Guide to

Assessment Scales in Schizophrenia

3rd edition

Richard Keefe

Springer Healthcare

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Editor
Richard Keefe

Contributors
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Editor

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Mark Taylor, BSc (Hons), MBBS, FRCPsych, FRANZCP, is a full-time clinician and consultant adult psychiatrist and was appointed in 2008 to set up an intensive home treatment service for the city of Edinburgh, which won the Royal College of Psychiatrists' Team of the Year award in 2010. In 2011, his team also won the Scottish Health Awards in the 'Care at Home' category; and were shortlisted finalists in the *Health Service Journal* Innovation in Mental Healthcare awards. Dr Taylor obtained his medical degree from University College London and then gained experience in neurology and general medicine at Guys Hospital, London, before training in psychiatry at the Maudsley Hospital and Institute of Psychiatry, London and the University of Edinburgh. He has previously worked as a consultant psychiatrist in both Glasgow, Scotland, and Melbourne, Australia. Dr Taylor

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Preface

The aim of this guide is to provide clinicians with a single volume to aid in the comprehensive assessment of patients with schizophrenia. It is meant for early phase clinicians as a means to learn the best scales to use in the assessment of various aspects of the illness and for established clinicians as an organizing resource that will enable them to have direct access to many assessment instruments housed in one book.

In the past, rating scales for patients with schizophrenia had been viewed as the domain of researchers or clinical trialists willing to sacrifice patient interaction for standardization of data collection. However, the assessment instruments in this book are being used with increased frequency due to a variety of changes in the administration of care in clinical psychiatry. The use of integrated care pathways, the burgeoning emphasis on payment by results, and the pursuit of evidence-based practice principles encourage the use of standardized instruments in mental health care. Many clinicians find that a structured approach to the assessment of their patients not only helps to organize their patient evaluations, but also helps them keep track of changes across time especially with regard to treatment response. Further, an understanding of how a patient fits within the spectrum of similarly diagnosed patients can have important treatment implications. Finally, rating scales can help a clinician consider broad aspects of a patient's illness that are not usually fully evaluated, especially in areas where his or her training may be limited, such as cognition.

We have included scales measuring all of the crucial aspects of schizophrenia: symptoms, including positive and negative symptoms; depression and suicidality; cognition, including interview-based rating scales and performance-based assessments; functional outcomes such as work function, social function, and independent living; quality of life; side effects of antipsychotic treatment; insight; treatment adherence; substance abuse; and medical comorbidities.

The authors of the chapters were selected on the basis of the international renown of the high quality of their research and clinical work in the specific areas they cover. We are delighted that due to the importance of this work and the necessity of this resource, many of the true leaders of research and clinical work in schizophrenia agreed to participate.

In many cases, the specific rating scale is included in the guide. Due to copyright restrictions of some of the instruments, this was not permitted for all of the rating scales. However, in these cases we have included the source where the specific scale can be obtained.

We hope that this guide is beneficial to those clinicians who utilize it and to the patients who are assessed with the instruments herein.

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1. Symptom rating scales in schizophrenia

Joseph Ventura and Stephen Marder

Standardized psychiatric symptom rating scales were originally developed for research purposes such as in pharmacological clinical trials; however, they can be used by clinicians to reliably document symptoms. Rating scales can be useful tools for establishing the initial levels of symptoms and assessing the response to an intervention. The most useful symptom rating scales provide clinical interview questions with follow-up probes to be used during a 20- to 30-minute semi-structured interview to assess psychopathology. The clinician should draw on all sources of information including direct observation of patient behavior, reports from the patient, observations from nurses, and reports from the patient's family. Psychiatric symptom rating scales differ in the breadth of type of symptoms that can be assessed, but generally use the same format. Each scale has an instructional manual with symptom definitions, a rating scale with anchor point definitions, and a set of standardized interview questions with suggested follow-up probes. The anchor points of a rating scale describe the severity of a particular symptom; for example, on a scale of 1–7, 1 being 'not present,' which represents the absence of psychopathology, ratings of 2 or 3 are considered mild, clinically sub-threshold, or generally within normal limits, while ratings of 4 or 5 are considered at a moderate level and therefore clinically significant. Ratings of 6 or 7 are considered a severe level of psychopathology.

