

The MacCAT-T: A Clinical Tool to Assess Patients' Capacities to Make Treatment Decisions

Thomas Grisso, Ph.D.
Paul S. Appelbaum, M.D.
Carolyn Hill-Fotouhi, M.A.

Objective: The feasibility, reliability, and validity of a new instrument, the MacArthur Competence Assessment Tool—Treatment (MacCAT-T), which was developed for use by clinicians, was tested. The instrument assesses patients' competence to make treatment decisions by examining their capacities in four areas—understanding information relevant to their condition and the recommended treatment, reasoning about the potential risks and benefits of their choices, appreciating the nature of their situation and the consequences of their choices, and expressing a choice. **Method:** The MacCAT-T and instruments to measure symptom severity were administered to 40 patients recently hospitalized with schizophrenia or schizoaffective disorder and 40 matched subjects in the community without mental illness. **Results:** A high degree of ease of use and interrater reliability was found for the MacCAT-T. Overall, the hospitalized patients performed significantly more poorly than the community subjects on understanding and reasoning, although many patients performed as well as community subjects. Poor performance was related to higher levels of some psychiatric symptoms, such as conceptual disorganization, hallucinations, and disorientation. **Conclusions:** The MacCAT-T offers a flexible yet structured method with which caregivers can assess, rate, and report patients' abilities relevant for evaluating competence to consent to treatment. (*Psychiatric Services* 48:1415–1419, 1997)

Legal and ethical standards for informed consent require that patients be competent to make decisions about recommended treatment (1). When a suspicion of incompetence exists, the responsibility falls to clinicians to assess patients' capacities to determine whether patients' decisions should be accepted or whether substituted consent should be sought (2). Although several conceptualizations of the capacities relevant to competence have been offered in recent years (3–5), a consensus has evolved about the primary elements. They include the abilities to under-

stand relevant information, to reason about the risks and benefits of potential options, to appreciate the nature of one's situation and the consequences of one's choices, and to express a choice (2,6,7–13).

The importance of determining patients' capacities and the variability of clinical evaluations has led to efforts to develop structured methods to assess these capacities (14–17). However, none of these methods simultaneously provides a focus on the four major areas of capacity plus structured scoring procedures and the flexibility to be applied to an unlimited range of treat-

ment options. For our previous studies of decision-making competence, we developed a set of measures, the MacArthur Treatment Competence Research Instruments, that offered reliable and seemingly valid estimates of patients' capacities (12,18).

We used these measures to compare patients hospitalized with schizophrenia or schizoaffective disorder and patients with major depression, as well as patients with a medical disorder (ischemic heart disease) who did not have mental illness (19). In addition, each of these groups was compared with a group of subjects in the community with no history of mental disorder that was matched with the clinical samples on critical demographic variables. As a group, patients with schizophrenia or schizoaffective disorder performed significantly more poorly on the competence instruments than either the community comparison group or the groups with major depression or ischemic heart disease. Other results relating their performance to clinical variables suggested substantial validity for the measures of the various abilities.

Although the MacArthur Treatment Competence Research Instruments may be helpful in future research on patients' capacities, they are not well suited to routine use by clinicians. For purposes of research, the instruments have standardized content that does not allow for assessment in the context of a patient's own symptoms and treatment options. Moreover, all three of the instruments require a total of 60 to 90 minutes to administer, and their scoring criteria—in order to ensure

The authors are affiliated with the department of psychiatry at the University of Massachusetts Medical School, 55 Lake Avenue North, Worcester, Massachusetts 01655.

high interscorer reliability—are relatively detailed and complex.

In this paper we report the results of an initial trial of an assessment instrument, the MacArthur Competence Assessment Tool—Treatment (MacCAT-T), derived from our research measures but intended to be clinically useful. The study explored the feasibility and reliability of using MacCAT-T in psychiatric settings.

