# PLACE OF HAPPINESS AND SUBJECTIVE INDICATORS OF WELL-BEING IN QUALITY OF LIFE ISSUES

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#### **ABSTRACT**

Quality of life (QOL), a multidimensional construct, has in the last two and a half decades attracted attention in research and practice across the medical sciences, humanities and the social sciences. One major challenge is the conceptualization of QOL which has led to confusion with other terms. This paper is an attempt to conceptualise QOL and examine the point(s) of distinction with happiness and wellbeing. Evidence from literature established significant overlaps between happiness, wellbeing and QOL, with quality of life seen as an umbrella construct having happiness, wellbeing and other factors as sub-components. The composite quality of life is broadly categorized into objective and subjective components. The objective component has to do with established (societal) norms using observable and quantifiable socio-economic and health indicators. The subjective component, which is the thrust of this paper, has to do with the perception/personal self-evaluation of individuals about how good they feel, how happy they are, and general life satisfaction in order of importance to the individuals. Abraham Maslow's theory of motivation, otherwise known as theory of needs, provides an effective framework in explaining quality of life from the subjective perspective. With the hierarchical nature of human needs and motivation dynamics, it becomes obvious that subjective quality of life is fluid and influenced by situational factors and prevailing circumstances, coupled with individual motivation. The implication is that individuals will evaluate their quality of life based on the needs that are

motivating at that point in time and how much they have been able to satisfy those needs.

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#### 1. Introduction

Quality of life has in the last two and a half decades attracted quite a lot of attention from researchers and policy makers. The importance of the phenomenon is underscored by the fact that several disciplines are researching into it and making conclusions and recommendations using the lens of their respective disciplines. Quality of life at first appears straightforward but an attempt to define and measure it shows some form of complexity that makes it difficult for a convergence of definition and measurement. This complexity is furthered when one attempts to compare or predict quality of life with concepts like happiness, wellbeing and the like. In spite of the complexities however, quality of life appears to be central to human existence.

Psychology and psychologists with basic concern about healthy human functioning have been integral parts of the discourse on quality of life, happiness and subjective well-being. This presentation will look at quality of life, happiness and well-being from the psychological paradigm and suggest interventions that can improve these for optimal living.

#### 2. Conceptual Clarifications

Literature is replete with definitions and conceptualization of happiness, wellbeing and quality of life, but a look at these definitions suggest conceptual overlap among the constructs. This much was alluded to by Medvedev and Landhuis (2018) and Camfield and Skevington (2008) in an attempt to verify the relationship among them. For example, Diener (2006) did not only see subjective well-being as synonymous with happiness but described it as an umbrella term for different valuations that people make regarding their lives, the events happening to them, their bodies and minds, and the circumstances in which they live. This particular intervention points to an extremely high relationship that may suggest a redundancy or comparing six with half a dozen.

# • Quality of Life

Quality of life (QOL) has been defined in many ways by several authorities depending on discipline, focus, purpose, background of the defining authors and, in some instances, the prevailing circumstance. The World Health Organization Quality of Life Group (1995), in its cross-cultural project, defined 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 concerns. It is a broad ranging concept, affected in a complex way by the person's physical health, psychological state, level of independence, social relationships and their relationships to salient features of their environment.

This particular definition puts the individual and his/her worldview at the centre of determining what quality of life is. The complexity of quality of life is quite evident here and the challenge of a global measurement and benchmarking is obvious given that the definition assumed that quality of life is a subjective phenomenon. Another implication of this definition of quality of life is that it is viewed largely as a health-related issue considering the WHO's conceptualization of health as a complete state of mental, social, and physical well-being. Quality of life is therefore not only complex but multidimensional. In an attempt to break down QOL into measurable components, Cummins (1997) defines it as both the objective and subjective aspects of human existence covering seven domains: material well-being, health, productivity, intimacy, safety, community and emotional well-being. Eyles (1990) however posited that quality of human life is linked to environmental quality, maintaining that the two concepts are two sides of the same coin.

On the one hand, the objective approach believes that the components of quality of life must possess observable and quantifiable indicators and there must be set standards that are absolute in nature against which assessment can be made to determine quality of life. On the other hand, the subjective approach comprises self-ratings of happiness, well-being, or life satisfaction in relation to how important they are to the individual. In other words, emphasis is not on a predetermined standard against which the quality of life of individuals is judged.

