

Use of the Positive and Negative Syndrome Scale (PANSS) in Clinical Practice

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The purpose of this article is to help mental health professionals learn to use the Positive and Negative Syndrome Scale (PANSS) in clinical settings. The authors describe how the PANSS can be used to guide treatment planning, to optimize antipsychotic dosing, to facilitate communication among clinicians, to provide clinical data that will lead to better treatment, and to improve documentation in a managed care environment. They then outline how the PANSS can be used to rate symptom severity. They describe the training required to use the scale, how overall ratings and subscale ratings are derived, and the sources of information needed to complete the scale. (*J Pract Psychiatry Behav Health* 1998;4:157-162)

KEY WORDS: PANSS, schizophrenia, positive symptoms, negative symptoms, rating scale, symptom severity

Lhe Positive and Negative Syndrome Scale or "PANSS" is a symptom severity rating scale that was developed to provide a well-defined and standardized means of assessing positive, negative, and other symptom dimensions in schizophrenia.¹ The PANSS was developed by combining 12 selected items from the Psychopathology Rating Schedule² with the 18-item Brief Psychiatric Rating Scale (BPRS).³ In comparing the PANSS to the BPRS, Bell et al. found that the PANSS had both higher interrater reliability and predictive validity. They concluded, "Important findings may be lost by employing an instrument less sensitive to schizophrenic phenomenology than the PANSS" (p. 727).⁴ Demonstrated to be psychometrically sound,⁵ the PANSS was used as the main outcome measure in the international clinical trials establishing the efficacy of risperidone in treating both positive and negative symptoms in schizophrenia,^{6,7} and has subsequently been widely used in establishing a role for other antipsychotic medications, including olanzapine⁸ and sertindole.⁹

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More recently, the PANSS has begun to be used in clinical settings to guide and assess the effect of pharmacological and psychosocial interventions on symptom severity in schizophrenia and other psychotic disorders. The PANSS can be a valuable aid to the clinician. Developed by clinicians, the PANSS is written in "user friendly" language, is easy for clinicians to learn, and can be readily adapted to a wide range of clinical settings.

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In this article, we first describe some of the ways the PANSS has been and can be used in clinical settings. We then provide a brief overview of how to use the PANSS in arriving at symptom severity ratings.

One word of caution: the PANSS is not a diagnostic instrument. It cannot tell you what diagnosis a patient has—for this, one needs to use state-of-the-art diagnostic criteria, such as those provided by the DSM-IV.¹⁰ Despite this, the PANSS can be used to describe both degree of total psychopathology as well as dimensions of psychopathology that should be the focus of treatment.

HOW THE PANSS CAN BE USED IN CLINICAL SETTINGS

To Guide Treatment Planning

Let's say a clinician has been referred a patient with chronic schizophrenia, undifferentiated subtype. The diagnosis was determined using DSM-IV criteria, and the

patient is presently receiving haloperidol. If, on evaluating the patient, he or she is found to be in full remission with no complaint of side effects, then switching from haloperidol to another antipsychotic is ill advised. However, patients usually do complain of side effects and, even while on adequate doses of a standard antipsychotic, do present with some degree of symptomatology. What should one do next? If negative symptoms are a prominent part of the patient's presentation, it would make sense to switch the patient to one of the novel antipsychotics (olanzapine, risperidone, quetiapine), or to the atypical antipsychotic clozapine, medications which have been shown in some studies to treat negative symptoms.¹¹ Using the PANSS, one can delineate severity of negative as well as positive symptoms at baseline, and determine whether the new medication has indeed offered advantages within these two independent symptom dimensions after a reasonable period of treatment (e.g., 3–6 months).

To Optimize Antipsychotic Dosing

Finding an optimal dose to treat psychopathology while minimizing side effects, in particular motor side effects, remains a challenge. Particularly in an aging population, who are more prone to side effects in general and at greater risk for tardive dyskinesia in particular, this is an increasingly important task. Changes in PANSS scores may be a useful method of documenting symptomatic improvement or exacerbation. In addition, repeated administration of the PANSS can be used to determine both the speed and degree of response (e.g., percentage of increase or decrease in PANSS scores) to antipsychotic treatment, including dose titration. Thus, the PANSS can be a useful tool in enabling clinicians to find the lowest effective dose which, in a given patient, prevents symptom exacerbation. This should minimize side effects. Maximizing efficacy while minimizing motor side effects is best achieved by using the PANSS to monitor symptom severity, while also rating drug-induced parkinsonism and akathisia with scales such as the Simpson-Angus Scale¹² and the Barnes Akathisia Scale.¹³