Methods

Subjects

The study included two groups. The patient sample was obtained from among all acutely ill patients with initial diagnoses of schizophrenia or schizoaffective disorder admitted to two psychiatric units in a teaching hospital over eight consecutive months (March to October 1994). Of these 276 patients, 44 percent were not eligible because they were not between the ages of 18 and 65, failed to retain a chart diagnosis of schizophrenia or schizoaffective disorder three days after admission, did not speak English, or were not available for participation within eight days after admission. In another 12 percent of cases, clinicians believed that the patients were too disoriented or agitated to participate.

Of the 126 eligible patients who remained, 54 (43 percent) refused to participate, 13 (10 percent) were too agitated to complete testing, and 14 (11 percent) did not meet criteria for schizophrenia or schizoaffective disorder when the Diagnostic Interview Schedule Screening Instrument (DISSI) (20) was administered. Of the 45 patients who completed the research procedure (36 percent of eligible patients), five were not included in the final sample because matches for them were not found in the community.

The community sample, obtained by advertising, was matched person for person with participants in the patient group for age (within five years), gender, race, education (within two years), and highest lifetime occupation (within one level on an eight-level index [21]). Community volunteers were excluded from the study if they met criteria for schizophrenia or schizoaffective disorder on the DISSI.

Measures

In addition to the DISSI, subjects completed the 19-item version of the Brief Psychiatric Rating Scale (BPRS) (22,23), which was used to assess severity of psychiatric symptoms. BPRS scores above 40 commonly are associated with a need for inpatient treatment. The Brief Symptom Inventory (BSI) (24) was administered to confirm differences between the groups in overall level of self-reported psychological distress; higher scores indicate more distress. The MacCAT-T (25) was used to assess the four major abilities related to competence to consent to treatment (2,12).

The MacCAT-T offers a semistructured interview procedure that guides clinicians and patients through a process of disclosure of information related to informed consent, as well as an assessment of patients' capacities to make decisions based on the information. Before the interview, the clinician selects the relevant information to be disclosed, based on a hospital chart review of the patient's symptoms, diagnosis, and treatment needs. The clinician records this information in appropriate sections of the MacCAT-T record form, which provides the structure and sequence for the interview.

The MacCAT-T interview process begins with a disclosure of the nature of the patient's disorder and proceeds through the recommended treatment, its benefits and risks, and alternative treatments. It concludes with the patient's expressing a treatment choice and explaining how the choice was made. Embedded within this process are questions to be posed by the clinician to assess the patient's abilities to understand, appreciate, and reason about the disclosed information and to conclude with a clear expression of a choice. The MacCAT-T interview typically requires 15 to 20 minutes.

Understanding is assessed by exploring the patient's ability to paraphrase what has been disclosed concerning the disorder, the recommended treatment, and the treatment's benefits and risks. When a patient manifests poor understanding, the MacCAT-T prompts the clinician to redisclose the information and reassess the patient's understanding so that the patient is less likely to mani-

fest poor performance merely because of initial lack of attention to or unfamiliarity with the concepts disclosed.

Reasoning is assessed by questions examining the patient's explanations for his or her choices: whether the patient mentions any consequences of treatment alternatives (consequential thinking), whether he or she compares alternatives (comparative thinking), whether the patient expresses any thoughts about consequences besides those offered in the disclosure (generating consequences), and whether the patient's final choice follows logically from his or her own explanation. Finally, the ability to express a choice is assessed simply by evidence that the patient has stated a preference for a treatment option.

Appreciation is assessed with guided questioning that explores whether the patient fails to acknowledge that the disclosed information applies to him or her (the appreciation of disorder subscale) or that treatment might have at least some benefit (the appreciation of treatment benefit subscale). To be considered as reflecting a lack of appreciation, the patient's beliefs must be based on delusional or otherwise distorted perceptions, not merely a reasonable difference of opinion.

The patient's responses to these questions are documented on the MacCAT-T record form and rated for quality of response. Ratings are 2, adequate; 1, partial; and 0, inadequate. Specific criteria and examples are provided to guide the clinician's ratings.

