Journal of European Psychology Students, Vol. 2, 2010

Functioning is the cornerstone of life

Assessing chronic impairment in social functioning

Mark Patrick Roeling
Tilburg University, The Netherlands
Contact: M.P.Roeling@uvt.nl

Abstract

Impairment in social functioning is the fundament of almost all diagnoses of psychopathology. Intensive research has been performed associating clinical disorders with social dysfunctioning. As a result, psychopathology nowadays is not only defined by symptoms, but also by the level of impairment. To measure social functioning in patients with a clinical disorder, a large diversity of instruments has been designed. This paper describes which disorders have the highest negative influence on social functioning and aims to provide an overview of instruments that can be used to measure social (dys)functioning. Finally several implications are discussed and suggestions for future research are proposed.

Introduction

Impaired functioning is a defining criterion for mental disorders and thus also for psychopathology. The ability to maintain relationships with friends or perform work are important dimensions that shape social functioning. Therefore it seems obvious that the definition of psychopathology also depends on the presence of an impairment in social functioning.

The word functioning derives from the Latin word functus and literally means: to perform or to operate. According to Tyrer and Casey (1993), in psychiatry, social functioning is defined as; "the level at which an individual functions in his or her social context, such function ranging between self preservation and basic living skills to the relationship with others in society" (p. 8).

Mental disorders are known as disturbances which cause clinically significant distress or impairment in social, occupational, and/or other important areas of functioning (American Psychiatric Association [APA], 2000). This review aims to examine the kind of psychopathology that leads toward such impairment and how the level of dysfunctioning is to be assessed. Furthermore this review will present an overview of diagnostic instruments (questionnaires) used to quantify the level of social functioning in patients.

Methods

In this literature review scientific publications and books were identified through the use of the Medline, Psycinfo, and Pubmed databases. Publications were specifically searched with the following key words: functioning and Social and Axis I (*226 publications*); GAF and Functioning and Social (*151 publications*); GAF and Autonomy (*2 publications)*; Social Functioning and Clinical disorders *(4216)* and Axis (*129 publications*); Autonomy and Clinical disorders (*47 publications*); Autonomy and Axis I (*12 publications*); Social and Psychiatry (*23 publications*); (title words)

social functioning and (all fields) clinical disorders (*48 publications*).

Books were searched for in the above mentioned databases with the following key words: Social Functioning, Psychiatry, Psychopathology, GAF, Autonomy, Functioning, Psychological Functioning, Quality of Life. In total, 25 books and dissertations were identified. Some more well known sources as the DSM-IV-TR and the ICD-10 were used for their definitions and criteria. Based on their abstract, title, usage of instruments to quantify social functioning, 59 publications were selected. The keywords social functioning, clinical disorders or invalidity were important inclusion criteria for publications.

Results

History

Social functioning started gaining scientific interest in the field of clinical psychology since 1950, just after World War II. At the beginning, clinicians mainly emphasised on the taxation and classification of diseases and focused on decreasing the rate of mortality, but over time the notion of a patient experiencing an impairment in functioning as a result of psychopathology became apparent (De Jong, 1999). With the development and evolvement of the field of general medicine, mortality rates among patients declined significantly, on the other hand, an entire new population of patients with a chronic impairment arose. Often when patients were discharged from hospital, symptoms such as the inability to maintain relationships, turned out to be chronic rather than an acute. These disabilities can be interpreted as manifestations of the psychopathology bound to the social context and could also be called "handicap". This chronic impairment, resulting from mental disorders led the field of psychology to become aware of the fact that the consequences of clinical disorders, and therefore the consequences of psychopathology, are to be considered long lasting constraints on the level of social functioning: preventing patients from recovering to their premorbid state and amplifying several long winded problems in functioning; resulting in chronic invalidity (De Jong, 1999; Hengeveld & Van Balkom, 2005).

Social functioning and clinical disorders

The diagnosis of most of the disorders found in the Text Revised (2000) version of the Diagnostic and Statistical Manual of Mental Disorders of the American Psychiatric Association (APA) relies on the presence of a mental disorder, causing a significant impairment in social, occupational, and/or other important areas of functioning. When there exists no direct biological background for the psychopathology, the experience and problems in social contacts and adjustment of a patient is considered to be of the essence in making a diagnosis. In clinical practice it is common to base a diagnosis on the patient's subjective experience(s) of his complaints and psychological symptoms, instead of on the analysis of physiological symptoms with neuro-imaging, blood analysis, and other methods. This creates the possibility to base the diagnosis on the extent to which the level of social functioning is decreased, but the subjectivity of this procedure can pose a risk for the validity and reliability (Drenth & Sijtsma, 2006; Tyrer & Casey, 1993). To overcome this problem one could use instruments which do not emphasize the expressions and experiences of a patient, but are focused on the judgment of the specialist.

Every now and then the Lancet publishes a Global Burden of Disease Study discussing a large diversity of diseases on a scale indicating the rate of impairment of the disabilities (disability adjusted life years). In the upper 30, three diseases were mental disorders; the unipolar major depression (#4), the bipolar disorder (#22) and schizophrenia (#26). In 2004 this index was confirmed in an update of the World Health Organization (Murray & Lopez, 1997a; 1997b; World Health Organisation [WHO], 2004). The disorders mentioned above all have in common that in their diagnostic criteria, they all share the criterion that the pathology should result in clinically important impairments in social and occupational functioning or significant suffering (APA, 2000; Hengeveld & Koerselman, 2005). In the literature, the mental disorders associated with the highest rate of impairment in social functioning are mood disorders, psychotic disorders, and stress related disorders/anxiety disorders (Stewart et al., 1988; Arolt, Fein, Driessen, Dorlöchter, & Maintz, 1998; Calvocoressi, Libman, Vegso,

McDougle, & Price, 1998; Hirschfeld et al., 2000; Hilsenroth et al., 2000; Moos, Nicol, & Moos, 2002; Startup, Jackson, & Bendix, 2002; Torres, Mendez, Merino, & Moran, 2002; Hay, Katsikitis, Begg, Da Costa, & Blumenfeld, 2003; Gaite et al., 2005; Rytsälä et al., 2005).