The proper reference group for conducting symptom rating assessments is a group of individuals who are not psychiatric patients, who are living and working in the community, who are not receiving psychiatric medication and, who are relatively free of psychiatric symptoms. As the clinician evaluates patients, he or she should have in mind a group of individuals who are able to function either at work or school, socially or as a homemaker, and at levels appropriate to the person's age and socioeconomic status. Clinicians assessing symptoms should not use other psychiatric patients previously interviewed, especially those with severe symptoms, as the reference standard because this approach will systematically bias ratings toward lower scores. If symptom ratings are to be used for monitoring symptoms over time then selecting an appropriate period or interval for rating symptoms is important; for example, just prior to hospitalization versus following a reasonable course of treatment.

Good interviewing skills, interpersonal rapport, sensitivity to the patient's mental state, and empathy are of paramount importance in obtaining valid ratings of symptoms. The use of empathy

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is critical in helping a patient express difficult and possibly embarrassing experiences. An all too common phenomenon in clinical assessment is the denial or minimization of psychiatric symptoms. For example, patients may deny hearing voices yet can be observed to be whispering under their breath as if in response to a voice. Patients deny their symptoms for a variety of reasons, including fear of being committed, restricted to staying in a hospital, or having their medication increased. Simply recording a patient's negative response to symptom scale items, if denial or distortion is present, will result in invalid and unreliable data. Occasionally, at the time of the interview, the interviewer will have information about the symptoms that the patient is denying. The use of a mild confrontation technique is permissible in an attempt to encourage a patient to disclose accurate symptom information. When an interviewer suspects that a patient may be denying symptoms, soliciting and utilizing information from other sources is absolutely essential in rating symptom psychopathology.

Positive symptom scales

Positive symptoms in schizophrenia include:

- hallucinations (perceptual abnormalities) in one of five senses (auditory, visual, tactile, olfactory, or gustatory);
- delusions (false beliefs), most commonly persecutory, referential, grandiose, or somatic; and
- disorders of thought (speech abnormalities), indicated by speech that is tangential, circumstantial, shows derailment, or is incoherent.

These symptoms are primarily found in the Positive and Negative Syndrome Scale (PANSS) [1], the Brief Psychiatric Rating Scale (BPRS) [2], and the Scale for the Assessment of Positive Symptoms (SAPS) [3], but these instruments also contain negative symptom items particularly the PANSS, which was developed with the goal of giving similar weight to both positive and negative symptoms. If a clinician is interested in comprehensive treatment of a psychotic disorder, then specialized scales for the assessment of negative symptoms should be used adjunctively.

Positive and Negative Syndrome Scale

The PANSS [1] contains 30 items of which seven were chosen to constitute a Positive Symptom Scale, seven items in a Negative Symptom Scale, and the remaining sixteen in a General Psychopathology Scale. The PANSS rates psychopathology on a scale from 1 to 7, 1 being 'absent' and 7 being 'extreme,' through evaluation and observation of:

- behavior (eg, tension, mannerisms and posturing, excitement, and blunting of affect);
- interpersonal behavior during the interview (eg, poor rapport, uncooperativeness, hostility, and impaired attention);
- cognitive–verbal processes (eg, conceptual disorganization, stereotyped thinking, and lack of spontaneity and flow of conversation);
- expressed thought content (eg, grandiosity, somatic concern, guilt feelings, and delusions); and

- response to structured interviewing (eg, disorientation, anxiety, depression, and difficulty in abstract thinking).

A unique feature of the PANSS is the comprehensive evaluation of abstract reasoning. The PANSS contains questions on concept formulation (eg, "How are a train and bus alike?") and proverb interpretation, which are varied in content when using the PANSS for repeated assessment.

For further discussion on the PANSS see Chapter 7.

Brief Psychiatric Rating Scale – 24-item version

The 24-item version of the BPRS [2] contains symptom items that yield a comprehensive rating of major psychiatric symptoms such as anxiety, depression, suicidality, hostility, delusions, hallucinations, disorganized speech, mania, disorientation, and bizarre behavior. One unique feature of the BPRS is the inclusion of an item for assessment of suicidality. Each BPRS item is rated on increasing levels of psychopathology ranging from 1 to 7, with 1 being 'absent' to 7 being 'extremely severe.' The 24-item version of the BPRS contains interview questions, symptom definitions, specific anchor points for rating symptoms, and a detailed 'how to' section for dilemmas that arise in rating psychopathology. The easily understood definitions and anchor point definitions assist the clinician in sensitively eliciting and rating the severity of psychiatric symptoms. The BPRS enables the clinician to conduct a high-quality interview for eliciting and rating the severity of mood and psychotic symptoms in individuals who are often inarticulate or who deny their illness. Four sample BPRS items were selected to provide the clinician with an opportunity to determine the potential usefulness of the full 24-item BPRS for evaluation of psychiatric symptoms. Three of the selected BPRS items are positive symptoms, unusual thought content, hallucinations, and conceptual disorganization, which are most likely to be exhibited in psychiatric patients who are acutely psychotic. The suicidality item from the BPRS is provided because of the clinical relevance for evaluating this potentially lethal behavior in psychiatric patients who are presenting with acute symptoms or during routine evaluation (Figure 1.1) [2].

