

## Subjective quality of life: it's association with other constructs

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### Summary

The focus on assessing users' views as a way to evaluate healthcare interventions has increased the importance of quality of life as an outcome measure in psychiatric care. However, despite its wide use, little consensus seems to exist in the literature on the concept of quality of life and on its measurements. Although there is an agreement that it encompasses both objective and subjective indicators—the former referring to external living conditions and the latter describing one's appraisal of these conditions, the available literature shows that the two indicators are only weakly to moderately correlated. Inter-correlation between subjective constructs such as subjective quality of life, self-rated needs and self-rated symptoms has also been reported, suggesting the existence of a general subjective appraisal factor influencing all ratings of all those constructs. The factor summarizes a higher subjective quality of life and fewer needs and symptoms, and is affected by psychopathology, in particular mood symptoms. A challenge for future research is to identify how the general appraisal factor can be distinguished from the specific variance of subjective quality of life ratings that is independent of that factor. There seems to be a need for more research into the association of quality of life with other constructs and into the factors that mediate the associations described in the literature. This is likely to require more conceptual work and systematic studies using qualitative and quantitative methods.

### Introduction

In the last two decades, a great emphasis has been placed on subjective quality of life (SQOL) as an important indicator of service success in providing satisfactory health services to consumers. SQOL has also been considered by health service managers as an important tool evaluating care, whether institutional or community-based. In medical care, the focus has always been on curing illness or alleviating symptoms. It is now being argued that a major aim of therapeutic intervention should be to improve quality of life, which is very relevant for the treatment of psychiatric illness (Stoker *et al.*, 1992).

As a concept, quality of life is viewed as the gap, at a given period in time, between the aspirations of a patient and his/her perceived reality (Levi & Anderson, 1975; Andrews & Withey, 1976, United Nations, 1990). Some also noted that quality of life may be a function of one's comparisons with previous best, and social comparisons, i.e. comparisons of own situation to the situation of others (Lauer, 1999). However, in the WHO International Classification of Impairments, Disabilities and Handicaps, quality of life is equated with handicap, which is defined as the patient's subjective disadvantage of being ill, in contrast to health status, which is the clinical disability caused by the disease (Stoker *et al.*, 1992). It has been hypothesized that quality of life includes a cognitive aspect that involves the way the

individual perceives and reacts to the objective living condition (Awad *et al.*, 1997). In this definition, quality of life includes issues related to health. It also contains many non-health related elements such as job, family, environment, and many other life situations, to make it useful as a specific health outcome (Awad *et al.*, 1997). Quality of life is therefore viewed as a multi-dimensional concept that incorporates dimensions referring to more than the improvement or deterioration of clinical symptoms. Thus any approach to its measurement should include a subjective component assessing patients' self reports about their quality of life (Awad *et al.*, 1997).

Instruments assessing quality of life were therefore developed to reflect the importance attached by practitioners and researchers to the social and economic impact of psychiatric illnesses. These instruments have been developed largely within the context of de-institutionalization, and to evaluate community-based models of care and their strategies adapted specifically to care for people in the community. Evaluation thus entails not only the medical condition of patients but also their social and economic support (Simeoni *et al.*, 2000). While some of these quality of life measures have been widely used or accepted as a standard, most require the use of a trained interviewer, many are quite lengthy, the content of many is closely tied to the specific symptoms of a disorder, and the psychometric properties of some are troublesome or unknown (Endicott *et al.*, 1993). Others noted that given the

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variety of existing instruments, the choice of measure must rely on the investigator's particular purpose and needs (Simeoni *et al.*, 2000), and that the priority now should be to develop illness-specific quality of life measures that are appropriate for the schizophrenic patients and that can capture the unique clinical features of the disease (Awad *et al.*, 1997; Simeoni *et al.*, 2000). For comparison purposes, however, generic instruments of quality of life are better than illness-specific ones which may be influenced by symptoms and by the experience of medication side effects so that SQOL constructs may become more blurred and may overlap with constructs such as symptomatology.