Mood disorders. The first group of mental disorders negatively influencing social functioning are the mood disorders; impairing feelings concerning the self and the environment. Mood disorders can be separated in bipolar- and unipolar disorders, which can be further divided into other subtypes. Depressive disorders are characterized by difficulties in experiencing emotions, resulting in feelings of negativity in which the duration and the sadness are not in proportion with each other. The bipolar disorder consists of one or more manic episodes of mixed episodes, often combined with a major depressive episode (APA, 2000). In 1921 the German scientist Kraepelin identified a variable behavioural pattern of symptoms causing periods of sadness interchanged with periods of strong activity of his patients. He used the words "depression" and "manic" to describe that psychopathology. Functioning problems resulting from bipolar disorders are to be found in the management of relations, the lack of judgement and the patients receiving too little or no treatment; bipolar patients are often diagnosed later compared to unipolar patients, and this pathology is often underestimated (Goodwin & Jamison, 1990; Kupka & Nolen, 1999). In bipolar disorders, patients seem to have at least some kind of insight in their mental state, almost two third of the bipolar patients indicate themselves that their occupational functioning is influenced negatively through their disorder (Hengeveld & Van Balkom, 2005; Suppes, Leverich et al., 2001; Suppes, Swann et al., 2001)., scientists originally thought that these patients' problems in social functioning resulted from personality related pathology (comorbid axis 2 disorders). But in 1995, a study proved this to be wrong (Evans et al., 1995) suggesting that the impairment in social functioning due to a dysthymic depression derives from the symptoms related to the depression itself.. Additionally, the impairment resulting from a double depression (combination of dysthymic depression and major depressive disorder) is more severe than a single dysthymic depression or major depressive episode (Hays et al., 1995; Hischfeld et al., 2000; Leader & Klein, 1996; Stewart et al., 1988). Long lasting depressions often result in a loss of social contacts, and there is a strong association between the quality of family functioning and the severity of the depressive symptoms. This association together with an early start of the pathology and the number of hospitalisations increases the risk of suicide and suicidal ideation (Keitner, Ryan, Miller, & Zlotnick, 1997; McDermut, Miller, Solomon, Ryan, & Keitner, 2001). Furthermore, a mood disorder is often accompanied with several catalyzing (not-symptomatic) risk factors; age, gender, financial consequences, housing problems, being unemployed, major life events (eg. death, divorce) and loneliness. These factors can all become a problem for social functioning even without the occurrence of a disorder or long after the occurrence of a disorder (Arolt et al., 1998; Rytsälä et al., 2005). On the other hand, almost half of the patients with a mood disorder experiences a decrease in symptom-severity within a period of twelve weeks, enhancing full remission (and reaching the premorbid level of functioning).

Psychotic disorders. Among psychotic disorders, schizophrenia is the disorder associated with the lowest scores on social functioning and quality of life of all mental disorders (De Jong et al., 1985; Foldemo, Gullberg, Ek, & Bogren, 2005; Gaite et al., 2005; Hengeveld & Van Balkom, 2005; Moos et al., 2002; Murray & Lopez, 1997a; Ritsner, Kurs, Ratner, & Gibel, 2005; Sim, Mahendran, & Chong, 2005; Svirskis et al., 2007; Torres et al., 2002; Voges & Addington, 2005; Wittchen & Jacobi, 2005). Schizophrenia is characterized mainly by delusions, hallucinations, and catatonic behaviour. One of the areas most affected negatively by schizophrenia is the management of relations and occupational functioning. Patients tend to isolate themselves, develop disorganization of speech, (several) affective disorders, and the majority of patients is not able to perform any work. As with most disorders, the level of social functioning heavily depends on the severity of symptoms which significantly affect other relations; making schizophrenia a burden for primary caretakers and partners (Tyrer & Casey, 1993; APA, 2000). The main problem affecting social functioning seems to be the disability to recognise emotions, and

patients' poor insight in the fact that they have a psychotic illness. Pharmacological treatment seems to be useful in 70% of the patients, suppressing the symptoms within ten weeks. Although medication is affordable, it is often long subscribed (>5 years) and antipsychotic medicines are well known for their undesirable side effects (Davis, 2006; Freedman et al., 2006; Hengeveld & Van Balkom, 2005).

Stress related disorders/Anxiety disorders. The third group of clinical disorders associated with a poor quality of social functioning are the stress-related disorders and anxiety disorders. In phobias, the impairment may result from an indirect factor: avoidance. The relation can be displayed as: fear/anxiety → avoidance → impairment in functioning. Patients with a panic disorder or agoraphobia tend to avoid social relations (shopping, public statements, working, bringing the children to school, etc.) making them dependent of the care of a partner (Hengeveld & Van Balkom, 2005). The care may reduce the symptoms on the short term which may improve the autonomy of a patient, however, on the long term the situation will tend to be stressful for the caregiver, causing relational problems. Instead of avoidance, a generalized anxiety disorder seems to evoke the opposite. Contrary to avoiding all kinds of anxiety-related feelings, the patient seems to worry about several things without any reason or immediate cause, making it possible to develop several physical complaints. Although stress- and anxiety disorders are not mentioned in the Global Burden of Disease study (Murray & Lopez, 1997a), they have the highest prevalence in our society, and considerable comorbidity (Sytema, Ormel, & Oldehinkel, 1999).