The challenge is therefore how to integrate the objective and subjective domains of quality of life to arrive at a composite score for an individual. Related to this is the issue of a universal measure of the construct, given the developmental and environmental differences among nations. Psychologists have always argued that many variables cannot be measured directly, many of these variables are latent constructs that can only produce a reliable and valid measurement when the operational definitions have been rigorously developed (Aiken & Groth-Marnat, 2006).

The biological/medical model of quality of life sees the construct basically from the fundamental biological constitution of humans. In this wise, physical health is considered the overriding issue in quality of life. This model was made popular by Ventegodt, Merrick and Andersen (2003) and it implies that quality of life will be seen as the ability of an individual to take personal care of him/herself in routine daily activities. This position has however been criticized for paying attention only to physical well-being and ignoring psychological and environmental factors in evaluating quality of life. By and large, quality of life is a multidimensional construct with several domains touching on all aspects of human life. The construct itself and the constituent domains are not static but dynamic; they are influenced by factors in the physical, political and economic environments. This dynamism appears to be a major challenge in establishing a universal and enduring measure of quality of life.

#### **Happiness**

Happiness is a universal construct known to virtually all cultures of the world. It has been argued in some quarters that happiness is the most important goal in life. People strive to make marital choices based on quest for happiness, look for jobs that will make them happy, live in places that will ensure happiness and try as much as possible to avoid situations that will compromise what they see as their happy state. This overriding quest for happiness has been confirmed by cross-cultural research evidence that significantly shows the primacy of happiness over other individual values such as health, wealth or love (Kim-Prieto et al., 2005). However, in spite of the observed primacy of happiness in human life, there seems to be no agreement among researchers as to a generally accepted definition of happiness, as a matter of fact there are other values that are cherished and pursued because they bring happiness. In addition to the

controversy of definition, literature has also shown that happiness overlaps with some other constructs and is used synonymously with a number of other constructs like subjective well-being, emotional well-being, positive affect and quality of life (Diener, 2006; Ratzlaff et al., 2000). This is an indication that the definition of happiness is context dependent (Carlquist et al., 2016) and may not be enduring.

Happiness has been defined simply as a state of being happy, it is used in describing a range of positive emotions like pride, joy and contentment. In a more scientific attempt, Diener (2006) defined happiness as a global evaluation of life satisfaction, while Andrews and McKennell (1980) defined it as evaluation of life quality. These definitions rather than defining happiness in concrete terms seem to use the construct as an arrow pointing back to quality of life, well-being and life satisfaction. In an attempt to describe happiness, the bottom-up and top-down approach have been adopted (McKennell, 1980; Diener, 2006). The bottom-up approach sees happiness as the aggregate of both positive and negative affects; this seems to suggest that for any positive feeling there is a corresponding negative feeling. This assertion has been found to have no empirical support. The top-down approach, on the other hand, concludes that happiness is a function of subjective evaluation of how good a life an individual perceives he/she is living, and how satisfied they are with such.

Layard (2005) however makes a distinction between *feeling* happy and *being* happy. In other words, *feeling* happy refers to *state* happiness which is not enduring but momentary and occasioned by something, while being happy is *trait* happiness which is enduring, originating from the inside and attributable to the personality of the individual and not easily compromised. This approach concludes that happiness should be seen as a global evaluation of the individual's life quality comprising cognition and emotion. The assertion further attaches happiness to quality of life in an intricate manner. The *state*-trait dichotomy, in understanding the construct of happiness, has attracted significant research attention. Proponents of the *state* approach aver that happiness is hedonic and does not have any form of cognitive appraisal. Accordingly, happiness is considered an emotional phenomenon.

In response to the hedonic argument, other researchers introduced the dual route model of emotional processing (LeDoux, 2000). This approach established that happiness is triggered when certain parts of the brain are stimulated and this

leads to some physiological reactions and cognitive appraisal. Research on cognitive therapy has supported the influence of cognition on emotional states; this has put a limitation on the definition of happiness as merely emotional well-being. In relation to this, the eudemonic model of happiness is considered to complement the discussion on happiness. The model conceptualizes happiness as psychological well-being or positive functioning and comprising six dimensions: purpose in life, personal growth, environmental mastery, autonomy, positive self-regard, and social connections (Ryff & Keyes, 1995). The eudemonic model bears resemblance to the view of Cummins (1997) and allied researchers on subjective quality of life, but according to Helliwell, Huang & Wang (2014), it does not actually include subjective well-being and happiness. Also, Springer and Hauser (2006) criticized the overlap among dimensions.

