

An Instrument to Assess Competencies of Providers Treating Severe Mental Illness

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One approach to improving the quality of care for severe mental illnesses (SMI) such as schizophrenia is through the improvement of provider competencies; the attitudes, knowledge, and skills needed to deliver high-quality care. This paper describes a new instrument designed to measure such a set of competencies. A total of 341 providers of services to clients with SMI at 38 clinics within 5 publicly financed treatment organizations in 2 western states were asked to complete a paper-and-pencil survey including the new Competency Assessment Instrument (CAI: 15 scales, each assessing a particular provider competency), and additional measures used to establish validity (Recovery Attitude Questionnaire—7, Client Optimism Scale). Seventy-nine percent ($N = 269$) responded at baseline, 83% ($N = 282$) responded at 2 weeks. Ninety-seven percent of baseline respondents completed the survey at 2 weeks. Most CAI scales have good internal consistency (Cronbach's α s = .52–.93), test–retest reliability (scales ranged from .42 to .78), and validity, and should be useful in efforts to improve care.

KEY WORDS: Competency Assessment Instrument; serious mental illness; rehabilitation; self-help; recovery; quality improvement.

INTRODUCTION

Treatment quality for those with severe mental illness (SMI), including schizophrenia, bipolar disorder, and major depression, is often poor (Lehman, 1999; Unutzer, Simon, Pabiniak, Bond, & Katon, 2000; Young, Forquer, Tran, Starzynski, & Shatkin, 2000), which can lead to serious negative outcomes such as injury or death. The establishment of treatment guidelines and standards of care have been popular quality-improvement approaches for those with SMI, as well as many other medical and mental health disorders. Both approaches specify “best

practices” as defined by the current scientific evidence base and supplemented with clinical judgment where evidence is lacking. In mental health, treatment guidelines have been developed for many disorders including schizophrenia (American Psychiatric Association [APA], 1997; Department of Veteran Affairs, 1997; Lehman & Steinwachs, 1998; McEvoy et al., 1996; McEvoy, Scheifler, Frances, 1999; Muñoz, 2000; Rush et al., 1999) and bipolar disorder (APA, 1994; Frances, Docherty, & Kahn, 1996; Sachs, Printz, Kahn, Carpenter, & Docherty, 2000; Muñoz, 2000). State mental health agencies, for example, in Vermont (Carling & Curtis, 1993) and in New Hampshire (Torey & Wyzik, 1997), have developed guidelines for the treatment of those with SMI. However, studies applying these guidelines to usual care have found that adherence is usually low, resulting in less than optimum care (Lehman & Steinwachs, 1998; Young, Sullivan, Burnam, & Brook, 1998). There are also many sets of standards that establish minimum levels of quality for the care of those with SMI and are organized either by discipline (e.g., the National

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Association for Social Workers standards for the practice of Clinical Social Work) or setting (Joint Commission on Accreditation of Healthcare Organizations for hospitals). However, these types of standards are often applied unevenly and their effect on the quality of care is unclear.

A complementary approach to improving mental health care focuses on provider competencies. Competencies are the knowledge (i.e., do providers know what to do?), skills (i.e., what are providers able to do?), and attitudes (what values do providers have?) needed to deliver high-quality care (Coursey, Curtis, Marsh, et al., 2000a, 2000b). Competencies are useful because they emphasize the skills and values that may be less visible in a guideline or standards-based approach, but are equally important to care. For example, Corrigan and colleagues found that staff providing services for persons with SMI often have negative attitudes about adopting behavioral innovations for their programs, which may lead to a failure to incorporate them into their work (Corrigan, McCracken, Edwards, Kommana, & Simpatico, 1997). Finally, competencies are well suited for quality-assurance interventions that include training, assessment, and feedback.