Instruments measuring social functioning

Psychological assessment is critical for the understanding of human behaviour and the (statistical) comparison of thoughts, emotions, traits and states. When scientists discovered the severity and nature of the symptoms correlated highly negative with the level of social functioning, clinicians noticed the negative consequences of a disorder could not always be completely treated or cured. This understanding nurtured the development of an entire (fifth) axis in the Diagnostic and Statistical Manual of the APA to assess the level of social functioning. In the most recent version of the DSM this axis mainly consists of three unidimensional scales: the Global Assessment of Functioning (GAF) scale, the Social and Occupational Functioning Scale (SOFAS), and the Global Assessment of Relational Functioning Scale (GARF).

The GAF can be used to indicate overall social functioning and to inquire the effectiveness of a certain treatment or the progress of a patient (Tungström, Söderberg, & Armelius, 2005). An earlier version of the GAF: the Global Assessment Scale, was designed by Luborsky in 1962 for the quantification of the level of impairment resulting from a mental disorder. Originally in the DSM-III-R, the GAF scale ranged from 1 - 10 points. From this, the GAF evolved via a scale ranging from 1-90 to a scale from 1-100 points. A low score (<10) indicates a severe impairment in social functioning (minimal personal hygiene, unable to function without harming self or others, etc.) and a score above 90 indicates a superior level of functioning. A score of 0 indicates a lack of adequate information (APA, 1987; Cicchetti & Cohen, 2006). Over the years, the scale has been subject to different studies examining its psychometric qualities, and the GAF seems to have satisfactory reliability and good validity. One of the main disadvantages of the GAF is that the scale includes both symptomatology and the level of functioning in one number, possibly resulting in a low GAF-score in patients which actually have a high level of functioning, but carry the burden of a single very severe symptom.

In order to solve this problem and to provide scales that are able to give an numeric expression to more specific dimensions of functioning, namely occupational (work-related) functioning and relational (interpersonal) functioning, the APA introduced the SOFAS and GARF in the revision of the DSM-IV in 2000. The GARF can be used to indicate an overall judgement of the functioning of a family or other ongoing relationship on a hypothetical continuum ranging from competent, optimal relational functioning to a disrupted, dysfunctional relationship (APA, 2000). The SOFAS focuses exclusively on the individual's level of social and occupational functioning and is not directly influenced by the overall severity of the individual's psychological symptoms. The

scale also considers impairments in social and occupational functioning due to general medical conditions. Both instruments have been examined intensively on their (face and construct) validity and reliability, both scales have good scores on the mentioned aspects (Bosc, Dubini, Polin, 1997; Hilsenroth et al., 2000; Moos, McCoy, & Moos, 2000; Hay et al., 2003; Tungström et al., 2005).

Although the DSM-IV-TR provides three scales that are designed to indicate overall functioning, work related (occupational) functioning, and (relational) interpersonal functioning, these scales are unidimensional and therefore unable to provide an indication of other dimensions of social functioning (eg. leisure activities, familial functioning, relations with significant others, etc.). To provide instruments that take these dimensions into account, almost forty questionnaires were developed in the last decades (displayed in Table A1 to D1). These are divided in general scales for measurement of social functioning for administration to subjects or informants (Table A1), scales for social functioning that primarily measure social performance (Table B1), rating scales for special purposes (Table C1), and interview measures for social attachment and support (Table D1).

General scales for measurement of social functioning for administration to subjects or informants (Table A1) are multidimensional instruments that provide an indication of overall social functioning and associated subscales. Among the instruments included in this part of the figure are the GAF (APA, 2000), the Social Functioning Questionnaire (Tyrer et al., 2005), the Levels of Functioning Scale (Strauss & Carpenter, 1972), and the Social Adjustment Inventory (Berger et al., 1964). These instruments are multidimensional and measure more than one aspect of social functioning.

In table B1, scales of social function that primarily measure social performance are summarized. This category also contains the Social Functioning Scale of Birchwood (1983), which is one of the most commonly used and validated instruments that measures social performance. Other instruments are the Social Adjustment Scale and the Structured and Scaled Interview to Assess Maladjustment (Paykel, Weismann, Prusoff, & Tonks, 1971; Gurland, Yorkston, Stone, Frank, & Fleiss, 1972). The latter is used mainly in studies involving psychotic patients. All instruments listed in this table are multidimensional. The largest instrument is the Social Role Adjustment Instrument which is a semi-structured interview consisting of 200 items, giving the interviewer the possibility to adjust the interview to a particular case. This adjustability of semi-structured interviews provides a more reliable and solid instrument that better 'fits' the patient (Cohler, Woolsey, Weiss, & Grunbaum, 1968).

Among the rating scales for special purposes (Table C1) are the Personal Resources Inventory (Clayton & Hirschfeld, 1977) that assesses social functioning in a defined period and the General Health Questionnaire which is a broader 60-item instrument that also addresses social functioning (Goldberg, 1972). A large semi-structured instrument in this section is the Social Behaviour Assessment Schedule consisting of 239 items that are best used to assess function or behaviour over the past month (Platt, Weyman, Hirsch, & Hewett, 1980).

The last subgroup of instruments, displayed in table D1 contains the Interview Measures for Social Attachment and Support. Scales listed here are genuinely focused on the quality of interpersonal relations and social interaction or adaptation. One of the most recent instruments is the Functioning Assessment Short Test by Rosa et al. (2007), which was initially developed for patients with a bipolar disorder. A very detailed and thorough assessment of close relationships is the Self-evaluation and Social Support Schedule of O`Connor and Brown (1984). The most frequently used instrument in this subgroup is the Social Interaction Schedule of Henderson et al. (1978), which provides a complete inquiry of the quality and quantity of a patient's social interactions during the past week.