## • Subjective Well-being

Medvedev and Landhuis (2018) defined subjective well-being as "the scientific term for happiness and life satisfaction, the thinking and feeling that your life is going well, not badly". In a related definition, Diener, Lucas and Oishi (2002) defined subjective well-being as a person's cognitive and affective evaluations of his or her life. Affect in this regard is considered positive when the emotions, moods and feelings experienced are pleasant (e.g. joy, elation, affection, etc). These definitions clearly show that subjective well-being has both affective and cognitive components and it is strictly from the point of view of the individual and not an objective evaluation by another person against a predetermined standard. Happiness is as well shown to be an integral part of subjective well-being.

Both internal and external factors are found to influence well-being, the internal factors, according to Diener (2006), include personality, temperament and the individual's outlook, while the external factors include the society in which the individual lives in, social relationships and ability to meet their basic needs. It is however pertinent to know that people's mood states are dynamic, not static, and this obviously then determines their subjective well-being at a point in time. This suggests the transient nature of subjective well-being which is a challenge in making an enduring evaluation. Research has hinted at some possible outcomes of subjective well-being to the effect that "happy" people are more likely to be healthier and live longer, have better social relationships and

be more productive. All these, according to Diener (2006), indicate that those high in subjective well-being seem to be healthier and function more effectively compared to people who are chronically stressed, depressed, or angry.

## • Six and Half a Dozen: Establishing Overlaps

There is the need to briefly establish from literature overlaps in the constructs of happiness, subjective well-being and quality of life and see if the terms can be used interchangeably or considered as one construct with several domains. Dienner et al., (2010) reviewed the model of eudemonic happiness and came up with the construct of psychological flourishing or an individual's self-perceived success which they considered as an aspect of life satisfaction emphasizing social relationships; purposeful life; engagement in activities; self-esteem; and optimism all of which overlap with quality of life and happiness measure (WHOQOL Group, 1998). Another indication of overlap is in the work of Hills and Argyle in the development of the new version of the Oxford Happiness Inventory (Oxford Happiness Questionaire), they found that the terms "well-being" and "subjective well-being" as synonymous for "happiness".

Probably more convincing in the argument for establishing overlaps is the work of Medvedev and Landhuis (2018). They set out on the premise that happiness, subjective well-being, and quality of life are concepts that share common components, and lack standardized operational definitions or criteria, which is evident in the interchangeable use of the terms in research literature. With this hypothesized position, Medvedev and Landhuis conducted an extensive empirical investigation. Data from the study concluded that all applied well-being measures have high loadings on the global well-being domain that explains about 80% of the variance in the OHQ, the psychological domain of quality of life and subjective well-being. These findings support the proposed global dimension of well-being that transcends relative distinctions between specific components contributing to overall wellness (Kasdan, Biswas-Diener & King, 2008; Hills and Argyle, 2002; Joseph & Lewis, 1998). These results also provide support for the interchangeable use of happiness and subjective well-being, and suggest that these constructs and quality of life domains may be considered as facets of the global well-being construct.

Given the established high correlation among happiness, subjective wellbeing and quality of life, it may be safe to conclude that the constructs are synonymous and should be considered as one construct with multiple domains and the domains are intricately intertwined such that they jointly contribute to overall well-being which I choose to refer to as quality of life. The term quality of life appears more encompassing and lends itself more to scientific inquiry. It should also be noted that psychological research on quality of life has shown that an objective measure of quality of life cannot on its own determine the well-being of an individual without the individual on his own indicating how he or she feels. It is not impossible for all known objective indicators to point to a good life while the individual subjectively evaluates his life as not well.



#### 3. Quality of Life as a Pyramid: A Theoretical Perspective

The psychological perspective sees behaviour as dynamic and influenced by environmental/situational factors and dispositional/personality factors. These two sets of factors interact to produce and change human behaviour, attitude and engagement. Traditionally, disposition is expected to direct behaviour but research has shown that this is not always the case; there are times when the situational pull is so strong that individuals behave in contradiction to their disposition. This also holds true for self-evaluation of one's quality of life. Individuals give different evaluations of their quality of life at different times depending on factors motivating them at that point in time. These motivating

factors are labeled as needs in psychological parlance, and for the purpose of this paper, the Abraham Maslow Hierarchy of Needs Theory will be used to explain perceived quality of life and why it should not be expected that self-evaluation by individuals will be consistent throughout the lifetime.