Competency sets that have been developed for mental health services tend to be organized by specific treatments, professional disciplines, or treatment skills. For example, there are several competency sets that address knowledge, attitudes, and skills needed for the practice of rehabilitation (International Association of Psychosocial Rehabilitation Services, 1997; Jonikas, 1993; Kuehnel, Liberman, Howard, et al., 1996; Trochim & Cook, 1993). There have been efforts to define competencies for specific professions such as psychiatric nursing (American Nurse Association [ANA], 1997), social work (Egnew, 1995), psychiatry (APA, 1995), psychology (Johnson, 1990), and community support human service practitioners (Taylor, Bradley, & Warren, 1996); and particular treatment functions such as managing medications (Kissling, 1991), involving families in treatment (Glynn, Liberman, & Backer, 1997; Muesser & Glynn, 1988), providing vocational rehabilitation (Drake & Becker, 1996; Lehman, 1995) and dual diagnosis services (The Center for Mental Health Services Managed Care Initiative, 1998), and assessing various ethnic groups appropriately (Lu, Lim, & Mezzich, 1995). Other competency sets have been developed for the managed care environment (Coursey, Curtis, Marsh, et al., 2000a, 2000b; The Center for Mental Health Services Managed

Care Initiative, 1998; Yager, Docherty, & Tischler, 1997).

Young et al. (2000) developed a set of competencies for providers of clients with SMI by reviewing existing literature and competency statements, and conducting focus groups, interviews, and an expert panel with representatives of clients, family members, clinicians, managers, policymakers, and experts. A strength of this set is that it identifies 37 competencies that are important in determining outcomes, yet often lacking in current clinicians. Also, in addition to conventional competencies, this set emphasizes such concepts as rehabilitation, self-help, client empowerment, and recovery. Underlying recovery-oriented care is the idea that persons can regain purpose and meaning in life while having a serious mental illness. These concepts, which tend not to be included in many treatment guidelines and standards, have proved to be important aspects of high-quality care for those with SMI (Drake et al., 1999; Galanter, 1988; Kennedy, 1989; Levine & Perkins, 1987; Moos, Schaefer, Andrassy, & Moos, 2001; Rappaport, 1993; Segal, Silverman, & Temkin, 1995) and influenced the design of public sector mental health care delivery (e.g., Wisconsin's Blue Ribbon Commission on Mental Health; DeSantis, Robison, Johnson, et al., 1997). Examples of the knowledge, skills, and attitudes that make up these competencies are "I am aware of common stereotypes about people with mental illness (knowledge)," "It is best to keep my work with clients focused on their mental illness (attitude)," and "Teaching family members about mental illness (skills)".

Competencies have been measured in many ways, largely influenced by the type of competency. For example, the specific and observable skills required in several medical specialties (e.g., surgery) can be assessed with actual performance in a standardized simulation (the Strategic Management Simulation; Satish, Streufert, Marshall, et al., 2000) or with real cases (the Objective Structured Clinical Examination; Carraccio & Englander, 2000). Managed care companies have used performance measures based on client satisfaction and complaints, service utilization, emergency referrals, out of network referrals, and medical record completeness and accuracy (Duberman, 1999). Survey-based methods, in which trainees are asked to rate their own proficiencies, have been used with a variety of groups such as senior residents from eight medical specialties (Blumenthal, Gokhale, Campbell, & Weissman, 2001), nonmental health nurses working with rural clients with mental health problems (Lauder, Reynolds, Reilly, & Angus,

2000), and social worker trainees treating substance abusing clients (Amodeo & Fassler, 2000). In all cases, these surveys were well received, reliable and valid, easy to implement, and led to the identification of educational priorities. Developing a survey-based assessment of competencies appears to be an appropriate strategy for public sector mental health providers because financial support for costly assessments such as simulations is not usually available, and written medical records typically contain little reliable information (Cradock, Young, & Sullivan, 2001).

The competency instrument described here was designed to be a quality-improvement tool for researchers, providers, and administrators to reliably and validly assess which competencies need the most attention, which improves with training, and which need further development. Not every competency that is associated with high-quality care for those with SMI is included in this instrument. This is because the instrument had to be short enough to be practical for use in clinical practice. Also, the competencies were specifically chosen to represent rehabilitation, recovery, and empowerment principles, which are aspects of care that are critical to the treatment of patients with SMI but are often lacking in public settings.