To Facilitate Communication among Clinicians

Because the PANSS has been widely used in international clinical trials of new antipsychotics (e.g., risperidone, olanzapine, and quetiapine), it has been translated into over 30 languages and is familiar to mental health professionals worldwide. Thus, the PANSS has emerged as a symptom rating scale that communicates important and meaningful information between clinicians, not simply within a single treatment setting as staff may change, but even across international borders. Since the PANSS provides clear definitions of each of its 30 symptoms and, if a symptom is judged to be present, specific criteria for each of six levels

of increasing severity ranging from mild to extreme (levels 2 through 7, with level 1 denoting the absence of a symptom), it serves to increase interrater reliability and thus facilitate communication among clinicians.

To Provide Clinical Data That Will Lead to Better Treatment

Standardized rating scales allow mental health professionals to develop clinically derived data bases that can potentially provide extremely valuable information about which interventions work best for particular patients. Serial PANSS ratings can provide objective evidence of symptomatic amelioration or exacerbation, and lead to better informed treatment plan changes aimed at symptomatic reduction.

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To Improve Documentation in a Managed Care Environment

Today, charting is used retrospectively to justify (or deny) reimbursement. A symptom severity rating scale such as the PANSS can be used to document the severity of a patient's symptomatology, response to specific treatment interventions, and the fact that active "state-of-the-art" clinical observation and evaluation was going on.

Charting is also used prospectively to provide a rationale for either continuing or changing a particular treatment intervention. For example, if a patient with chronic schizophrenia is showing little or no symptomatology on a stable regimen of a standard antipsychotic, there is no reason to switch to one of the newer antipsychotics. However, if either prominent positive or negative symptoms are shown to be present using the PANSS, this would provide ample justification for a clinical trial with a newer agent, even if this newer drug was more expensive. After 3 to 6 months, the PANSS can be used to demonstrate that a new agent has been effective in lowering symptom severity, a demonstration that may be needed to justify continued treatment with the more expensive agent.

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TABLE 1. PANSS Severity Ratings

1. (**Absent**) Symptom is not present
2. (**Minimal**) May allude to the extreme end of the normal range or it may denote subtle or questionable pathology
3. (**Mild**) Indicates that the symptom is clearly present but is not pronounced and interferes little in day-to-day functioning
4. (**Moderate**) Represents a symptom that is a serious problem but which occurs only occasionally or intrudes on the patient's daily life only to a modest extent.
5. (**Moderately severe**) Is consistent with a clearly manifested symptom that distinctly impacts upon one's functioning but is, nevertheless, not all-consuming and can usually be contained at will
6. (**Severe**) Represents gross pathology which is present quite frequently and proves highly disruptive to one's life and also often necessitates direct supervision.
7. (**Extreme**) Refers to the most severe level of psychopathology in which the behavioral manifestations of the symptom drastically interfere in most or all major life functions and necessitate very close supervision and assistance in many areas.

HOW TO RATE SYMPTOM SEVERITY USING THE PANSS

Training Required

Training is required to use the PANSS correctly. After one or two training sessions, clinicians can usually achieve acceptable rates of agreement as demonstrated by high interrater reliability. Self-training materials have been prepared by the present authors, but are not a substitute for attending a PANSS training workshop run by an experienced rater.*

While reading this article cannot substitute for training, we will briefly outline and underscore the main points we stress in training researchers and clinicians in the use of the PANSS.

*To learn how to obtain self-training materials or to arrange for a PANSS training workshop, contact Dr. Opler at the address listed at the beginning of this article or via e-mail (lao1@columbia.edu).

Overall Ratings

The PANSS consists of 30 items or symptoms, each of which is rated from 1 (the symptom is absent) to 7 (the symptom is extreme) (see Table 1).