Scale for the Assessment of Positive Symptoms

The SAPS [3] is a 35-item instrument designed to assess all of the key positive symptoms of psychosis that principally occur in schizophrenia. The SAPS is intended to serve as a complementary instrument to the Scale for the Assessment of Negative Symptoms (SANS). Positive symptoms assessed by the SAPS include hallucinations, delusions, bizarre behavior (including inappropriate affect), and formal thought disorder (disorganization of speech). The SAPS is the most comprehensive scale for the assessment of positive formal thought disorder so the clinician should begin this assessment interview by talking with the patient on a relatively neutral topic for 5–10 minutes in order to observe the patient's manner of speaking and responding. The last symptom item in each major domain of positive symptoms is an overall global rating. This should be a true global rating based on taking into account both the content and the severity of the various types of symptoms observed. Each SAPS item is accompanied by a complete definition as well as detailed anchoring criteria for all six rating points ranging from 0 ('absent') to 5 ('severe').

Figure 1.1 Brief Psychiatric Rating Scale – 24-item version

Conceptual disorganization

Degree to which speech is confused, disconnected, vague or disorganized. Rate tangentiality, circumstantiality, sudden topic shifts, incoherence, derailment, blocking, neologisms, and other speech disorders. Do not rate content of speech.

1 = Not present

2 = Very mild
Peculiar use of words or rambling but speech is comprehensible.

3 = Mild
Speech a bit hard to understand or make sense of due to tangentiality, circumstantiality, or sudden topic shifts.

4 = Moderate
Speech difficult to understand due to tangentiality, circumstantiality, idiosyncratic speech, or topic shifts on many occasions **or** 1 or 2 instances of incoherent phrases.

5 = Moderately severe
Speech difficult to understand due to circumstantiality, tangentiality, neologisms, blocking, or topic shifts most of the time **or** 3–5 instances of incoherent phrases.

6 = Severe
Speech is incomprehensible due to severe impairments most of the time. Many items in this scale cannot be rated by self report alone.

7 = Extremely severe
Speech is incomprehensible throughout interview.

Suicidality

Expressed desire, intent or actions to harm or kill self.

Questions to ask patient:
- Have you felt that life wasn't worth living?
- Have you thought about harming or killing yourself?
- Have you felt tired of living or as though you would be better off dead?
- Have you ever felt like ending it all?

If patient reports suicidal ideation, ask the following:
- How often have you thought about [use patient's description]?
- Did/Do you have a specific plan?

1 = Not present

2 = Very mild
Occasional feelings of being tired of living. No overt suicidal thoughts.

3 = Mild
Occasional suicidal thoughts without intent or specific plan **or** they feel they would be better off dead.

4 = Moderate
Suicidal thoughts frequent without intent or plan.

5 = Moderately severe
Many fantasies of suicide by various methods. May seriously consider making an attempt with specific time and plan **or** impulsive suicide attempt using nonlethal method or in full view of potential saviors.

6 = Severe
Clearly wants to kill self. Searches for appropriate means and time, **or** potentially serious suicide attempt with patient knowledge of possible rescue.

7 = Extremely severe
Specific suicidal plan and intent (eg, "As soon as this happens I will do it by doing X"), **or** suicide attempt characterized by plan patient thought was lethal or attempt in secluded environment.

(continues opposite).

Figure 1.1 Brief Psychiatric Rating Scale – 24-item version (continued)

Unusual thought content

Unusual, odd, strange or bizarre thought content. Rate the degree of unusualness, not the degree of disorganization of speech. Delusions are patently absurd, clearly false or bizarre ideas that are expressed with full conviction. Consider the patient to have full conviction if they have acted as though the delusional belief were true. Ideas of reference/persecution can be differentiated from delusions in that ideas are expressed with much doubt and contain more elements of reality. Include thought insertion, withdrawal, and broadcast. Include grandiose, somatic and persecutory delusions even if rated elsewhere. Note: if somatic concern, guilt, suspiciousness, or grandiosity are rated 6 or 7 due to delusions, then unusual thought content must be rated 4 or above.

Questions to ask patient:

- Have you been receiving any special messages from people or from the way things are arranged around you?
- Have you seen any references to yourself on TV or in the newspapers?
- Can anyone read your mind?
- Do you have a special relationship with God?
- Is anything like electricity, X-rays, or radio waves affecting you?
- Are thoughts put into your head that are not your own?
- Have you felt that you were under the control of another person or force?