Although there is yet no single accepted model of quality of life in mental illness or a universal instrument to measure it (Awad *et al.*, 1997), most attempts to conceptualize or measure the total life experience of individuals propose some constellation of objective and subjective dimensions (Brekke *et al.*, 2001). The 'objective' indicator of the quality of life refers to resource availability and objective life conditions, whereas the 'subjective' one refers to the individual's subjective evaluation of his/her life (Carpiniello *et al.*, 1997).

In this article, we will provide an overview of the evidence on the association between the objective and subjective indicators of quality of life. Given the importance and the popularity of SQOL as an outcome measure, we will discuss the recent literature about (1) its association with other subjective evaluation criteria used in measuring and evaluating outcome of psychiatric care, and (2) its distinctness from these constructs. This is a new area of investigation in quality of life research, and may have major methodological and theoretical implications on the use of several subjective evaluation criteria as distinct measures in psychiatric research.

### **SQOL and objective indicators**

Objective indicators of quality of life represent external life conditions such as income, housing, and access to the community while subjective quality of life represents the individual's appraisal of these conditions (Corrigan & Buican, 1995). There is ample literature on the association between the objective and subjective indicators of quality of life, and a consensus that the association is—at most—only weak to moderate. For example, Lehman *et al.* (1982) indicated that although they found significant correlations between objective and SQOL measures in most areas (e.g. those who used services more were significantly more satisfied with their health), in some they did not correlate (e.g. those who were more autonomous in their decision-making were not significantly happier than those who were not autonomous). The authors argued the findings supported the construct validity of the concepts measured since

the correlation coefficients between objective and SQOL measures were either significant and in the expected directions or not significant. However the reported correlation coefficients were relatively weak and ranged from 0.04 to 0.57, suggesting that, although associated, objective and subjective indicators measured rather different aspects of quality of life.

In another study, Lehman (1988) reported modest intra-domain correlations between objective and subjective indicators, a finding consistent with the literature (Andrews & Withey, 1976; Campbell *et al.*, 1976). Domain-specific SQOL measures correlated most strongly with general life satisfaction—correlation ranged from 0.16 to 0.65—and demographic and diagnostic variables correlated least strongly with life satisfaction with correlation coefficients ranging from 0.01 to 0.17. Given that the objective and SQOL measure seem to measure different aspects of quality of life, Lehman (1988) indicated that both should be assessed to provide a full view of quality of life among the chronically mentally ill.

Similar conclusions to those reported by Lehman *et al.* (1982, 1988) were reached by Warner *et al.* (1998) who indicated that in a factor analysis of the quality of life variables, objective measures and subjective variables loaded onto different factors, suggesting that they measure different underlying constructs. When entered as dependent variables in separate analyses of variance, only the factor loaded with objective indicators of family and home circumstances distinguished between different study sites. These findings led the authors to conclude that assessment aimed at distinguishing outcome for people with schizophrenia in different treatment systems should include both objective and subjective measures, and that objective indicators are good discriminators between patient populations—better than subjective ratings of satisfaction and well-being.

Heinze *et al.* (1997) also noted that on particular life domains, SQOL did not always reflect objective measures. Presenting results from paranoid schizophrenia patients in London and Berlin, the authors mentioned that in some areas such as occupation, finances and social life, the differences in SQOL were less than the differences in the objective data. The finding that the subjective perception was not congruent with the objective situation suggested that there were other factors influencing satisfaction with quality of life, and that the objective parameters may have been influential on the subjective perception of the quality of life, but they were not the only influence.

As far as the relationship between standard of living and SQOL is concerned, Skantze *et al.* (1992) found no significant association between the two measures, despite the large variance found in the quality of life instrument. Moreover, no significant associations were identified between sub-scales of the standard of living and sub-scales of the quality

of life instrument, thus suggesting that quality of life and standard of living are independent for schizophrenia patients. The authors noted that their findings suggest that patients' goals exceed basic general standard, and that the patients' subjective impressions of their lives may thus be more dependent upon the dynamics of the 'inner world' (self-fulfilment, self-reliance, etc.) than on the possession of various attributes in the 'outer world'. This was confirmed by Carpinello *et al.* (1997) who stressed that patients' subjective perception of their quality of life is only partly linked, in the majority of cases, to standards of living—so long as the basic needs are covered—and is probably linked to a greater extent to personal subjective evaluation of the life events and circumstances experienced by patients, and to the inevitable psychological burden imposed by the often dramatic consequences of the illness.