To increase objectivity and reliability among raters, a *definition*, a *basis for rating*, and *criteria* to be used in arriving at the correct severity rating are provided for each of the 30 PANSS items. For example, the following description is provided for the PANSS Positive Scale item *Delusions*: "Beliefs which are unfounded, unrealistic, and idiosyncratic. *Basis for rating*: thought content expressed in the interview and its influence on social relations and behavior as reported by primary care workers or family." (p.27)¹ The most accurate rating is arrived at by determining which of the following criteria best applies for the period under scrutiny (usually the past week):

1. **Absent.** Definition does not apply.
2. **Minimal.** Questionable pathology; may be at the upper extreme of normal limits.
3. **Mild.** Presence of one or two delusions which are vague, uncristallized, and not tenaciously held. Delusions do not interfere with thinking, social relations or behavior.
4. **Moderate.** Presence of either a kaleidoscopic array of poorly formed, unstable delusions or of a few well formed delusions that occasionally interfere with thinking, social relations, or behavior.
5. **Moderately Severe.** Presence of numerous well formed delusions that are tenaciously held and occasionally interfere with thinking, social relations, or behavior.
6. **Severe.** Presence of a stable set of delusions which are crystallized, possibly systematized, tenaciously held, and clearly interfere with thinking, social relations, and behavior.
7. **Extreme.** Presence of a stable set of delusions which are either highly systematized or very numerous, and which dominate major facets of the patient's life. This frequently results in inappropriate and irresponsible action, which may even jeopardize the safety of the patient or others.

Training is required to use the PANSS correctly.

Each of the 30 PANSS items is rated using this methodology. By adhering literally to the item definition, basis for rating, and criteria provided in the Positive and Negative

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Syndrome (PANSS) Manual, as opposed to a more subjective sense of degree of psychopathology, a high degree of reliability is quickly attained. Thus, what one clinician states as the degree of symptomatic severity will closely agree with what another clinician, working either within the same or in a different setting, reports.

When the 30 PANSS items are added together, a number indicative of overall psychopathology is obtained. Since the rating for each item can range from 1 to 7, the potential range of the 30-item PANSS is 30 to 210. Within the real clinical world, it is extremely unlikely that one will encounter a patient with a total PANSS rating less than 60 or greater than 180. For example, in the Janssen-sponsored double-blind placebo-controlled study presented to the FDA in establishing the efficacy of risperidone, patients were required at baseline to have a total score on the PANSS of no less than 60 and no greater than 120, in order to have a sample that was typical of hospitalized patients with chronic schizophrenia. This criterion enabled the researchers to avoid including patients in remission or those with severe psychosis, thereby making the findings more applicable to the typical clinical setting where one would be considering risperidone versus a standard antipsychotic as first-line pharmacotherapy.

Subscale Ratings

The PANSS is organized into three subscales, which allow clinicians to calculate a PANSS Positive Scale score, a PANSS Negative Scale score, and a PANSS General Psychopathology Scale score.

Positive symptoms are active processes that would not be found on a normal mental status examination. For example, the PANSS item *Hallucinatory behavior*, defined as

TABLE 2. PANSS Positive Scale

(Scoring Range: 7–49)

The Positive Scale score is obtained by summing severity ratings on the following 7 items:

- P1. Delusions
- P2. Conceptual disorganization
- P3. Hallucinatory behavior
- P4. Excitement
- P5. Grandiosity
- P6. Suspiciousness/persecution
- P7. Hostility

TABLE 3. PANSS Negative Scale

(Scoring Range: 7–49)

The Negative Scale score is obtained by summing severity ratings on the following 7 items:

- N1. Blunted affect
- N2. Emotional withdrawal
- N3. Poor rapport
- N4. Passive/apathetic social withdrawal
- N5. Difficulty in abstract thinking
- N6. Lack of spontaneity and flow of conversation
- N7. Stereotyped thinking

TABLE 4. PANSS General Psychopathology Scale

(Range: 16–112)

The General Psychopathology Scale score is obtained by summing severity ratings on the following 16 items:

- G1. Somatic concern
- G2. Anxiety
- G3. Guilt feelings
- G4. Tension
- G5. Mannerisms and posturing
- G6. Depression
- G7. Motor retardation
- G8. Uncooperativeness
- G9. Unusual thought content
- G10. Disorientation
- G11. Poor attention
- G12. Lack of judgment and insight
- G13. Disturbance of volition
- G14. Poor impulse control
- G15. Preoccupation
- G16. Active social avoidance

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TABLE 5. PANSS Sources of Information

12 items are rated by combining information from the interview with information provided by a primary care worker or family member:

- P1. Delusions
- P3. Hallucinatory behavior
- P4. Excitement
- P5. Grandiosity
- P6. Suspiciousness/persecution
- P7. Hostility
- N2. Emotional withdrawal
- G5. Mannerisms and posturing
- G6. Depression
- G7. Motor retardation
- G8. Uncooperativeness
- G14. Poor impulse control