Abraham Maslow (1943) propounded a theory of motivation known as the needs theory. The main thrust of the theory is that human needs are arranged in a particular order which people are motivated to achieve. According to the theory, some needs take precedence over others and must be satisfied first. These needs are arranged in hierarchy within a pyramid (see figure 1). In its original form, Maslow identified five needs which motivate behaviour, these are: physiological needs (the physical necessities for life – air, food, water, shelter, clothing, sleep), safety needs (health, employment, property, family, stability), belongingness and love needs (friendship, family, intimacy, connection), selfesteem (confidence, achievement, respect for other, connections, need for individuality) and self-actualization (morality, creativity, spontaneity, acceptance, experience purpose, meaning and inner potential). Initially, the five were categorized as lower-order and higher-order needs, an individual will first satisfy needs at a level before moving to the next level. The lower-order needs are made up of the physiological needs, safety needs and belongingness needs, while the higher-order needs are the self-esteem and self-actualization needs. The classification has since been refined as will be shown later. The needs are arranged bottom up, with what is considered the most basic needs.

The classification was later revised into deficiency needs and growth needs, the first four on the pyramid from the bottom are classified as deficiency needs, while the last at the top is considered growth need. The deficiency needs are borne out of lack/deprivation and people are motivated to meet them and the longer the lack or deprivation, the stronger the motivation to meet them. For example, the longer a person goes without water, the thirstier he/she becomes. The growth needs, on the other hand do not stem from lack or deprivation but from the desire for personal growth. However, progress up the pyramid may be disrupted when one fails to satisfy the lower level needs.

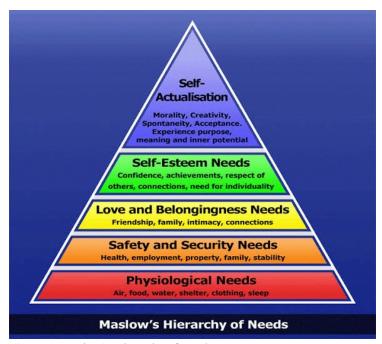


Figure 1. Maslow's Hierarchy of Needs.

Source: www.pinterest.com

The theoretical postulation of Maslow on the hierarchy of needs has empirical implications for explaining quality of life. Individuals will evaluate their quality of life based on the needs that are motivating at that point in time and how much they have been able to satisfy those needs. A person who has largely satisfied needs at a particular level will evaluate his/her quality of life as high while the person still struggling to satisfy the same needs will give a negative evaluation. Meanwhile, for the fellow who upon satisfying the lower level needs and has moved to another level on the pyramid, his self-evaluation of quality of life at the new level may be low until he is significantly able to satisfy the corresponding at the new level. These assertions were supported by Hagerty (1999) in an empirical study conducted in 88 countries to test the Maslow hierarchy of needs on national quality of life. It became obvious that a uniform or universal evaluation of quality of life may not be attainable in absolute terms, rather quality of life should be evaluated based on the specific needs of individuals or groups at a particular point in time. The challenge therefore is how to develop and validate a measure of quality of life tailored to the specific needs of individuals and groups at a point in time.

One important point to note in the Maslow theory is that the peak of the pyramid appears to be a mirage, people keep aspiring and seeking higher quality of life even when they are thought to have self-actualized. Maslow (1943) captured this phenomenon in a quote:

It is quite true that man lives by bread alone — when there is no bread. But what happens to man's desires when there is plenty of bread and when his belly is chronically filled?

At once other (and "higher") needs emerge and these, rather than physiological hungers, dominate the organism. And when these in turn are satisfied, again new (and still "higher") needs emerge and so on. This is what we mean by saying that the basic human needs are organized into a hierarchy of relative prepotency. (Maslow, 1943, p. 375)

The seemingly unending nature of pursuit at the level of self-actualization led to a further revision of the pyramid.

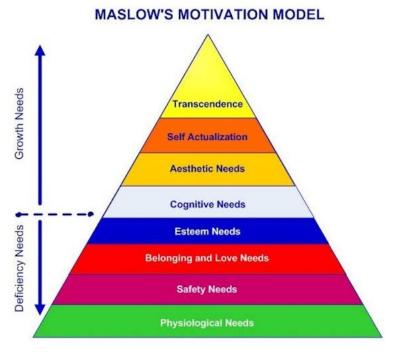


Figure 2. Maslow's Motivation Model.