New research points to the role that executive functioning and other variables play in formulating SQOL and possibly mediating the influence of objective life circumstances on subjective appraisal. Brekke *et al.* (2001) reported an association of psychosocial functioning with SQOL that was strongly moderated by the patient's executive functioning, independent of psychopathology. Specifically, individuals with schizophrenia with impaired executive functioning were found to have a positive and statistically significant association between psychosocial functioning and measures of subjective experience. However among patients with intact executive performance, psychosocial functioning was negatively associated with satisfaction with life. The authors thus suggested that executive functioning does play an essential role in moderating the relationship between subjective experience and psychosocial functioning. Recent research has also found that certain neuro-cognitive and psycho-physiological variables are directly related to psychosocial functioning (Green *et al.*, 2000), therefore, quality of life cannot be understood without considering the direct effect of psycho-biological variables. Based on their findings, Brekke *et al.* (2001) suggested two considerations. The first is the need for different models of quality of life based on executive capacity: Patients with intact executive capacity might have greater capacity for improvements in psychosocial functioning, and thus will have a more complex pathway to achieving SQOL. Schizophrenia patients with executive deficits will more readily translate small gains in psychosocial functioning into improvements in their subjective experience of quality of life. Second, any model of quality of life in schizophrenia should consider executive capacity as a moderator of the relationship between functional and humanitarian outcomes. However, their findings were based on a small sample size, and thus need further validation.

## SQOL and other subjective constructs

In psychiatric care, and as part of outcome evaluation of healthcare services provided, several criteria have been used to assess the subjective experience of patients with mental illness, especially those with schizophrenia. The most frequently used are those measuring subjective quality of life, self-rated needs, self-reported symptoms, and satisfaction with treatment. The aim is to identify whether psychiatric care achieved its objective of increasing SQOL of the patient, decreased his/her reported symptoms and needs, and achieved a high level of satisfaction with treatment in the patient. Therefore, and as a result of their increased importance in clinical practice and research, a number of instruments have been developed to measure these criteria. For example, there exists a number of psychometric instruments measuring SQOL (*Quality of Life Interview*, Lehman *et al.*, 1982; the *Lancashire Quality of Life Profile*, Oliver, 1991; the *Oregon Quality of Life instrument*, Bigelow *et al.*, 1991; and the *Manchester Short Assessment of Quality of Life*, Priebe *et al.*, 1999). Most of these instruments use satisfaction ratings in a similar way (e.g. *Quality of Life Interview*, the *Lancashire Quality of Life Profile*, the *Manchester Short Assessment of Quality of Life*). Other subjective instruments include those assessing self-reported symptoms (*Von Zerssen Complaints Checklist*, Von Zerssen, 1986; the *Schizophrenia Symptom Distress Statement* and the *Schizophrenia Symptom Intensity Statement*; Hamera *et al.*, 1996), and self-rated needs (*Camberwell Assessment of Need*, Phelan *et al.*, 1995; the *UK Health of the Nation Outcome Scales*, Wing *et al.*, 1996).

In the literature, there is evidence suggesting a moderate association between each of these subjective evaluation criteria and their objective observer-rated counterparts. As discussed earlier, several studies showed modest correlation between patients' SQOL and objective indicators of quality of life. This also applies to other subjective constructs. For example, the shared variance of observer-rated and self-rated psychopathology ranges between 0 and 65% depending on the instrument used or the sample under investigation (Deluty *et al.*, 1986; Faravelli *et al.*, 1986; Fava *et al.*, 1986). Similar correlation size has been reported between observer-rated and self-rated needs for care (Hoffman & Priebe, 1996; Slade *et al.*, 1986). In the evaluation of pharmacological and psychotherapeutic interventions as well as the impact of service configuration, subjective evaluation criteria are regularly seen as evaluation criteria in their own right (Priebe *et al.*, 1998).

