality of life, and with the scientific theories that are built on those representations. Today we agree on the need to abandon the medicalist logic of "restitutio ad integrum" adopting a new mentality that redirects our approach to reality [18]: also the concept of quality of life is therefore now detached from the biomedical model, which has been surpassed also thanks to the biopsychosocial model that we will analyze in the next paragraph.

5. The biopsychosocial paradigm

The biopsychosocial paradigm characterizes health psychology [19] and the specific areas regarding quality of life that are analyzed in depth by this discipline. The perspective of the biopsychosocial paradigm was introduced by George Engel who coined the term "Biopsychosocial Approach" as a privileged modality both to decode and understand the processes of health and disease throughout the existential path, and to articulate forms of care [20, 21]. The biopsychosocial model is inspired by the paradigm of complexity, in sharp contrast to biomedical reductionism, as well as to the hierarchization of sciences. It adopts the perspective of the general theory of systems developed by Von Bertalanffy [22], which considers a set of interrelated events as a system that manifests specific functions and properties according to the level to which it is placed compared to a wider system. In fact, this systems theory states that all levels of the organization are connected to each other, so that the change of one affects the change of the other; for example, a biological change affects the psychological level and social level and vice versa [20, 21].
The biopsychosocial model refers to three basic principles: dialogue-connection, relationship, and humility. This paradigm considers the person as a "whole": as a genetic heir, a subject of reflection and decision, as well as a historical-cultural and family subject. The axioms of this model are inclusive (focused on the understanding of diversity) and not exclusive, the perspectives of this approach are conceived as global, always considering biological, psychological, and social facets together [19]. Today we therefore refer to the biopsychosocial model whose fundamental assumption is that every condition of health or disease is a consequence of the interaction between biological, psychological, and social factors and we therefore move beyond the old dualism that separated the body from the mind; it is therefore an attempt to see people in their entirety. It is based on the key concept that the person represents a biological unit made of both body and mind, that is, not only of a biological body but also of psychic and emotional factors, which play a decisive role not only in balancing the life of the individual but also in the genesis and development of organic diseases. Health can therefore be understood as the product of the interaction between a physical-mental-social unit. As a matter of fact anyone who wants to sufficiently understand another person cannot simply observe the individual aspects, which, although important, do not allow to understand his/her overall situation, but must approach him/her on the contrary by seizing his/her entirety and his/her complexity. The centrality of this model has been confirmed and validated by scientific literature. This model marked the shift from a traditional medical model centered only on the body (and on illness as a purely biological event) to a medicine centered on the person [20, 21]. Today there is the awareness that a biopsychosocial

screening, more than a compartmentalized approach of medical and psychosocial models, can help the planning of a more effective treatment in case of illness and can also prevent distress [23]. Human beings tend to grow through the development of complex systems that are intertwined with each other and affect the three main areas explored by the model biopsychosocial paradigm:

- the biological part, consisting of all the systems and subsystems that are part of it;
- the part of the mind and,
- last but not least, the interpersonal/social part.

These three areas are always interacting with each other and are always present in every vital event, so any alteration of the patient's state of health will be recognized by a change in the integration between these three systems that are linked and intertwined [24].

Finally, we can state that in order to approach the concept of quality of life and the knowledge and care of the person in his/her complexity also means to examine the relations between these three systems simultaneously.

6. Conclusions

To summarize, we can affirm that the concept of quality of life (as it is intended in the field of medicine and health psychology) refers mainly to the well-being of the individual from a physical, cultural, social, and psychological point of view, also considering the cultural context and its value and, furthermore, considering the individual's objectives, standards, and life expectancy [25]. Several studies have therefore proposed to develop a quality of life model that would integrate objective and subjective perspectives; some authors also focused on multidimensional nature of this construct by analyzing in depth some key areas: physical well-being, emotional well-being, the material well-being, potential development of the subject and his/her daily activities [26, 27]. Other authors have proposed a holistic model that describes the quality of life as a dynamic process that links the individual reality with the social reality emphasizing the importance of environmental factors and personal factors, and the relationship that the person establishes with the constraints and resources of the environment in which he/she lives [28].