Discussion

This review aimed to provide an answer to the questions which clinical disorders are associated with the highest impairment in social functioning, and how the level of dysfunctioning can be assessed by providing a full list of questionnaires that can be used to examine social functioning, or specific elements of that concept. A possible limitation

of this paper could be found in the mere fact the author did not test the different measurements, and therefore cannot state which of the instruments is most suitable to measure social functioning in a specific situation or psychopathology. Also, this paper does not provide a meta-analytical overview of the appropriateness of the different instruments, therefore no effect size could be determined, and no genuine (empirical) separation can be made between the different instruments listed in the appendix.

Because of the increase in our understanding how mental disorders influence the way we function, new theories, concepts and definitions are quite commonly created. Such a novel approach can be found in the American Medical Association's (AMA) handbook; Guides to the Evaluation of Permanent Impairment (Rondinelli et al., 2009). It contains a special chapter informing how to assess the level of permanent impairment resulting from a mental disorder. The AMA quantifies the level of impairment by using a median score of three familiar questionnaires; the Brief Psychiatric Rating Scale (BPRS)(Overall & Gorham, 1962), the Psychiatric Impairment Rating Scale (PIRS)(Parmegiani. Lovell, Skinner, & Milton, 2001), and the GAF. This combination provides a measure of social functioning apart from the severity of the symptoms (PIRS), an indication of social functioning in relation to the severity of the symptoms (GAF), and an examination of the symptoms of a disorder without any interest in the level of social functioning (BPRS) (Rondinelli et al., 2009; Drenth & Sijtsma, 2006). With this method, the AMA combines the three questionnaires to provide a full indication of the level of impairment (symptoms, functioning, and both). The additional advantage of the three instruments is that they are intensively used in a large diversity of studies and therefore are well known, validated and reliable, and can be administered in a relative short amount of time. A disadvantage of the above mentioned questionnaires is that the clinician should be familiar with the use of the DSM-IV. This integration of instruments to completely assess the full range of impairment can be found in several recent studies and seems to become standard for the future (eg. Rosa et al., 2007).

Another upcoming concept is quality of life. Social functioning is obscured by the concept of quality of life, which does not only address the social invalidity of the patient but also focuses on the patient's perception of his or her level of social functioning. Quality of life therefore employs a broader scope compared to social functioning and includes physical health, psychological status, independency, social relations, personal beliefs, and relations towards the environment (The WHOQOL Group, 1994; Masthoff & Trompenaars, 2006). In sound with the conclusions of studies that investigate the association between social functioning and clinical disorders, quality of life seems to be negatively affected by psychotic disorders and mood disorders as well (Sim et al., 2005; Günter, Roick, Angermeyer, & König, 2007; Trompenaars, Masthoff, van Heck, de Vries, & Hodiamont, 2007; Svirskis et al., 2007). As a result of this development, the publications involving social functioning seem to decline where the publications concerning quality of life seem to increase. It can be considered important to persevere quality of life becoming a substitute for social functioning, because such a transformation could change the fundamental conceptual perspectives of a disease; an impairment in functioning.

Furthermore, the field of mental disorders has gained more and more interest in the scientific community, leading to an expansion in the number of publications about psychopathology every year. However, because the criteria and definitions of several disorders are relatively recent in comparison to the publications in general medicine, there is a lack of reviews that bind the knowledge and conclusions of the past years together in clear and present articles. Longitudinal studies (rare in social functioning) can offer deeper insight in how psychopathology affects the level of social functioning as the symptoms of a disorder progress or decline. Another product of the increasing interest in mental disorders, especially social functioning, are the many "different" instruments designed to measure social functioning. This may make it difficult to choose and distinct the instruments when designing a study or assessing a patient.

Conclusively, the future assessment of social functioning would be possibly better off with the assistance of more multidimensional patient- and (possibly) age specific instruments. The former can already be observed in recent publications (Rosa et al.,

2007), the latter is not yet integrated in the study of social functioning. Although there are age-group specific versions of quality of life related instruments (eg. the World Health Organisation Quality Of Life – old)(Masthoff & Trompenaars, 2006).

Conclusion

When symptoms of a disease influence the level of functioning of a patient it is important to be able to quantify and measure that influence. Social functioning is important because it tells the clinician something about the situation of the patient and therefore it is important to consider this aspect in the assessment of a patient. Several disorders form impairment in social functioning, the psychopathology with the most negative impact on the level of functioning are mood disorders, psychotic disorders, and stress- and anxiety disorders. After the Second World War, inpatient care changed to outpatient care due to medical improvements. This resulted in the insight that some symptoms of a mental disorder could be chronic, therefore instruments that assessed the influence of those symptoms on social functioning had to be created. Over the years, a lot of instruments have been designed in order to assess social functioning. The use of questionnaires in psychological assessment has several disadvantages; subjectivity and the need of expertise. In the future social functioning will be combined with quality of life, a broader concept that addresses more aspects of the level of functioning of the patient.

References

American Psychiatric Association (1987). DSM III-R Diagnostic and Statistical Manual, 3rd Edition Revised. Washington, DC: American Psychiatric Press.

American Psychiatric Association (2000). Diagnostic and statistical manual of mental disorders. 4th ed. TR. Washington, DC: American Psychiatric Press.

Arolt, V., Fein, A., Driessen, M., Dorlöchter, L., & Maintz, C. (1998). Depression and Social Functioning in General Hospital In-patients. Journal of Psychosomatic Research, 42, 117–126.

Barrabee, R., Barrabee, E. L., & Finesinger, J. E. F. (1955). A normative social adjustment scale. American Journal of Psychiatry, 112, 252-259.

Berger, D. G., Rice, C. E., Sewall, L. G. et al. (1964). The post-hospital evaluation of psychiatric patients; the social adjustment inventory method. Psychiatric Study Projects, 2, 1-30.

Birchwood, M. (1983). Family coping behaviour and the course of schizophrenia. Dissertation University of Birmingham.