In research, the assumption is that different subjective evaluation criteria have different theoretical foundations and therefore measure different things. Recent evidence however supports the hypothesis that different subjective evaluation criteria are not fully distinct in what they assess. Priebe *et al.* (1998) investigated the associations among SQOL,

self-rated symptoms, self-rated needs and patient assessment of treatment, in four different samples of patients with schizophrenia or alcoholism, and found them all to be substantially inter-correlated. When subjected to factor analysis, the four criteria loaded on a single overall subjective factor that accounted for almost 50% of the total variance of the criteria. In an earlier study, Priebe *et al.* (1995) reported similar findings with 39% of the variance in the single subjective factor being explained by SQOL, self-rated needs and patients' assessment of treatment. New evidence also suggests a temporal co-variation of inter-correlated subjective evaluation criteria. Fakhoury *et al.* (in press) assessed the relationship among self-rated symptoms, self-rated needs and SQOL, in two different samples of schizophrenia patients, at baseline and after a follow-up period. They found the three instruments to be inter-correlated at both baseline and follow-up, with some inter-correlation over time. When subjected to factor analysis, all three criteria loaded into one stable subjective appraisal factor at both baseline and follow-up, summarizing a negative subjective quality of life and more symptoms and needs, and explaining a shared variance of 50–60%. The factor was also found to be strongly associated with observer-rated mood.

Bengtsson-Tops & Hansson (1999), however, investigated the relationship between needs and SQOL in schizophrenic patients. The authors found more symptoms to be significantly associated with a worse SQOL, accounting for 25% of the variance in SQOL. Needs in the areas of company, psychological problems, daytime activities problems, and sexual expression problems accounted for a further 26% of the variance. In all areas a more severe need of care and support was associated with a worse total SQOL. Having controlled for the influence of symptoms, the authors reported a further 25% of the variation in SQOL to be accounted for by the severity of needs concerning company, psychological distress, daytime activity and sexual expression. Although the results were merely observational, the authors emphasized the importance of interventions targeting social relations and the occupational situation of long-term mentally ill patients, as well as interventions focussing on psychological problems, if general aims concerning quality of life were to be reached. However, they further concluded that for the planning and evaluation of interventions, both needs and SQOL should be assessed as they seem to measure different aspects of the patient's life.

New research also suggests an association between SQOL and another construct: the Antonovsky's Sense of Coherence (SOC) instrument—which measures personal orientation towards life that determines one's health experience. Bengtsson-Tops & Hansson (2001) found that in a sample of schizophrenia patients, SOC was significantly associated with quality of life, both self—correlation coefficient

of 0.60—and interviewer-rated—correlation coefficient of 0.29—with a stronger SOC indicating a more beneficial situation. An increased SOC score overtime was also found to be significantly associated with changes in better overall SQOL. The authors indicated that in terms of clinical implications, an awareness of the importance of sense of coherence and the underlying salutogenic model with regard to interventions directed to individuals with schizophrenia would therefore enhance the possibilities to increase the effectiveness of care for this group and their quality of life.

Finally, the association between observer-rated psychopathology and SQOL needs to be noted. Despite that observer-rated psychopathology is not a subjective construct, one would argue that it depends, and to a large extent, on the patient's perception of their experience of symptoms, and hence as a measure, it will have immense impact on SQOL. This has been confirmed by existing research. For example, Kaiser *et al.* (1997) reported that in a sample of in- and out-patients with schizophrenia in Germany and the UK, of several demographic and illness-related variables, psychopathology was found to be the only robust and consistent predictor of SQOL (Kaiser *et al.*, 1997). Bengtsson-Tops & Hansson (1999) found a 25% of the variance in SQOL to be due to psychopathology, and Corrigan & Buican (1995) reported a figure of 14%. Fakhoury *et al.* (in press) provided correlations between psychopathology—particularly anxiety and depression—and SQOL ranging from 0.35 to 0.62. Similar correlations were reported by others (Hansson *et al.*, 1999). In addition, both Priebe *et al.* (1998) and Fakhoury *et al.* (in press) indicated an association between a general subjective appraisal factor summarizing several subjective evaluation criteria and psychopathology, with correlations ranging from 0.33 to 0.71. This association with psychopathology is of prime importance to clinicians, with some recommending that interventions targeting psychopathology should pay particular attention to the affective state of the patient since it is associated with patients' SQOL (Hansson *et al.*, 1999). This association has been found in observational studies and does not directly suggest a causal relationship. Nevertheless, most researchers seem to assume that mood symptoms influence SQOL rather than SQOL influencing psychopathology or that there are other underlying psychological processes influencing both mood and SQOL.