We can conclude by stating that the quality of life construct refers to an indicator of material well-being expressed by money gain and economic resources, of psychophysical well-being of the individual, and the outcome related to the effectiveness of the programs implemented in support of various individuals [29]. The assessment of quality of life can be carried out according to different methodological approaches, but we have to note that making an univocal operationalization of this construct can be sometimes quite difficult for its complexity [30]. Finally, we can also point out that a key distinction between self-report questionnaires can be done according to their targets: they can be generic, or they can refer to the quality of life in relation to a specific disease, such as HIV, as we anticipated. In particular, we can use the first type of generic measurement indifferently on a heterogeneous population, like intelligence tests. We can also divide generic measuring instruments into two macro categories: profile tests, in which the scaffolding represents the evaluation of multiple dimensions of quality of life, which can be observed individually, or we can find tests that offer a single synthetic score. Every approach

has its pros and cons, to be considered when choosing them for a specific objective. According to another methodological approach, instead, the subjective dimension of the illness experience is privileged to allow an in-depth analysis of the quality of life understood as a life process capable of facing pathological events. From this point of view, the semi-structured interview may also be useful [31]. In any case, it is always important to integrate the objective observation with the subjective part because (as we stated) the biological, social, and psychological dimensions are always intertwined with each other.

Concluding, we can consider that it makes sense to refer in this context to what was declared by the International Society for Quality of Life Studies [32], which stated overall that the quality of life includes both an objective point of view and a subjective point of view, and involves areas relating to material well-being, health, productivity, affectivity, safety, society, and inner well-being. The objective area includes a sound measure of objective well-being while the subjective sphere includes personal satisfaction. Personal satisfaction has to be linked to the importance assigned by the individual to some subjective and cultural values; however, we can note that the definition of objective could be misleading: social indicators are usually chosen from a theory, or are based on the availability of individual valuation data, influencing researchers' choices. Also the social situation in which the survey is developed has a great influence, but unfortunately these aspects are often ignored or undervalued [19]. On the other hand, it must be specified also that if the perception of quality of life is reduced to a simple psychological survey of consumer satisfaction, it is a really limited perspective because all the relational, social, and cultural facets that the quality of life assessment should contain (referring to the biopsychosocial paradigm) are lost [20, 21]. Certainly all the sets of knowledge obtained through the assessments should be collected with a scientific method that is based on technically reliable and shared hypotheses. It is also necessary to rely on constructive epistemological and methodological interpretations, and it is important that the researchers should not attribute to the data collected an indisputable value of reality, but rather of a map that, because of its characteristics and controllability, allows it to express an orientation. The goal cannot in fact be just abstractly cognitive, but rather that of triggering a process of knowledge, elaboration, and participation in the population concerned, especially if the investigation aimed at finding a shared priority scale [19]. It is also important to note that it is the duty of every mental health professional to work in the direction of maximizing people's well-being and quality of life, but this task cannot be the sole responsibility of the professionals of this discipline. On the contrary, it must be a common goal of all those who, in any capacity, deal with individuals, groups, organizations, and institutions [33]; to do this better, we have to consider human beings in their complexity, and this is possible by using the biopsychosocial paradigm [34] and the articulated concept of quality of life.

Author details

Floriana Irtelli[1]* and Federico Durbano[2]

1 Università Cattolica del Sacro Cuore, Milano, Italy

2 Azienda Ospedaliera Melegnano e della Martesana, Università Statale, Milano, Italy

*Address all correspondence to: dott.ssaflorianairtelli@gmail.com

References

[1] Saita E, editor. Psico-Oncologia: Una Prospettiva Relazionale. Milano: Edizioni Unicopli; 2009

[2] World Health Organization World Health Statistics Annual. Geneva: WHO; 1991

[3] Bergner M, Bobbitt RA, Carter WB. The sickness impact profile: Development and final revision of a health status measure. Medical Care. 1981;**19**:787-805

[4] Sartorius N, Kuyken W. Translation of health status instruments. In: Orley J, Kuyken W, editors. Quality of Life Assessment: International Perspectives. Heidelberg: Springer Verlag; 1994

[5] Saita E, Tamanza G. Cure palliative, qualità di vita, passaggi generazionali. In: Saita E, editor. Psico-Oncologia: Una Prospettiva Relazionale. Milano: Edizioni Unicopli; 2009. pp. 40-66

[6] The Whoqol Group Development of the World Health Organization WHOQOL-BREF quality of life assessment. Psychological Medicine. 1998;**28**:551-558

[7] The World Health Organization Quality of Life Group. The World Health Organization Quality of Life Assessment (WHOQOL-BREF): Introduction, Administration, Scoring and Generic Version of the Assessment. Geneva, Switzerland: Programme on Mental Health; 1996

[8] Skevington SM, Lotfy M, O'Connell KA, WHOQOL Group. The World Health Organization's WHOQOL-BREF quality of life assessment: Psychometric properties and results of the international field trial. A report from the WHOQOL group. Quality of Life Research. 2004;**13**:299-310