Source: www.simplypsychology.org

Table 1. Factor structure and Estimate of Factor Loadings for the Generic PQOL Scale

S/N	PQOL Item	Content-	Relation-	Social	Self-	Self-health	Environ-	Recreation
		ment	ship	support	competence	perception	mental	
13	I am contented with what I have	.81*	.14	.02	.22	0.02	.03	.14
12	I have adequate control over my privacy	.73*	.18	.21	.16	0.25	.02	.11
9	I enjoy my job and my family	.72*	.02	.03	.02	0.02	.44	.11
21	I always sleep well	.60*	.16	.01	.02	0.42	.02	.02
22	Me sex life has always been normal	.51*	.19	.24	.15	-0.12	.21	.47
10	My trust in God keeps me going in life	0.14	.77*	.02	.21	0.02	.24	.14
11	I don't get involved in shady things	0.22	.72*	.11	.02	0.02	.02	.02
6	My judgments and perception of issues are usually accurate	0.29	.63*	.36	.38	.18	20	.04
14	I enjoy cordial relationship with my wife and parents	0.02	.53*	.46	.02	-0.13	.13	.03
16	My neighbours are very friendly to me	0.45	.02	.81*	.03	0.02	.02	.02
15	My friends are very kind and supportive	0.22	.13	.63*	.12	0.15	.02	.13
3	I have enough strength to carry out my daily activities	0.03	.11	.47*	.40	.26	.36	.14
4	I hardly forget things	0.03	.11	.14	.70*	0.21	.27	.02
5	I always do what I believe in	0.02	.18	.17	.69*	.02	.02	.20
7	I can achieve whatever goal I set for myself	0.33	.22	.20	.66*	.03	.02	.02
8	Helping others give me joy	0.18	.46	.02	.57*	.02	.02	.22
1	I am in a perfect state of health	0.24	.03	.02	.02	.74*	.03	.28
2	I always eat balanced diet	0.15	.02	.38	.27	.59*	.02	25
19	I am up-to-date on my job	0.29	.02	.26	.19	12	.78*	.02
20	I find it easy to adjust to changes in my environment, job & status	0.02	.50	.03	11	.41	.59*	.02
18	I always find time to listen to music and watch television	0.11	.23	.02	.14	.17	.02	.78*
17	I often do volunteer work to help in my community	0.02	.10	.55	.02	.02	.03	.59*
	Eigen Value	6.29	1.86	1.70	1.45	1.32	1.14	1.13
	Percentage of Variance	13.56	11.57	10.80	10.58	7.21	7.04	6.93
	Cumulative Percentage	13.56	25.13	35.93	46.61	53.73	60.76	67.69

Source: Olapegba (2009).

## 4. Indicators of Quality of Life

Given the position espoused above that the three constructs considered in this paper should be regarded as just one – quality of life with domains of happiness and subjective well-being on one hand and using the Maslow's needs theory to explain the dynamics of quality of life, I would like to share some indicators of quality of life. This indicators are outcomes of an empirical study I conducted in a quest to develop a quality of life measure for the Nigerian culture.

Specifically, the study was designed to develop and validate a generic perceived quality of life measure for the Nigerian culture (Olapegba, 2009). The Principal Component Analysis extracted 7 factors (see table 1): contentment, relationship, social support, self-competence, self-health perception, environmental relationship, and recreation.

#### 5. Conclusion

Quality of life is not a strange concept in research and policy circles, however, there appear to be differences in its conceptualization, meaning and approach. These differences are often cultural in nature and, in some cases, reflect differences in the disciplines of the researchers. These have led to the emergence of diverse definitions of quality of life over the years (Olapegba, 2013). Using the framework of psychology, it is obvious that universal approaches in the measure and planned intervention to improve quality of life may not be effective. This is due to the fact that there are individual and group differences in the needs of people and groups and important information that should feed into policy will be lost if the present approach is retained.

Researchers and policy makers should begin to think along the line of developing measures that recognize peculiar needs, motivation to fulfill the needs and the positions of individuals on the needs pyramid. In addition, discipline-specific boundaries should be collapsed to encourage a multidisciplinary approach in the study of quality of life. Meanwhile, government and policy makers should be proactive in the provision of an enabling environment that will improve quality of life, institutions should be strengthened to adequately ensure that life is worth living.