Bosc, M., Dubini, A., & Polin, V. (1997). Development and validation of a social functioning scale, the Social Adaptation Self-evaluation Scale. European Neuropsychopharmacology, 7, 57-70

Branch, L.G., & Jette, A. M. (1981). The Framingham Disability Study. 1. Social disability among the aging. American Journal of Public Health, 71, 1202-1210.

Brugha, T. S., Sturt, E., McCarthy, B., Potter, J,. Wykes, Y., & Bebbington, P. E. (1987). The Interview Measure of Social Relationships: the description and evaluation of a survey instrument for assessing personal social resources. Social Psychiatry, 22, 123-128.

Calvocoressi, L., Libman, D., Vegso, S. J., McDougle, C. J., & Price, L. H. (1998). Global functioning of inpatients with obsessive-compulsive disorder, schizophrenia, and major depression. Psychiatric Services, 49, 379-381.

Cicchetti, D., & Cohen, D. J. (2006). Developmental psychopathology (2nd ed.). John Wiley and Sons.

Clare, A. W., & Cairns, V. E. (1978). Design, development and use of a standardized interview to assess social maladjustment and dysfunction in communicatie studies. Psychological Medicine, 8, 589-604.

Clayton, P., & Hirschfeld, R. (1977). Personal Resources Inventory (PRI). St. Louis: Washington University School of Medicine.

Cohler, B., Woolsey, S., Weiss, J., & Grunbaum, H. (1968). Child rearing attitudes among mothers volunteering and revolunteering for a psychological study. Psychological Reports, 23, 603-612.

Davis, J.M. (2006). The choice of drugs for schizophrenia. New England Journal of Medicine, 354, 518-520.

De Jong, A. (1999). Onderzoek naar allerdaagse maatschappelijke gevolgen van psychiatrische ziekten; van symptomatologie naar kwaliteit van leven. In A. de Jong, W. van den Brink, J. Ormel & D. Wiersma (Eds.), Handboek Psychiatrische Epidemiologie (pp. 111-126). Utrecht: Elsevier/De Tijdstroom.

De Jong, A., Giel, R., Sloof, C. J., & Wiersma, D. (1985). Social disability and outcome in schizophrenic patients. The British Journal of Psychiatry, 147, 631-636

De Jong, A., & Van der Lubbe, P.M. (2001). Groningen Questionnaire about Social Behaviour: Self-report questionnaires to determine problems in interpersonal functioning. Groningen: Rob Giel Onderzoekcentrum.

Derogatis, L.R. (1976). Scoring and procedures: Manual for PAIS. Clinical Psychometrics Research, Baltimore.

Drenth, P. J. D., & Sijstma, K. (2006). Testtheorie: Inleiding in de theorie van de psychologische test en zijn toepassingen. Houten: Bohn Stafleu van Loghum.

Dunn, M., O´Driscoll, C., Dayson, D., Wills, W., & Leff, J. (1990). The TAPS Project, 4: An observational study of the social life of long-stay patients. British Journal of Psychiatry, 157, 842-848.

Endicott, J., Spitzer, R. L., Fleiss, J. L., & Cohen, J. (1976). The global assessment scale: a procedure for measuring the overall severity of psychiatric disturbance. Archives of General Psychiatry, 33, 766-771.

Evans, S., Cloitre, M., Kocsis, J. H., Keitner, G. I., Holzer, C. P., & Gniwesch, L. (1995). Social-vocational adjustment in

unipolar mood disorders: results of the DSM-IV field trial. Journal of Affective Disorders, 38, 73-80.

Foldemo, A., Gullberg, M., Ek, A. K., & Bogren, L. (2005). Quality of life and burden in parents of outpatients with schizophrenia. Social Psychiatry and Psychiatric Epidemiology, 40, 133–138.

Frank, E., & Kupfer, D. J. (1974). The KDS-15: A marital questionnaire. Western Psychiatric Institute and Clinic, University of Pittsburgh, Pittsburgh.

Freedman, R., Carpenter, W. T., Davis, J. M., Goldman, H. H., Tamminga, C. A., & Thomas M. (2006). The costs of drugs in schizophrenia. American Journal of Psychiatry, 162 (12), 2029-2031.

Gaite, L., Vázquez-Barquero, J. L., Herrán, A., Thornicroft, G., Becker, T., Sierra-Biddle, D., Vázquez-Bourgon, J. (2005). Main determinants of Global Assessment of Functioning score in schizophrenia: a European multicenter study. Comprehensive Psychiatry, 46, 440– 446.

Goldberg, D. (1972). The detection of psychiatric illness by questionnaire. Maudsley Monograph No. 21. London: Oxford University Press.

Goodwin, F. K., & Jamison, K. R. (1990). Manic-depressive illness. New York: Oxford University Press.

Günter, O., Roick, C., Angermeyer, M. C., & König, H. H. (2007). The EQ-5D in alcohol dependent patients: Relationships among health-related quality of life, psychopathology and social functioning. Drug and Alcohol Dependence, 86, 253–264.

Gurland, B. J., Yorkston, N. J., Stone, A.R., Frank, J. D., & Fleiss, J. L. (1972). The Structured and Scaled Intreview to Assess Maladjustment (SSIAM): description, rationale and development. Archives of General Psychiatry, 27, 259-264.

Hay, P., Katsikitis, M., Begg, J., Da Costa, J., & Blumenfeld, N. (2003). A two-year follow-up study and prospective evaluation of the DSM-IV Axis V. Psychiatric Services, 54, 1028-1030.

Hays, R. D., Wells, K. B., Sherbourne, D. C., Rogers, W., & Spritzer, K. (1995). Functioning and well-being outcomes of patients with depression compared with chronic general medical illnesses. Archives of General Psychiatry, 52, 11-19.