If patient reports any odd ideas/delusions, ask the following:

- How often do you think about [use patient's description]?
- Have you told anyone about these experiences?
- How do you explain the things that have been happening [specify with examples from patient]?

1 = Not present

2 = Very mild
Ideas of reference (people may stare or may laugh at them), ideas of persecution (people may mistreat them). Unusual beliefs in psychic powers, spirits, UFOs, or unrealistic beliefs in one's own abilities. Not strongly held. Some doubt.

3 = Mild
Same as 2, but degree of reality distortion is more severe as indicated by highly unusual ideas or greater conviction. Content may be typical of delusions (even bizarre), but without full conviction. The delusion does not seem to have fully formed, but is considered as one possible explanation for an unusual experience.

4 = Moderate
Delusion present but no preoccupation or functional impairment. May be an encapsulated delusion or a firmly endorsed absurd belief about past delusional circumstances.

5 = Moderately severe
Full delusion(s) present with some preoccupation **or** some areas of functioning disrupted by delusional thinking.

6 = Severe
Full delusion(s) present with much preoccupation **or** many areas of functioning are disrupted by delusional thinking.

7 = Extremely severe
Full delusion(s) present with almost total preoccupation **or** most areas of functioning are disrupted by delusional thinking.

(continues overleaf).

Figure 1.1 Brief Psychiatric Rating Scale – 24-item version (continued)

Hallucinations

Reports of perceptual experiences in the absence of relevant external stimuli. When rating degree to which functioning is disrupted by hallucinations, include preoccupation with the content and experience of the hallucinations, as well as functioning disrupted by acting out on the hallucinatory content (eg, engaging in deviant behavior due to command hallucinations). Include thoughts aloud ('gedankenlautwerden') or pseudohallucinations (eg, hears a voice inside head) if a voice quality is present.

Questions to ask patient:

- Do you ever seem to hear your name being called?
- Have you heard any sounds or people talking to you or about you when there has been nobody around?

If the patient hears voices, ask the following:

- What does the voice/voices say?
- Did it have a voice quality?
- Do you ever have visions or see things that others do not see?
- What about smell odors that others do not smell?

If the patient reports hallucinations, ask the following:

- Have these experiences interfered with your ability to perform your usual activities/work?
- How do you explain them?
- How often do they occur?

1 = Not present

2 = Very mild
While resting or going to sleep, sees visions, smells odors, or hears voices, sounds, or whispers in the absence of external stimulation, but no impairment in functioning.

3 = Mild
While in a clear state of consciousness, hears a voice calling the subjects name, experiences nonverbal auditory hallucinations (eg, sounds or whispers), formless visual hallucinations, or has sensory experiences in the presence of a modality relevant stimulus (eg, visual illusions) infrequently (eg, 1–2 times per week) and with no functional impairment.

4 = Moderate
Occasional verbal, visual, gustatory, olfactory, or tactile hallucinations with no functional impairment **or** non verbal auditory hallucinations/visual illusions more than infrequently or with impairment.

5 = Moderately severe
Experiences daily hallucinations **or** some areas of functioning are disrupted by hallucinations.

6 = Severe
Experiences verbal or visual hallucinations several times a day **or** many areas of functioning are disrupted by these hallucinations.

7 = Extremely severe
Persistent verbal or visual hallucinations throughout the day **or** most areas of functioning are disrupted by these hallucinations.

(continued). Data from Ventura et al [2]. © 1993, reproduced with permission from John Wiley and Sons.

Figure 1.2 4-Item Negative Symptom Assessment

Restricted speech quantity	1. Normal speech quantity. 2. Minimal reduction in quantity; may be extreme side of normal. 3. Speech quantity is reduced, but more obtained with minimal prodding. 4. Flow of speech is maintained only by regularly prodding. 5. Responses usually limited to a few words, and/or detail is only obtained by prodding or bribing. 6. Responses usually nonverbal or limited to 1 or 2 words despite efforts to elicit more. 7. Not ratable.
Emotion: reduced range (specify time frame for this assessment)	1. Normal range of emotion. 2. Minimal reduction in range; may be extreme side of normal. 3. Range seems restricted relative to a normal person, but during the specified time period subject convincingly reports at least four emotions. 4. Subject convincingly identifies two or three emotional experiences. 5. Subject can convincingly identify only one emotional experience. 6. Subject reports little or no emotional range. 7. Not ratable.
Reduced social drive	1. Normal social drive. 2. Minimal reduction in social drive; may be extreme side of normal. 3. Desire for social interactions seems somewhat reduced. 4. Obvious reduction in desire to initiate social contacts, but a number of social contacts are initiated each week. 5. Marked reduction in desire to initiate social contacts, but a few contacts are maintained at subject's initiation (as with family). 6. No desire to initiate any social interactions. 7. Not ratable.
Reduced interests	1. Normal interests. 2. Minimal reduction in interests; may be extreme side of normal. 3. Range of interests and/or commitment to them seems diminished. 4. Range of interests is clearly diminished and subject is not particularly committed to interests held. 5. Only one or two interests reported, and these pursued superficially. 6. Little or nothing stimulates interest. 7. Not ratable.