#### References

- Aiken, L.R. & Groth-Marnat, G. (2006). *Psychological Testing and Assessment* (Twelfth Edition). Boston: Pearson Education Group.
- Andrews, F.M. & McKennell, A.C. (1980). Measures of self-reported well-being: their affective, cognitive, and other components. *Social Indicators Research*, 8(2), 127-155.
- Camfield, L. & Skevington S.M. (2008). On subjective well-being and quality of life. *Journal of Health Psychology*, 13(6): 764-775.
- Carlquist, E., Ulleberg P., Delle, F. A., Nafstad, H. E. and Blakar, R. M. (2016). Everyday understandings of happiness, good life, and satisfaction: three different facets of well-being. *Applied Research in Quality of Life*, 12(2), 481–505. doi: 10.1007/s11482-016-9472-9
- Cummins, R.A. (1997). Comprehensive Quality of Life Scale-Adult. Australia: Deakin University.
- Diener, E. (2006). Guidelines for national indicators of subjective well-being and ill-being. *Journal of Happiness Studies*,7(4), 397-404.
- Diener, E., Lucas, R.E., & Oishi, S. (2002). Subjective well-being: the science of happiness and life satisfaction. In: Synder & Lopez (Eds), *Handbook of Positive Psychology*. London: Oxford University Press.
- Eyles, J. (1990). Objectifying the subjective: the measurement of environmental quality. *Social Indicators Research*, 22, 139-153.
- Hagerty, M. R. (1999). Testing Maslow's Hierarchy of Needs: national-quality-of life across time. *Social Indicators Research*, 46(3), 249 271.
- Helliwell, J.F., Huang, H., & Wang S. (2014). Social capital and well-being in times of crisis. *Journal of Happiness Studies*, 15(1), 145-162.
- Hills, P., & Argyle, M. (2002). The Oxford Happiness Questionnaire: a compact scale for the measurement of psychological well-being. *Personality and Individual Differences*, 33(7), 1073-1082.
- Joseph S. and Lewis, C.A. (1998). The depression-happiness scale: reliability and validity of a bipolar self-report scale. *Journal of Clinical Psychology*, 54(4), 537–544. doi: 10.1002/(sici)1097-4679(199806)54:4<537::aid-jclp15>3.0.co;2-g.
- Kim-Prieto, C., Diener, E., Tamir, M., Scollon, C., & Diener, M. (2005). Integrating the diverse definitions of happiness: a time-sequential framework of subjective well-being. *Journal of Happiness Studies*, 6(3): 261-300.
- Layard, R. (2005). Happiness: Lessons from a New Science. London: Penguin.
- LeDoux, J.E. (2000). Emotion circuits in the brain. Annual Review Neuroscience, 23: 155-184.
- Maslow, A.H. (1943). A theory of human motivation. *Psychological Review*. 50(4), 370. 96. doi:10.1037/h0054346.
- Medvedev, O.N. & Landhuis C.E. (2018). Exploring construct of well-being. *Happiness and Quality of Life. Peer J*, 6, doi:10.7717/peerj.4903
- Olapegba, P. O. (2009). Perceived quality of life: towards a generic measure in Nigerian culture. *Ibadan Journal of the Social Sciences*, 7(2), 137-142.

- Olapegba, P. O. (2013). Factor structure and item analysis of the perceived quality of life scale among people living with HIV. *Ibadan Journal of the Social Sciences*, 11 (2), 148 156.
- Ratzlaff, C., Matsumoto, D., Kuznetzova, N., Raroque, J., & Ray, R. (2000). *Culture and Subjective Well-being*. Boston: Massachusetts Institute of Technology.
- Ryff, C.D. & Keyes C.L.M. (1995). The structure of psychological well-being revisited. *Journal of Personality and Social Psychology*, 69(4): 719-727.
- Springer, K.W. & Hauser, R.M. (2006). An assessment of the construct validity of Ryff's Scales of Psychological Well-being: method, mode, and measurement effects. *Social Science Research*, 35(4), 1080-1102.
- Ventegogt, S., Merrick, J., and Andersen, N. J. (2003). Quality of Life Theory 1. The IQOL Theory: an integrative theory of the global quality of life concept. *The Scientific World Journal*, 3, 1030-1040.
- World Health Organization Quality of Life (WHOQOL) Group (1995). The World Health Organization Quality of Life Assessment (WHOQOL) position pper from the World Health Organization. *Social Science and Medicine*, 41(10), 1403-1409.
- World Health Organization Quality of Life (WHOQOL) Group (1998). World Health Organization Quality of Life (WHOQOL) Group Development of the World Health Organization WHOQOL-BREF Quality of Life Assessment. Psychological Medicine 28(3): 551-558.