The method provides summary ratings for each capacity—0 to 6 for understanding, 0 to 4 for appreciation, 0 to 8 for reasoning, and 0 to 2 for expressing a choice. No overall MacCAT-T rating is calculated, and no specific summary rating on the four capacities is regarded as representing legal competence or incompetence to consent to treatment. The ratings merely identify a degree of capacity or deficiency in the relevant abilities, which then must be weighed along with other clinical and contextual information to arrive at judgments about competence in individual cases. A manual for administering the MacCAT-T and recording and rating responses is available from the authors (25).

Procedure

After subjects gave written informed consent, data were collected by research assistants with master's degrees and extensive training in use of the MacCAT-T. Data were gathered no later than eight days after admission (sample mean=4.2 days). Community subjects were seen in homes or public locations that provided suitable privacy.

To prepare individualized MacCAT-T disclosures for patients, research assistants reviewed patients' charts and consulted patients' psychiatrists when ambiguities were noted. For each community subject, the clinical information that was disclosed in the MacCAT-T interview was the information relevant to the patient to whom they were matched.

Patients were informed that the interview was only for research purposes ("We are trying out a new interview procedure to see how it works") and would not affect their treatment during their hospital stay. Community subjects were instructed that they would be told about a disorder and its symptoms found in some patients in mental hospitals, and that they would be asked to decide what treatment they themselves would choose if they had that disorder.

Community subjects were not administered the appreciation portion because the nature of the questions—for example, Do you believe that you have these symptoms?—made them inapplicable to their circumstances. In all cases, the recommended treatment was a medication that the patient's treating physician considered appropriate for the patient's psychiatric condition. A standard reference (26) was used to select information to be disclosed about the benefits and risks (side effects) of each medication. The MacCAT-T requires that at least one alternative treatment be offered. In all cases, the alternative described was individual and group psychosocial therapeutic activities typically available on the participating psychiatric units, but without medication.

Results

Sample

For both the patient and the community groups, 32 subjects (80 percent) were males, 34 (85 percent) were

white, and most were between the ages of 25 and 50 years (mean=39 years for both groups). In the patient group, 34 subjects (85 percent) were of low socioeconomic status, compared with 32 subjects (80 percent) in the community group. Most patients were admitted voluntarily, and all had begun receiving antipsychotic medications.

Patients had chart diagnoses of paranoid schizophrenia (40 percent), undifferentiated schizophrenia (30 percent), schizoaffective disorder (28 percent), and disorganized schizophrenia (2 percent). Patients' mean BPRS score was 50, with 36 patients (90 percent) having scores of 40 or higher. Patients scored higher than community subjects on every scale of the BSI, as well as on the BSI global sensitivity index. Differences on all scales of the BSI were statistically significant when examined with paired *t*-tests ($p < .001$ for most comparisons).

MacCAT-T interrater reliability

To examine interrater reliability, protocols for 20 patients and 20 community subjects were rated by two of the research assistants and one of the authors (TG). Intraclass correlations calculated among three raters on the MacCAT-T summary ratings were .99 for understanding, .87 for appreciation, .91 for reasoning, and .97 for expressing a choice. Intraclass correlations ranged from .82 to .99 for the individual items contributing to these summary ratings.

MacCAT-T performance

All community subjects and all but two patients received full credit for expressing a choice. Table 1 shows the performance of both groups on the understanding, reasoning, and appreciation portions of the MacCAT-T.

On understanding, the performance mean of the patient group was significantly lower than that of the community group. Possible summary ratings for understanding range from 0 to 6, with higher ratings indicating greater understanding. Thirteen patients (33 percent) had ratings greater than 5, compared with 36 (90 percent) of the community subjects. Another 13 patients (33 percent) had ratings of 4 or lower, compared with only two community subjects (5 percent).