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Negative symptom scales

Negative symptoms in schizophrenia include blunted or restricted affect, alogia, asociality, anhedonia, and avolition [4]. Some of these items are included in instruments that measure positive symptoms, particularly the PANSS, which was developed with the goal of giving similar weight to both positive and negative symptoms. However, if a clinician is focused on treating negative symptoms, primarily positive symptom scales may not provide all of the coverage that will permit an adequate evaluation. For this reason, specialized scales for negative symptoms may be the best choice.

Scale for the Assessment of Negative Symptoms

The SANS [5] is a 25-item instrument that is widely used to measure five negative symptoms domains including:

- affective flattening (blunted affect);
- alogia;
- avolition and apathy;
- asociality; and
- attention.

Each SANS item is accompanied by a complete definition as well as detailed anchoring criteria for all six rating points ranging from 0 ('absent') to 5 ('severe'). The SANS is the most comprehensive standardized scale for the assessment of negative symptoms. Recent versions have eliminated items that were included in the original instrument, such as inappropriate affect (from affective flattening), poverty of content of speech (from alogia), the patient's subjective impression of his or her negative symptoms, and attentional impairment. These items are currently considered to be associated with positive symptoms in schizophrenia or in the case of the patient's subjective impression, prove difficult to rate reliably.

Negative Symptom Assessment Scale

The Negative Symptom Assessment Scale (NSA) [6] is a 23-item instrument and includes a global rating that assesses the five primary domains of negative symptoms. A revised 16-item version, the NSA-16, is considered easier to use and is most commonly used in clinical trials. An important advantage of the NSA-16 is that the asociality–avolition component more sensitively differentiates between actual negative symptoms and the patient's intentional behavior. For example, the NSA-16 measures a reduced sense of purpose and reduced social drive as negative symptom assessment items. A recently proposed four-item version of the NSA-16 may be particularly useful for clinical settings (Figure 1.2) [7].

Rating scales for depressive symptoms and suicidality are discussed in detail in Chapter 2.

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2. Depression and suicidality

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Depression

Depression is a common feature of schizophrenia. It is both a predictor of suicide and attempted suicide and an important correlate of quality of life. Depression is evident throughout the course of schizophrenia and is often most common at the first episode of psychosis [1,2]. In fact, young people experiencing their first episode of psychosis are at the highest risk of suicide and more often are diagnosed with depression. Thus, it was deemed important that depression should be regularly assessed in schizophrenia patients. However, one of the concerns in accurately assessing depression in schizophrenia was overlap with negative symptoms. The Calgary Depression Scale for Schizophrenia (CDSS) was developed to avoid this overlap and to have a scale that was valid for those who have schizophrenia [3]. The CDSS was shown to be both valid and reliable [4] and specific for depression in schizophrenia (ie, the degree to which it measures depression and not negative symptoms) [5]. In comparison to other scales of depression not specifically developed for schizophrenia, the CDSS did not overlap with either the positive or negative symptoms of schizophrenia [6]. Thus, the CDSS is a valid measure of depression with high internal and inter-rater reliability, all items are predictive of major depression, and it is specific to depression in schizophrenia. The CDSS has been translated into over 30 languages [7] and is used worldwide.

Using the Calgary Depression Scale for Schizophrenia

The CDSS is a nine-item instrument that is rated on a 4-point scale, 0–3 (Figure 2.1) [3]. The scale is designed to reflect the presence of depression exclusive of other dimensions of psychopathology in schizophrenia at both the acute and residual stages of the disorder. It is sensitive to change and can be used at a variety of intervals. The rater should have experience with people with schizophrenia and should develop inter-rater reliability with another rater experienced in the use of structured assessment instruments. The first question for each item should be asked as written. Follow-up probes or qualifiers are then used at the rater's discretion. The time frame refers to the previous 2 weeks unless stipulated. The last item, item 9, is based on observations during the entire interview.

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