Henderson, S., Byrne, D. G., Duncan-Jones, P., Adcock, S., Scott, R., & Steele, G. D. (1978). Social bonds in the epidemiology of neurosis: a preliminary communication. British Journal of Psychiatry, 132, 463-466.

Henderson, S., Duncan-Jones, P., Byrne, D. G., & Scott, R. (1980). Measuring social relationships: The Interview Schedule for Social Interaction. Psychological Medicine, 10, 1-12.

Hengeveld, M. W., & Koerselman, F. (2005). Psychopathologie. In M.W. Hengeveld & A. J. L. M. van Balkom (Eds.), Leerboek Psychiatrie (pp. 21-30). Utrecht: De Tijdstroom.

Hengeveld, M. W., & Van Balkom, A. J. L. M. (2005). Leerboek psychiatrie. Utrecht: De Tijdstroom.

Hirschfeld, R. M. A., Montgomery, S. A., Keller, M. B., Kasper, S., Schatzberg, A. F., & Möller, H. J., … Bourgeois, M. (2000). Social functioning in depression: A review. Journal of Clinical Psychiatry, 61, 268-275.

Hilsenroth, M. J., Ackerman, S. J., Blagys, M. D., Baumann, B. D., Baity, M. R., & Smith, S. R. …. Holdwick, D.J. (2000). Reliability and validity of DSM-IV Axis V. American Journal of Psychiatry, 157, 1858–1863.

Holohan, C.J., & Moos, R.H. (1983). The quality of social support: measures of family and work relationships. British Journal of Clinical Psychology, 22, 157-162.

Katz, M. M., & Lyerly, S. B. (1963). Methods for measuring adjustment and social behaviour in the community. Rationale, description, discriminative validity and scale development. Psychological Reports, 13, 503-535.

Keitner, G. I., Ryan, C. E., Miller, I. W., Zlotnick C. (1997). Psychosocial factors and the longterm course of major depression. Journal of Affective Disorders, 44, 57-67.

Kraepelin. E. (1976). Manic-depressive insanity. New York: Arno Press.

Kupka, R. W., & Nolen, W. A. (1999). Bipolaire stoornissen. In A. de Jong, W. van den Brink, J. Ormel, & D. Wiersma (Eds.), Handboek Psychiatrische Epidemiologie. (pp. 281-299). Utrecht: Elsevier/De Tijdstroom.

Leader, J. B., & Klein, D. N. (1996). Social adjustment in dysthymia, double depression and episodic major depression. Journal of Affective Disorders, 39, 91-101.

Linn, M. W., Sculthorpe, W. B., Evje, M., Slater, P. H., & Goodman, S. P. (1969). A Social Dysfunctioning Rating Scale. Journal of Psychiatric Research, 6, 299-306.

Luborsky, L. (1962). Clinician's judgment of mental health. Archives of General Psychiatry, 7, 407–417.

Masthoff, E. D., & Trompenaars, F. J. (2006). Quality of life in 500 psychiatric outpatients. Dissertation Tilburg University.

McDermut, W., Miller, I. W., Solomon, S., Ryan, S. E., & Keitner, G. I. (2001). Family functioning and suicidality in depressed adults. Comprehensive Psychiatry, 42 (2), 96-104.

McDowell, I., & Newell, C. (1987). Measuring health: A guide to rating scales and questionnaires. New York: Oxford University Press.

McFarlane, A. H., Neale, K. A., Norman, G. R., Roy, R. G., & Streiner, D. L. (1981). Methodological issues in developing a scale to measure social support. Schizophrenia Bulletin, 7, 90-100.

Moos, R. H., McCoy, L., & Moos, B. S. (2000). Global Assessment of Functioning (GAF) ratings: Determinants and role as predictors of one-year treatment outcomes. Journal of Clinical Psychology, 56, 449-461.

Moos, R. H., Nichol, A. C., & Moos, B. S. (2002). Global Assessment of Functioning ratings and the allocation and outcomes of mental health services. Psychiatry Research, 53, 730–737.

Murray, C. J. L., & Lopez, A. D. (1997a). Regional patterns of disability-free life expectancy and disabilityadjusted life expectancy: Global Burden of Disease Study. Lancet, 349, 1347-1352.

Murray, C. J. L., & Lopez, A. D. (1997b). Global mortality, disability, and the contribution of risk factors: Global Burden of Disease Study. Lancet, 349, 1436–1342.

O'Connor, P., & Brown, G. W. (1984). Supportive relationships: fact of fancy? Journal of Personal and Social Relations, 1, 159-175.

Overall, J.E., & Gorham, D.R. (1962). Brief Psychiatric Rating Scale. Psychological Reports, 10, 799-812.

Parmegiani, J., Lovell, D., Skinner, Y., & Milton, R. (2001). Psychiatric Impairment Rating Scale. Sydney NSW Australia. Retrieved online from http://www.cmspecialists.com.au/PIRS-1.pdf

Paykel, E. S., Weismann, M. M., Prusoff, B. A., & Tonks, C. M. (1971). Dimensions of social adjustment in depresssed woman. Journal of Nervous and Mental Disease, 152, 158-172.

Platt, S., Weyman, A., Hirsch, S., & Hewett, S. (1980). The Social Behaviour Assessment Schedule (SBAS): rationale

contents, scoring and reliability of a new interview schedule. Social Psychiatry, 15, 43-55.

Remington, M., & Tyrer, P. (1979). The Social Functioning Schedule- a brief semistructured interview. Social Psychiatry, 14, 151-157.

Ritsner, M., Kurs, R., Ratner, Y., & Gibel, A. (2005). Condensed version of the Quality of Life Scale for schizophrenia for use in outcome studies. Psychiatry Research, 135, 65– 75.