On reasoning, patients as a group

Table 1

Ratings on scales of the MacCAT-T for psychiatric inpatients and demographically matched subjects in the community without mental illness

Scale and rating	Patients		Community subjects	
	N	%	N	%
Understanding ¹				
6 to 5.1	13	33	36	90
5 to 4.1	14	35	2	5
4 to 3.1	6	15	2	5
3 to 2.1	5	13	0	0
Less than 2.1	2	5	0	0
Reasoning ²				
8	8	20	12	30
7 to 6	13	33	16	40
5 to 4	11	18	10	25
3 to 2	2	5	1	3
1 to 0	6	15	1	3
Appreciation ³				
4	31	78		
3	2	5		
2	3	8		
1	3	8		
0	1	3		

¹ Mean \pm SD = 4.33 \pm 1.35 for patients, 5.60 \pm .66 for community subjects ($t = 5.19$, $df = 1, 78$, $p < .001$)

² Mean \pm SD = 5.20 \pm 2.42 for patients, 6.15 \pm 1.69 for community subjects ($t = 2.15$, $df = 1, 78$, $p = .038$)

³ Community subjects were not asked the questions in the appreciation scale.

also obtained a significantly lower mean rating than the community group. Absolute differences between the groups in the proportion of subjects with higher ratings were not so great as those for the understanding scale. Ratings of 3 or lower, however, were found for eight patients (20 percent) compared with only two community subjects (5 percent).

On appreciation, clear deficiencies (ratings of 0) were found for five patients (12 percent) in appreciation of the disorder and for three patients (8 percent) in appreciation of treatment (data not shown). Adequate appreciation summary ratings (3 or higher; range=0 to 4) were obtained by 33 patients (83 percent), and low ratings (range=0 to 1) were obtained by four patients (10 percent).

Performance and patient characteristics

Table 2 shows significant Pearson *r* correlations between MacCAT-T summary ratings for the four capacities

Table 2

Correlations (Pearson r) between ratings on scales of the MacCAT-T and scores on the 19 items of the Brief Psychiatric Rating Scale (BPRS) for 40 psychiatric inpatients

BPRS item ¹	Understanding	Reasoning	Appreciation	Expressing choice
BPRS total score	-.07	-.13	-.10	-.20
1. Somatic concern				
2. Anxiety				
3. Withdrawal				
4. Conceptual disorganization	-.51***			-.26*
5. Guilt feelings	.31*			
6. Tension				-.38**
7. Mannerisms	-.31*			-.51***
8. Grandiosity				
9. Depressive mood	.49***			
10. Hostility		-.30*	-.26*	
11. Suspiciousness	.27*			
12. Hallucinations	-.30*		.30*	
13. Motor retardation				
14. Uncooperative	-.34*	-.27*		
15. Unusual thought				
16. Blunted affect			-.27*	
17. Excitement				
18. Disorientation	-.42**			
19. Elevated mood				

¹ Correlations with the BPRS total score were not significant for any MacCAT-T ratings. Only statistically significant correlations are shown for individual BPRS items.

*p < .05

**p < .01

***p < .001

and BPRS item ratings for the patient sample. BPRS total scores were not significantly related to MacCAT-T performance, although greater symptom severity tended to correlate with lower MacCAT-T ratings.

Several individual BPRS items were significantly correlated with MacCAT-T summary ratings for understanding. As in our earlier study using the MacArthur Treatment Competence Research Instruments, strong negative correlations were found between understanding and BPRS scores on conceptual disorganization and hallucinations. Unlike the earlier study, no substantial correlation was found between understanding and BPRS scores on unusual thought; however, negative correlations were found between understanding and three BPRS items: uncooperative, disorientation, and mannerisms. Finally, positive correlations were found between understanding and BPRS scores on depressive mood and guilt feelings.

Correlations were calculated between understanding and five factors derived from the BPRS (27). The cor-

relation between understanding and thought disorganization (BPRS items 4, 8, 12, and 15), which was -.44 in our earlier study using the research instruments, was -.21 in the study reported here, not a statistically significant correlation. The only BPRS factor that was significantly correlated ($r = .42$) with understanding was anxiety (BPRS items 1, 2, 5, and 9), suggesting that symptoms of anxiety and depression were related to better performance on the MacCAT-T measure of understanding in this sample. No discernible pattern was seen in the correlations between appreciation or reasoning and individual BPRS items.