[9] Krägeloh CU, Henning MA, Hawken SJ, et al. Validation of the WHOQOL-BREF quality of life questionnaire for use with medical students. Education for Health. 2011;**24**(2):1-5

[10] Zhang Y, Qu B, Lun S, Wang D, Guo Y, Liu J. Quality of life of medical students in China: A study using the WHOQOL-BREF. PLoS ONE. 2012;**7**(11):1-9

[11] Saqib LF, Raza O, Montazeri A, Nedjat S, Yaseri M, Holakouie-Naieni K. Psychometric properties of the Urdu version of the World Health Organization's quality of life questionnaire (WHOQOL-BREF). Medical Journal of the Islamic Republic of Iran. 2017;**25**:31-129

[12] Al-Shibani N, Al-Kattan R. Evaluation of quality of life among dental students using WHOQOL-BREF questionnaire in Saudi Arabia: A cross sectional study. Pakistan Journal of Medical Sciences. 2019;**35**:668-673

[13] Wei YB, Yin Z, Gao YL, Yan B, Wang Z, Yang JR. Quality of life of Chinese urologists: A cross-sectional study using WHOQOL-BREF. Hong Kong Medical Journal. 2015;**21**:232-236

[14] Izutsu T, Tsutsumi A, Islam A, Matsuo Y, Yamada HS, Kurita H, et al. Validity and reliability of the Bangla version of WHOQOL-BREF on an adolescent population in Bangladesh. Quality of Life Research. 2005;**14**:1783-1789

[15] Ingrosso M. Senza benessere sociale. Nuovi rischi e attese di qualità della vita nell'era planetaria. Franco Angeli: Milano; 2003

[16] The WHOQOL Group. The World Health Organisation Quality of Life Assessment (WHOQOL): Development

and General Psychometric Properties. Geneva: WHO; 1996

[17] Niero M. Qualità della vita e della salute. Franco Angeli: Milano; 2002

[18] Irtelli F. Illuminarsi di Ben-essere. Armando Editore: Roma; 2016

[19] Saita E. Pensare alla salute a alla malattia. Educatt: Milano; 2011

[20] Engel G. The need for a new medical model: A challenge for biomedicine. Science. 1977;**196**:129-136

[21] Engel G. How much longer must medicine's science be bound by a seventeenth century world view? Psychotherapy and Psychosomatics. 1992;**57**:3-16

[22] Bertalanffy V. General System Theory. Foundations, Development, Applications. London: Penguin; 1968

[23] Thomas BC, Bultz BD. The future in psychosocial oncology: Screening for emotional distress—The sixth vital sign. Future Oncology. 2008;**4**:779-784

[24] Scoppola L. Corpo e Psiche: Gruppalità e Integrazione nella Relazione di Cura. In: Cianfarini M, editor. L'Intervento Psicologico in Oncologia: Dai modelli di riferimento alla relazione con il paziente. Carocci Faber: Roma; 2007

[25] The WHOQOL Group. The World Health Organization Quality of Life assessment (WHOQOL): Position paper from the World Health Organization. Social Science & Medicine. 1995;**41**:1403

[26] Felce D, Perry J. Quality of life: Its definition and measurment. Research in Developmental Disabilities. 1995;**16**:51-74

[27] Tempier R, Mercier C, Leouffre P, Caron J. Quality of life and social integration of severely mentally ill patients: A longitudinal study. Journal of Psychiatry and Neuroscience. 1997;**22**:249-255

[28] Dossa PA. Quality of life: Individualism or holism? A critical review of the literature. International Journal of Rehabilitation Research. 1989;**12**:121-136

[29] Lehman A, Possidente S, Hawkner F. The quality of life of chronic patients in a State hospital and in community residences. Hospital and Community Psychiatry. 1986;**37**:901-907

[30] Hays RD, Morales LS. The RAND-36 measure of health-related quality of life. Annals of Medicine. 2001;**33**:350-357

[31] Luoma ML, Hakamies-Blomqvist L. The meaning of quality of life in patients being treated for advanced breast cancer: A qualitative study. Psycho-oncology. 2004;**13**:729-739

[32] Andelman R, Board R, Carman L, Cummins R, Ferriss A, Friedman P. Quality of Life Definition and Terminology: A Discussion Document from the International Society of Quality of Life Studies. International Society of Quality of Life Studies: Blacksburg; 1998

[33] Frati F. Il lato oscuro della mente, premesse per il cambiamento sociale, edizioni la meridiana. 2012

[34] Vincenti E, Irtelli F. Familiar-mente, legami e prospettive che non ti aspetti. Armando Editore: Roma; 2018