Rondinelli, R. D., Genovese, E., Katz, R. T., Mayer, T. G., Mueller, K., Ranavaya, M., … Brigham, C.R. (2009). Guides to the Evaluation of Permanent Impairment, sixth edition. Published by the American Medical Association.

Rosa, A. R., Sánchez-Moreno, J., Martínez-Aran, A., Salamero, M., Torrent, C., Reinares, M., ... Vieta, E. (2007). Validity and reliability of the Functioning Assessment Short Test (FAST) in bipolar disorder. Clinical Practice Epidemiology in Mental Health, 3(5).

Rytsälä, H. J., Melartin, T. K., Leskelä, U. S., Sokero, T. P., Lestelä-Mielonen, P. S., & Isometsä, E. T. (2005). Functional and work disability in major depressive disorder. The Journal of Nervous and Mental Disease, 193, 189-195.

Sarason, I. G., Levine, H. M., Basham, R. B., & Sarason, B. R. (1983) Assessing social support: the social support questionnaire. Journal of Personal and Social Psychology, 44, 127-139.

Sheehan, D. V. (1983). Sheehan Disability Scale. In: Handbook of psychiatric measures (pp. 113–115). Washington DC: American Psychiatric Association.

Sim, K., Mahendran, R., & Chong, S. A. (2005). Health-related quality of life and psychiatric comorbidity in first episode psychosis. Comprehensive Psychiatry, 46 , 278– 283.

Startup, M., Jackson, M. C., & Bendix, S. (2002). The concurrent validity of the Global Assessment of Functioning (GAF). British Journal of Clinical Psychology, 41, 417–422.

Stewart, J. W., Quitkin, F. M., McGrath, P. J., Rabkin, J. G., Markowitz, J. S., Tricamo, E., & Klein, D. F. (1988). Social functioning in chronic depression: effect of 6 weeks of antidepressant treatment. Psychiatry Research, 25, 213-222.

Strauss, J. S., & Carpenter, W. T. (1972). The prediction of outcome in schizophrenia: characteristics of outcome. Archives of General Psychiatry, 27, 739-746.

Suppes, T., Leverich, G. S., Kech, P. E., Nolen, W. A., Denicoff, K. D., Altshuler, L. L., … Post, R.M. (2001). The Stanley Foundation Bipolar Treatment Outcome Network. II. Demographics and illness characteristics of the first 261 patients. Journal of Affective Disorders, 67, 45-59.

Suppes, T., Swann, A. C., & Dennehy, E. B., Habermacher, E. D., Mason, M., Crismon, M. L., … Altshuler, K.Z. (2001). Texas Medication Algorithm Project: development and feasibility testing of a treatment algorithm for patients with bipolar disorder. Journal of Clinical Psychiatry 62 (6), 439-347.

Svirskis, T., Korkeila, J., Heinimaa, M., Huttunen, J., Ilonen, T., Ristkari, T., … Salokangas, K.R. (2007). Quality of life and functioning ability in subjects vulnerable to psychosis. Comprehensive Psychiatry, 48, 155–160.

Sytema, S., Ormel, J., & Oldehinkel, A.J. (1999). Angststoornissen. In A. de Jong, W. van den Brink, J. Ormel, & D. Wiersma (Eds.), Handboek psychiatrische epidemiologie (pp. 329-346). Utrecht: Elsevier/De Tijdstroom.

The WHOQOL Group (1994). The development of the World Health Organisation quality of life assessment instrument (the WHOQOL). In J. Orley and W. Kuyken (Eds.), Quality of Life Assessment: International perspectives (41-60). Springer-Verlag Telos.

Torres, A., Mendez, L. P., Merino, H., & Moran, E. A. (2002). Improving social functioning in schizophrenia by playing the train game. Psychiatric Services, 53, 799-801.

Trompenaars, F. J., Masthoff, E. D., Heck, G. L. van, Vries, J. de, Hodiamont, P. P. G. (2007). Relationships between social functioning and quality of life in a population of Dutch adult psychiatric outpatients. International Journal of Social Psychiatry, 53, 36–47.

Tungström, S., Söderberg, P., & Armelius, B. A. (2005). Relationship between the Global Assessment of Functioning and other DSM Axes in routine clinical work. Psychiatric Services, 56, 439-443.

Tyrer, P. (1990). Personality disorder and social functioning. In D. F. Peck and C.M. Shapiro (Eds.), Measuring Human Problems, a Practical Guide (pp. 119-142). Wiley, Chichester.

Tyrer, P., & Casey, P. (1993). Social function in psychiatry; The hidden axis of classification exposed. Petersfield, UK: Wrightson Biomedical Publishing LTD.

Tyrer, P., Nur, U., Crawford, M., Karlsen, S., McLean, C., Rao, B., … Johnson, T. (2005). The Social Functioning Questionnaire: a rapid and robust measure of perceived functioning. International Journal of Social Psychiatry. 51:265-275.

Voges, M., & Addington, J. (2005). The association between social anxiety and social functioning in first eipsode psychosis. Schizophrenia Research, 76, 278-292.

Weissman, M. M., & Bothwell, S. (1976). The assessment of social adjustment by patient self-report. Archives of General Psychiatry, 33, 1111-1115.

Wittchen, H. U., & Jacobi, F. (2005). Size and burden of mental disorders in Europe: a critical review and appraisal of 27 studies. European Neuropsychopharmacology, 15(4), 357-76.

World Health Organisation (2004). The global burden of disease, 2004 Update. Retrieved from: http://www.who.int/healthinfo/global_burden_disease/GBD_report_2004update_full.pdf

Appendix A

Table A1
General scales for measurement for social function for administration to subjects or informants.