## Discussion

Quality of life research has gained importance over the last 20 years. With emphasis being placed on users' views on service provision and quality, and with the strong association with psychopathology, quality of life may be adapted as a main outcome for

benchmarking services. Some researchers argued that currently there is no one accepted model of quality of life, nor is there a universal instrument measuring it (Awad *et al.*, 1997). Yet, the consensus so far is that quality of life encompasses objective and subjective indicators. The two indicators seem to be only weakly to moderately correlated. However, Huxley (1998) noted that the relationship between the objective and subjective indicators may have been overlooked and that many aspects of SQOL are in fact closely linked to objective life conditions or external factors. The importance of this stems from the situation that most current community-based treatment or rehabilitation programmes, in particular programmes of social care, have an improvement in quality of life as a main goal. If changes in external life conditions targeted in these intervention programmes are not reflected in changes in SQOL, it may be challenged as an appropriate measure of outcome of these interventions (Hansson *et al.*, 1999). This argument is supported by observations that, in extreme situations such as unemployment (Priebe *et al.*, 1995) and homelessness (Lehman *et al.*, 1995), there is congruence at a group level between these conditions and the corresponding subjective domains—those employed and those with housing stability were found to have higher satisfaction scores in the SQOL domains of employment and accommodation leading to higher general satisfaction with life.

The relationship between SQOL and other subjective criteria opens the doors for new research. Although different subjective criteria such as needs and SQOL to some extent measure different aspects of the patient's life (Bengtsson-Tops & Hansson, 1999), there is substantial evidence suggesting that SQOL and self-rated needs, symptoms, and treatment satisfaction are interrelated, co-vary over-time, and load into a single subjective appraisal factor (Priebe *et al.*, 1998; Fakhoury *et al.*, in press). These findings suggest that while the measurement of more than one criteria may be useful in research, the presence of an underlying subjective appraisal factor will always yield a correlation, with no inference of causality. Future investigations should therefore distinguish between a general appraisal factor and specific aspects of different criteria, identify how the general appraisal factor can be assessed more directly, and point out the most relevant aspects of mood and cognitive processes responsible for the general tendency for more positive or negative subjective appraisal. Information exists on the amount of shared variance, and thus, the focus should now be placed on assessing how the specific variance of different criteria independent of that factor can be maximized, and to perhaps, redefine the concepts of these criteria based on further empirical results. Given the relationship between sense of coherence and SQOL, future investigations should tackle whether and, if so, in what way sense

of coherence is distinct from SQOL and other subjective constructs.

The limited available literature also shows that studies conducted in the field were often naturalistic in design providing information on the presence of an association (e.g. studies by Priebe *et al.*, 1998; Bengtsson-Tops & Hansson, 1999, 2001) rather than informing about the causality of the relationship. Intervention studies, particularly those with longitudinal designs, are recommended to establish causality and to provide evidence on the influence of subjective constructs such as needs and symptoms on quality of life. Finally, on a broader level, it is important for the vast amount of existing empirical literature on quality of life to feed into more conceptual work that in turn would inform further research in the field. Given the most frequently used generic concept of SQOL, it is now known what information quality of life indicators—at least in groups of patients with severe mental illness and in community based services—can provide to clinicians and researchers, and what the limitations in the existing quality of life construct and scales are. The next step has therefore to be conceptual and possibly involve revising the currently dominating psychological models of SQOL.