None of the MacCAT-T ratings were significantly correlated with patients' age, gender, race, number of previous hospitalizations, age at first hospitalization, highest occupational level, or education.

Discussion and conclusions

This initial test of the MacCAT-T was intended to explore its potential validity, its feasibility for clinical use, and directions for further research.

In terms of validity, the MacCAT-T ratings for understanding and reasoning produced distributions of scores that were similar to those we found in past studies with our research measures of the same capacities using similar samples (19; Hoge S, Bonnie R, Poythress N, et al, unpublished manuscript, 1996). As in those past studies, capacity ratings were significantly poorer for this acutely ill psychiatric sample than for persons in the general public with similar socioeconomic characteristics. These observations, together with the relationships between MacCAT-T ratings and BPRS items, provide initial indications of validity for the method.

In terms of clinical feasibility, the results suggest that the MacCAT-T offers satisfactory solutions to several challenges inherent in the development of a method for assessing patients' decision-making capacities about treatment in general clinical practice. That we had no difficulty constructing individualized disclosures for the patient group suggests that the method would allow clinicians to assess patients' capacities regarding information relevant to each patient's personal situation. Subjects generally tolerated the interview quite well. Results suggest that different clinicians can rate MacCAT-T observations reliably, although further studies are required to determine the degree to which different clinicians elicit similar responses from patients.

A method like the MacCAT-T has several benefits (28). It ensures that the clinician has covered the full range of abilities that should be considered in making competence judgments, provides documentation of the clinician's care in informed consent disclosure and inquiry, helps structure the clinician's reasoning about competence, and, if necessary, helps the clinician explain to others how the final clinical judgment was made.

Methods of this type also have costs. We found that the MacCAT-T requires about 15 to 20 minutes to administer, probably a little longer than the routine inquiry made by clinicians in ordinary practice. Moreover, although we have found in our clinical work that clinicians are comfortable with the method after using it one or two times, an initial brief training is necessary. (A

MacCAT-T training videotape is available from the authors.)

Given these factors, in what kind of clinical situations would the MacCAT-T be most helpful? In many cases the inadequacy or adequacy of patients' decision-making capacities is so apparent that no special assessment device is required. It is in the midrange of ambiguous cases of competence that the benefits of the method may outweigh its costs, especially when clinicians have reason to believe that their judgments might later be questioned—for example, in legal proceedings about a patient's capacity to decide or about the reasonableness of a clinician's decision to accept a patient's decision or to turn instead to a surrogate.

Psychiatrists who are responsible for consultation-liaison assessments of patients' competence are especially likely to find a structured method like the MacCAT-T of benefit, inasmuch as their consultations most often involve more ambiguous and difficult cases. The method also has benefits for medical education, providing an initial structure for medical students and residents who are unfamiliar with the process of assessing patients' capacities related to competence to consent to treatment.

In terms of directions for research, this study did not—and was not intended to—provide an estimate of the distribution of impaired capacities in a hospitalized population of patients with schizophrenia. For example, a substantial percentage of eligible patients could not be tested because they refused to participate in the study. In addition, the study did not attempt to determine whether the MacCAT-T provides ratings that correspond to actual clinical or legal judgments of competence or incompetence to consent to treatment. Studies of that type are warranted in light of the MacCAT-T's performance in this initial trial. One should not necessarily expect high predictive relationships, however, inasmuch as decision-making capacities like those assessed with the MacCAT-T are not the only factors in ultimate clinical or legal judgments of competence (3,8,9). An evaluation of the clinical condition of the patient and the context of the treatment situation are also important determinants of the competence judgment (28).

Although this initial trial of the MacCAT-T used a narrow sample diagnostically, the MacCAT-T is intended for use with general medical and psychiatric populations. Work currently under way examines the use of the MacCAT-T in psychiatric consultation-liaison services, where there is frequently a need to assess the capacities of patients facing decisions about medical treatments (29). ♦

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