METHODS

Data Collection

Data collection took place at 38 therapeutic settings within five publicly financed treatment organizations under a behavioral managed care company in two western states. These settings provide a range of services including groups, assistance for clients' family and friends, service coordination and referrals to other community agencies, assistance with daily living skills, education about symptom management skills, supportive and insight-oriented psychotherapy, job and housing assistance, assertive outreach, and residential services. Clinic administrators identified 341 providers who were delivering services to clients with SMI as potential participants in the study. These providers were asked to complete a paper-and-pencil survey containing Competency Assessment Instrument (CAI), demographic questions, the Recovery Attitudes Questionnaire—7 (RAQ-7), and the Client Optimism Scale at baseline and again 2 weeks later. The latter two scales were included in the survey to address the validity of CAI. Those providers who agreed were asked to read and sign a written informed con-

sent form describing the project. Providers completed the survey in an average of about 18 min, either at team meetings or individually. The Institutional Review Board at RAND approved the project.

A total of 269 clinicians out of the 341 identified completed the baseline survey (response rate of 79%). The response rate for each of the settings at baseline ranged from 0 to 100%, with the median clinic response rate of 88% (i.e., two settings with a total of 13 potential participants had 0% response rate at baseline). The response rate of the 2-week administration for each of the settings ranged from 33 to 100%, with an overall response rate of 83% ($N = 279$) and a median setting response rate of 89%. Of the 269 participants who completed the baseline survey, 261 (97%) completed the survey at 2 weeks.

Sample Characteristics

At baseline, 269 providers completed the survey. The sample was predominantly White (52%), female (50%), and had either a high school or college education (total of 56%). Most (60%) of the group was front line clinical staff (mental health worker, case manager, residential staff, clinician/therapist), with some representation from psychiatrists and administrators (see Table 1). However, about 23% ($N = 77$) of the respondents did not provide demographic information. Providers were asked to respond "yes" or "no" to questions about 16 job duties they may perform. Over two thirds of the group stated that they teach daily living skills, interact with clients' family and friends, accompany clients into the community, provide crisis intervention, and teach clients medication skills. Less than a quarter stated that they help clients find housing, help clients find jobs, administer, or prescribe medications (most were not an MD), seek clients who left treatment, provide alcohol or drug treatment, or provide physical examinations.

Measures

The Competency Assessment Instrument

The initial goal of CAI was to measure a subset of the 37 provider competencies developed by Young et al. (2000) that were viewed as central to recovery-oriented care, relatively easy to change, and not prevalent among providers. Identifying competencies for measurement with these traits would highlight areas

Table 1. Clinician Participant Demographics

Demographic	Percent	N
Race/ethnicity		
African American	7	24
American Indian	2	7
Asian American	<1	1
White	52	178
Hispanic	11	38
Other	3	11
Missing	24	81
Gender		
Female	50	171
Male	27	90
Missing	23	79
Education level		
High school and some college	32	110
College graduate	24	80
Master's level	15	51
MD/PhD/PsyD	2	5
Other	7	22
Missing	21	72
Job title		
Case manager	8	26
Residential staff	21	70
Psychiatric nurse	4	13
Mental health worker	12	42
Clinician/therapist	25	84
Psychiatrist	1	2
Administrator	8	26
Missing	23	77
Mean number of years in mental health (<i>SD</i>)	8.52 (7.87)	266

that were the most amenable to change through quality-improvement interventions and would yield the largest impact on the quality of care. In the earlier project developing the competency set (Young et al., 2000), the 15 selected for CAI were rated as being between extremely and very important ($M = 1.5$, $SD = 0.3$, on a 9-point scale, 1 = *extremely important*), occurring in providers between some of the time and rarely ($M = 5.4$, $SD = 0.5$, on a 9-point scale, 1 = *most of the time*), and moderately easy to impact ($M = 5.0$, $SD = 0.8$, on a 9-point scale, 1 = *very easy*). The 15 competencies selected were as follows: functional assessment, critical stresses, client preferences, outreach, holistic approach, goals, education, rehabilitation, self-advocacy, natural supports, respect, stigma, family involvement, medication management, teamwork, and community resources.

Scales were developed by the authors to assess these 15 competencies. Items from established scales such as the Clinician Background Questionnaire (CBQ; Meredith et al., 1999) and the Case Manager Activity Scale (CMAS; Young, Grusky, Sullivan,

Webster, & Podus, 1998) were incorporated. The CBQ rates primary care clinicians on their competency in treating clients with depression, and the CMAS assesses how often case managers perform family management, service linkage, and assertive outreach activities. Additional surveys (Peabody, Luck, Glassman, Dresselhaus, & Lee, 2000) were examined and provided guidance on how to develop new clinical vignettes. Items were written to assess competencies in an indirect manner to minimize social desirability. Demographic questions assessing race/ethnicity, gender, education level, job title, job duties, and number of years in mental health were included. The draft CAI included a combination of vignettes, Likert scales, and multiple-choice items, all requesting a numerical response on a 5-point scale. The only exceptions were three items in the Rehabilitation scale that asked respondents to estimate what percentage of their current caseload would benefit from various rehabilitation service activities.