2 items are rated based only on information provided by a primary care worker or family member:

- N4. Passive/apathetic social withdrawal
- G16. Active social avoidance

16 items are rated based on information from the interview alone:

- P2. Conceptual disorganization
- N1. Blunted affect
- N3. Poor rapport
- N5. Difficulty in abstract thinking
- N6. Lack of spontaneity and flow of conversation
- N7. Stereotyped thinking
- G1. Somatic concern
- G2. Anxiety
- G3. Guilt feelings
- G4. Tension
- G9. Unusual thought content
- G10. Disorientation
- G11. Poor attention
- G12. Lack of judgment and insight
- G13. Disturbance of volition
- G15. Preoccupation

"Verbal report or behavior indicating perceptions which are not generated by external stimuli . . . in the auditory, visual, olfactory, or somatic realms," is a positive symptom. Seven items are summed to calculate the PANSS Positive Scale score, which therefore has a potential range of 7 to 49 (Table 2).

Negative symptoms involve the absence of processes that would usually be found on a normal mental status exam. For example, the PANSS item *Blunted affect*, defined as "Diminished emotional responsiveness as characterized by a reduction in facial expression, modulation of feelings, and communicative gestures," is a negative symptom. Seven items are summed to calculate the PANSS Negative Scale score, which, like the PANSS Positive Scale score, has a potential range of 7 to 49 (Table 3).

General psychopathology symptoms are items which, while frequently present in mental disorders, are not clas-

TABLE 6. The SCI-PANSS Interview

The SCI-PANSS Interview usually requires from 30 to 40 minutes. It lends itself to observation of:

1. Physical manifestations
 - tension
 - mannerisms and posturing
 - excitement
 - blunting of affect
2. Interpersonal behavior
 - poor rapport
 - uncooperativeness
 - hostility
3. Cognitive-verbal processes
 - conceptual disorganization
 - stereotyped thinking
 - lack of spontaneity and flow of conversation
4. Thought content
 - grandiosity
 - somatic concern
 - guilt feelings
 - delusions
5. The patient's response to structured questioning

sifiable as either additions to or absences of normal processes. For example, the PANSS item *Depression*, defined as "Feelings of sadness, discouragement, helplessness, and pessimism," is a general psychopathology symptom. It cannot be classified as either an active positive symptom nor as a deficit negative symptom. Sixteen items are summed to calculate the General Psychopathology Scale score, which therefore has a potential range of 16–112 (Table 4).

Source of Information

Information upon which PANSS ratings are based derives from the clinical interview and/or reports from primary hospital staff or, if the patient is not institutionalized, significant others. Twelve PANSS items are rated by combining information from the interview with that provided by a primary care worker or family member; 2 PANSS items are rated based only on information provided by a primary care worker or family member; and 16 PANSS items are rated based on information from the interview alone (see Table 5).

Structured Clinical Interview for the PANSS

The Structured Clinical Interview for the PANSS or "SCI-PANSS"¹⁴ was developed to assist in determining the presence and severity of an array of symptoms in a consistent and comprehensive manner. Like the Structured Clinical Interview for the DSM-IV or "SCID," upon which the SCI-PANSS is modeled, it is important that the interview progress in a clinically meaningful rather than in a mechanical "checklist" manner. Interviewers are therefore encouraged to vary the precise wording and order of questions if this will facilitate a better interview. However, all questions included in the SCI-PANSS must be asked in order to ensure that all the information necessary to score the PANSS is obtained. In addition, when making a rating, information drawn from the entire interview and not just from that section dealing with specific questions related to a particular symptom should be used. For example, while questions related to beliefs about personal health status are listed under the heading "Data on Somatic Concern (G1)," if the patient has provided information regarding somatic concerns during other parts of the interview, such information should also be used in arriving at the correct rating. The SCI-PANSS interview usually requires 30–40

minutes and lends itself to observations of an array of behavioral and cognitive-verbal processes (see Table 6).

CONCLUSION

Despite the demonstrated validity and reliability of the PANSS, it is the clinician who must ultimately decide what weight to give the results obtained from the PANSS, in relationship to other available clinical data, in deciding upon a treatment plan for any given patient. The PANSS can, however, be an extremely useful tool for clinicians in helping them to provide quality care for their patients, both in private practice settings and managed care environments.

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