## References

- ANDREWS, F.M. & WITHEY, S.B. (1976). *Social indicators of well-being*. New York: Plenum.
- AWAD, G., VARUGANTI, L. & HESLEGRAVE, R. (1997). Measuring quality of life in patients with schizophrenia. *Pharmacoeconomics*, 11, 32–47.
- BENGTSSON-TOPS, A & HANSSON, L. (1999). Clinical and social needs of schizophrenic outpatients living in the community: the relationship between needs and subjective quality of life. *Social Psychiatry & Psychiatric Epidemiology*, 34, 513–518.
- BENGTSSON-TOPS, A. & HANSSON, L. (2001). The validity of Antonovsky's Sense of Coherence measure in a sample of schizophrenia patients living in the community. *Journal of Advanced Nursing*, 33, 432–438.
- BIGELOW, D.A., MCFARLAND, B.H. & OLSON, M.M. (1991). Quality of life of community mental health programme clients: validating a measure. *Community Mental Health Journal*, 27, 43–55.
- BREKKE, J., KOHRT, B. & GREEN, M. (2001). Neuropsychological functioning as a moderator of the relationship between psychosocial functioning and the subjective experience of self and life in schizophrenia. *Schizophrenia Bulletin*, 27, 697–708.
- CAMPBELL, A., CONVERSE, P.E. & RODGERS, W.L. (1976). *The quality of American life*. New York: Russell Sage Foundation.
- CARPINIELLO, B., LAI, G.L., PARIANTE, C.M., CARTA, M.G. & RUDAS, N. (1997). Symptoms, standards of living and subjective quality of life: a comparative study of schizophrenia and depressed outpatients. *Acta Psychiatrica Scandinavica*, 96, 235–241.
- CORRIGAN, P.W. & BUICAN, B. (1995). The construct validity of subjective quality of life for the severely mentally ill. *Journal of Nervous and Mental Disease*, 183, 281–285.