A final draft version was pilot-tested with 23 individuals in the Los Angeles area. The group was composed of mental health professionals including a psychiatrist, a clinician/manager, a research staff, clinicians working in a rehabilitation/assertive treatment program, and mental health clinicians working in a variety of roles. On the basis of data from the pilot test, items were deleted, modified, and added as needed to improve the readability and face validity of the instrument. This resulted in a 102-item instrument, distributed across 15 scales (see Table 2).

Recovery Attitude Questionnaire—7

The RAQ-7 is a seven-item instrument with two scales that assess the degree to which the respondent believes that recovery requires faith (four items), is difficult, and differs among different people (three items), and a total RAQ-7 score, which assesses an overall recovery orientation. Among 844 clients, mental health professionals, students, and family members, the faith, difficulty, and total scales had Cronbach's α s = .66, .64, and .70, respectively. Over a 3-week period, test-retest coefficients of the total score ($r = .67$) and two subscales, Recovery Requires Faith ($r = .61$) and Recovery is Difficult ($r = .62$), were found to be adequate (Borkin, Steffen, Ensfield, et al., 2000). The total RAQ-7 score was recommended instead of the two scale scores because the total had slightly better internal consistency and stability.

Table 2. CAI Scale Domains and Definitions

Competency scale domains	Competency scale definitions
1) Goals	Assists clients in acquiring the skills needed to get and keep chosen goals
2) Stress	Helps clients recognize and cope with stressors that trigger deterioration
3) Client preferences	Learns and respects their clients' preferences regarding treatment
4) Intensive case management	Leaves the office to help clients obtain services and housing
5) Holistic approach	Elicits clients' life experiences in a trusting atmosphere
6) Family education	Educates family members and other caregivers about mental illness
7) Rehabilitation	Practices professionally accepted psychiatric rehabilitation
8) Skill advocacy	Creates opportunities for clients to practice skills
9) Natural supports	Encourages clients to choose, find, and use their own natural supports
10) Stigma	Works with clients to cope with being stigmatized
11) Community resources	Refers clients to local employment, self-help, and other rehabilitation programs
12) Medication management	Teaches clients symptom and side-effect self-monitoring skills
13) Family involvement	Involves family members and helps them cope effectively
14) Team value	Provides services as part of a strongly coordinated team
15) Evidence-based practice	Focuses on services that have been demonstrated to improve outcomes

Clinician Optimism Scale

This is a seven-item instrument assessing the degree to which providers in community mental health systems believe that their clients will improve and have positive outcomes. The scale has previously demonstrated adequate reliability with case managers in a public mental health system in a large southern California county (Cronbach's $\alpha = .62$; Grusky, Tierney, & Spanish, 1989).

Analyses

All the analyses utilized the baseline CAI, RAQ-7, and Client Optimism data except the test-retest analyses, which also utilized the 2-week data. Using the multitrait scaling method, we evaluated each of the 15 scales using the baseline CAI data according to three criteria (Ware, 1984): a) the degree to which each item in a scale is related to the other items in that scale, or the "item-to-total" correlation, at the threshold, $r \geq .4$ (item convergent validity); b) whether or not any item correlates with another scale more than its own scale (item discriminant validity); and c) the extent to which items within a scale have equivalent variances. When these conditions are met, it is appropriate to combine items into scales as hypothesized. To prepare the data for the psychometric analyses, the Likert and the percentage questions in the Rehabilitation Scale were rescaled from 0 to 1, with 1 indicating complete competency and 0, no competency, and several items were reverse-coded.