Scale:	Authors:	Main features:
Katz Adjustment Scales (KAS)*, ***	Katz & Lyerly (1963)	205-items rated by patients and relatives on 4-point scales
Social Adjustment Inventory ***	Berger et al. (1964)	33-item rated by close informant on 6-point scale
Social Dysfunction Rating Scale (SDRS) *	Linn et al. (1969) Mc Dowell & Newell (1987)	21-item rated on a 6-point scale administered as semistructured interview. (15-40 min.)
Levels of Function Scale *	Strauss & Carpenter (1972)	4-item scale. Covering both social adjustment and symptoms (20 min.)
KDS-15 *,***	Frank & Kupfer (1974)	80-item scale to assess marital functioning (40 min.)
Psychosocial Adjustment to Illness Scale (PAIS)	Derogatis (1976)	Seven sections involving 45 questions covering attitudes to health care
Social Adjusment Scale (SAS-SR)*	Weissman & Bothwell (1976)	42-item scale, developed from interview version SAS (see below) (20 min.)
Global Assessment of Functioning Scale (GAS)**	Endicott et al (1976)	Global scale assessed by interviewer, integral part of DSM-IIIR/-IV/-IVTR
Social Functioning Schedule (SFS)	Remington & Tyrer (1979)	Record of social function in work/task, money, personal, social, and childcare relationships and spare time (20 min.)
Standardised Interview to Assess Maladjustment *	Clare & Cairns (1978)	Six sections covering 42 items on 4-point scales (45 min.).
Social Functioning Questionnaire (SFQ) *	Tyrer (1990) Tyrer et al. (2005)	8-item scale each scored on 4 points (5 min.)
Groningen Social Behaviour Questionnaire-100 GSBQ-100	De Jong & Van der Lubbe (2001)	Scale with 100 items addressing social functioning, independent of the severity of symptoms. 4-point scale. 15 dimensions.

*self-rating/self-report, **observation, ***informant (Tyrer & Casey, 1993)

Appendix B

Table B1
Scales for social functioning that primarily measure social performance.

Scale:	Authors:	Main features:
Normative Social Adjustment Scale (NSAS) **	Barrabee et al. (1955)	27-item, 5-point scale (60 min.)
Social Role Adjustment Instrument (SRAI) **	Cohler et al. (1968)	Semi-structured interview of 200 items. Specifically to assess women in their adjustment to their roles in society
Structured and Scaled Interview to Assess Maladjustment (SSIAM) *,**	Gurland et al. (1972)	60-item scale, each 11-point. Covering work, social relations, family, marriage, and sex, but also including 15 items rated by the interviewer, including personality strengths (30 min)
Social Adjusment Scale (SAS)**	Paykel et al. (1971)	54-item scale which contains alternative
Social Adjustment Scale Self-Report (SAS-SR)		questions for some items (45-60 min.)
Social Functioning Scale (SFS)*,***	Birchwood (1983)	Records assessment of function and needs in seven areas, primarily used in schizophrenic patients and is most appropriate for this population and others in which basic living skills may be impaired.

*self-rating/self-report, **observation, ***informant (Tyrer & Casey, 1993)

Appendix C

Table C1
Rating scales for special purposes.

Scale:	Authors:	Main features:
Personal Resources Inventory (PRI)*	Clayton & Hirschfeld (1977)	41-item interview assessing best social functioning in a defined period (20 min.)
Social Disability Questionnaire (SDQ)*	Branch & Jette (1981)	A self-report scale useful in surveys of elderly population.
General Health Questionnaire (GHQ)*	Goldberg (1972)	60-item questionnaire (also available in 12-20-28-30 items) with questions that include social functioning
Social Behaviour Assessment Schedule (SBAS)*,***	Platt et al. (1980)	239-item interview schedule that is best used to assess function/behaviour over the past month; includes assessment of impact of behaviour on others

*self-rating/self-report, **observation, ***informant (Tyrer & Casey, 1993)

Appendix D

Table D1
Interview measures for social attachment and support.

Scale:	Authors:	Main features:
Social Interaction Schedule (SIS)*	Henderson et al. (1978)	Assesses all social interactions over the previous seven days (> 60 min.)
The Interview Schedule for Social Interaction (ISSI)*	Henderson et al. (1980)	Similar to SIS but no fixed time interval. Uses a complex system of scoring availability and adequacy of social attachment and integration
Interview Measure of Social Relationships (IMSR)*	Brugha et al. (1987)	Modified version of the SIS which it shortened to include important social contacts only (30 – 60 min.)
Social Relationships Scale (SRS)*,**	McFarlane et al (1981)	Measure of quality of relationships in 6 areas of functioning
Family Relations Inventory (FRI) Work Relations Inventory (WRI)	Holohan & Moos (1983)	Measurement of frequency and quality of relationships within family and work
Social Support Questionnaire*	Sarason et al. (1983)	Measures the number and perceived satisfaction of social relationships
Self-Evaluation and Social Support Schedule (SESS)	O'Connor & Brown (1984)	Detailed assessment of close relationships (may take up to 120 min.)
Social Network Scale	Dunn et al. (1990)	Short interview scale to establish the social network of psychiatric patients with simple measures of both quality and quantity
Functioning Assessment Short Test (FAST) (S)	Rosa et al. (2007)	24-item measuring 6 scales; autonomy, occupational functioning, cognitive functioning, financial matters, interpersonal relations and spare time. Assesses the

		functional impairment in psychiatric patients. Originally 56 items and 10 dimensions
Social Adaptation Self-evaluation Scale (SASS).	Bosc et al. (1997)	21-items for use in clinical trials. Assesses psychosocial functioning in several domains, especially the subjective experience of functioning, motivation and self-perception
Sheehan Disability Scale (S) Social Disability Questionnaire	Sheehan (1983)	Measures the functional impairment in three domains: work/school, social functioning and family life. For patients with panic, anxiety/stress, and depressive symptoms

*self-rating/self-report, **observation, ***informant (Tyrer & Casey, 1993)