- DELUTY, B.M., DELUTY, R.H. & CARVER, C.S. (1986). Concordance between clinicians' and patients' rating of anxiety and depression as mediated by private self-consciousness. *Journal of Personal Assessment*, 50, 93–106.
- ENDICOTT, J., NEE, J., HARRISON, W. & BLUMENTHAL, R. (1993). Quality of life enjoyment and satisfaction questionnaire: a new measure. *Psychopharmacology Bulletin*, 29, 321–326.
- FAKHOORY, W.K.H., KAISER, W., RODER-WANNER, U.U. & PRIEBE, S. (in press). Subjective evaluation: is there more than one criterion? *Schizophrenia Bulletin*.
- FARAVELLI, C., ALBANESI, G. & POLI, E. (1986). Assessment of depression: a comparison of rating scales. *Journal of Affective Disorders*, 11, 245–253.
- FAVA, G.A., KELLNER, R., SANSKY, J., PARK, S., PERINI, G.I. & ZIELEZNY, M. (1986). Rating depression in normals and depressives: observer versus self-rating scales. *Journal of Affective Disorders*, 11, 29–33.
- HAMERA, E.K., KRAENZLE SCHNEIDER, J.K., POTOCKY, M. & CASEBEER, M.A. (1996). Validity of self-administered symptom scales in clients with schizophrenia and schizoaffective disorders. *Schizophrenia Research*, 19, 213–219.
- HANSSON, L., MIDDLEBOE, T., MERINDER, L., BJARNASON, O., BENGTTSSON-TOPS, A., NILSSON, L., SANDLUND, M., SOURANDER, A., SOORGARD, K.W. & VINDING, H. (1999). Predictors of subjective quality of life in schizophrenic patients living in the community. A Nordic multicentre study. *International Journal of Social Psychiatry*, 45, 247–258.
- HEINZE, M., TAYLOR, R.E., PRIEBE, S. & THORNICROFT, G. (1997). The quality of life of patients with paranoid schizophrenia in London and Berlin. *Social Psychiatry & Psychiatric Epidemiology*, 32, 292–297.
- HOFFMANN, K. & PRIEBE, S. (1996) Needs for help and support in the view of schizophrenic long-term patients and their therapists (in German). *Fortschritte der Neurologie-Psychiatrie*, 64, 473–481.
- HUXLEY, P. (1998). Quality of life. In: K. MUESER & N. TARRIER (Eds), *Handbook of social functioning in Schizophrenia*, Boston: Allyn & Bacon.
- KAISER, W., PRIEBE, S., BARR, W., HOFFMANN, K., ISERMANN, M., RODER-WANNER, U.U. & HUXLEY, P. (1997). Profiles of subjective quality of life in schizophrenic in- and out-patient samples. *Psychiatric Research*, 66, 153–166.
- LAUER, G. (1999). Concepts of quality of life in mental health care. In: S. PRIEBE, J.P. OLIVER & W. KAISER (Eds) *Quality of life and mental health care*. Hampshire: Wrightson Biomedical Publishing Ltd.
- LEHMAN, A.F. (1988). A quality of life interview for the chronically mentally ill. *Eval Progress Planning*, 1, 51–62.
- LEHMAN, A.F., WARD, N.C. & LINN, L.S. (1982). Chronic mental patients: the quality of life issue. *American Journal of Psychiatry*, 139, 1271–1276.
- LEHMAN, A.F., KERNAN, E., DEFORGE, B.R. & DIXON, L. (1995). Effects of homelessness on the quality of life of persons with severe mental illness. *Psychiatric Services*, 46, 922–926.
- LEVI, L. & ANDERSON, L. (1975). *Psychosocial stress: population, environment, and the quality of life*. Holliswood, NY: Spectrum.
- OLIVER, J.P.J. (1991). The social care directive: development of a quality of life profile for the use in community services for the mentally ill. *Social Work & Social Science Review*, 3, 5–45.
- PHELAN, M., SLADE, M., THORNICROFT, G., DUNN, G., HOLLOWAY, F., WYKES, T., STRATHDEE, G., LOFTUS, L., MCCRONE, P. & HAYWARD, P. (1995). The Camberwell Assessment of Need: the validity and reliability of an instrument to assess the need of people with severe mental illness. *British Journal of Psychiatry*, 167, 589–595.
- PRIEBE, S., GRUYTERS, T., HEINZE, M. & HOFFMANN, C. (1995). Subjective criteria for evaluation of psychiatric care: methods for assessment in research and routine care (in German). *Psychiatrische Praxis*, 22, 140–144.
- PRIEBE, S., RODER-WANNER, U.U., KNIGHT, S. & EVANS, S. (1999). Applications and results of the Manchester Short Assessment of Quality of Life (MANSA). *International Journal of Social Psychiatry*, 45, 7–12.
- PRIEBE, S., KAISER, W., HUXLEY, P., RODER-WANNER, U.U. & RUDOLPH, H. (1998). Do different subjective evaluation criteria reflect distinct constructs. *Journal of Nervous and Mental Disease*, 186, 385–392.
- SIMEONI, M.C., AUQUIER, P., LANCON, C., LEPLÉ, A., SIMON-ABBADI, S. & GUELFÉ, J.D. (2000). Overview of measures of quality of life among persons with schizophrenia (in French). *Encephale*, 26, 35–41.
- SKANTZE, K., MALM, U., DENCKER, S.J., MAY, P.R.A. & CORRIGAN, P.W. (1992). Comparisons of quality of life to standard of living in schizophrenic outpatients. *British Journal of Psychiatry*, 161, 797–801.
- SLADE, M., PHELAN, G., THORNICROFT, G. & PARKMAN, S. (1986). The Camberwell Assessment of Need (CAN): comparison of assessments by staff and patients of the needs of the severely mentally ill. *Social Psychiatry & Psychiatric Epidemiology*, 31, 109–113.
- STOKER, M.J., DUNBAR, G.C. & BEAUMONT, G. (1992). The Smithkline Beecham 'Quality of Life' Scale: a validation and reliability study in patients with affective disorders. *Quality of Life Research*, 1, 385–395.
- UNITED NATIONS (1990). *Human development report 1990: development programme*. Oxford: Oxford University Press.
- VON ZERSSEN, D. (1986). Clinical Self-Rating Scales (CSr-S) of the Munich Psychiatric Information System (Psych IS, Munich). In: N. SARTORIUS & T.A. BANS (Eds), *Assessment of depression*. Berlin: Springer.
- WARNER, R., DE GIROLAMO, G., BELELLI, G., BOLOGNA, C., FIORITTI, A. & ROSINI, G. (1998). The quality of life of people with schizophrenia in Boulder, Colorado, and Bologna, Italy. *Schizophrenia Bulletin*, 24, 559–568.
- WING, J.K., CURTIS, R.H. & BEEVOR, A.S. (1996). *Health of the Nation Outcome Scales. Glossary for HoNOS Score Sheet*. London: The Royal College of Psychiatrists.