We assessed the internal consistency reliability of all the scales at baseline with Cronbach's alpha. To

assess whether the scales were measuring the distinct constructs as hypothesized, we conducted bivariate correlations among all the scales, and for any scales that had higher than $r > .5$, we conducted a factor analysis with those two scales using a varimax rotation and examined the factor loadings and eigenvalues. The test-retest reliability (intraclass correlation) was calculated using the baseline and 2-week data from a subsample of providers ($n = 118$). In addition, to assess the potential shift in means from baseline to 2 weeks, paired samples t tests were conducted on all CAI scales, the total CAI score, and the Optimism and RAQ-7 scales using the same subsample of providers. This group of providers was not receiving a quality-improvement intervention that was being delivered at half of the sites after the baseline survey administration; therefore, these individuals were not expected to change on the competency assessment at 2 weeks and as such, were appropriate for use in the test-retest analyses.

Concurrent validity, or the degree to which CAI results agree with other constructs commonly coexisting with what the CAI measures, was assessed with t test analyses. These analyses used baseline data to compare the mean competency scores on each scale of providers who had either a high school degree or some college ($N = 110$) versus those who had a BA, MA, PhD/PsyD, or MD ($N = 135$). We hypothesized that results of CAI, as a measure of competency, would agree with the education-level construct so that those with more advanced training would have higher competencies as measured by CAI. To eliminate the confound that the more educated group had spent more years in mental health than the less educated group, $M = 9.70$, $SD = 8.47$, versus $M = 7.28$, $SD = 7.16$,

$t(243) = -2.37, p = .018$, we included years in mental health as a covariate for these comparisons.

Using baseline data, the CAI total score was correlated with RAQ-7 and Optimism scales to assess its construct validity, or its ability to have its results correlate with other related constructs, in the expected manner. Central to CAI is its emphasis on recovery, self-help, rehabilitation, and the prospect of improvement, and therefore it was desirable to include in the survey battery, established measures that also address these concepts. The RAQ-7 explicitly focuses on the notion of “recovery,” or the idea that persons can regain purpose and meaning in life while having a serious mental illness, and acknowledges that clients can play a valuable role in helping one another. The Optimism scale was included because the attitude that clients with SMI can in fact improve is necessary among providers promoting rehabilitation and recovery. Therefore, it was expected that CAI would correlate significantly with RAQ-7 and the Optimism scales.

RESULTS

Multitrait Scaling

Item Convergent Validity

We used the item convergent validity criteria to streamline CAI. Most items with low item-to-total coefficients ($r < .4$) were eliminated from the scales, which reduced the total number of items from 102 to 55. Four scales (Client Preferences, Natural Supports, Stigma, and Team Value) were allowed to retain items with item-to-total correlations less than .4 to avoid reducing these scales to less than three items. After inspecting all the interitem correlations, we moved some items and created new scales. Related items from Goals and Functional Assessment were merged into a Goals Assessment scale, which assessed the degree to which clinicians assess goals in relation to functioning. Poorly functioning items in the Community Resources scale were combined with an Outreach item to form an Intensive Case Management scale, which assesses the degree providers will leave their offices and offer case management services to assist clients to obtain benefits and housing. Two items from Self-Advocacy and two items from Family Education were added to an item from Natural Supports to form a Teaching Skills & Self-Advocacy scale, which assesses the degree to which providers teach their

clients medication, rehabilitation, and self-advocacy skills. Items from the Outreach, Rehabilitation, Medication Management, and Family Involvement scales were put together to form an Evidence-Based Practice scale. This scale assesses the degree to which providers are competent along different evidence-based practices including involving the family, medication prescribing, and assertive outreach.

The Medication Management scale was not sufficiently improved applying the above strategies. Because this is an important competency, it was decided to retain the best items, two items assessing providers’ beliefs that medications can dramatically reduce symptoms and that clients can learn medication self-management skills. Out of the 15 revised scales, 9 met the item convergent validity criteria (i.e., all items had item-to-total correlations greater than .4). Five scales (Team Value, Natural Supports, Stigma, Client Preferences, and Rehabilitation) included items with item-to-total correlations less than .4 (see Table 3).

Item Discriminant Validity and Equivalent Variances

Using the revised scales, correlations between each scale’s items and the other scales indicated that all items correlated more highly with their own scale than with any other scale, demonstrating good item discriminant validity. The variances of all the items within the scales were very similar, thus, nine of the revised scales met all three criteria of the multitrait method.

Internal Consistency and Scale Properties

Parallel to the results of the multitrait method, the reliability analyses showed 9 of the 15 revised scales had Cronbach’s alphas over .7, a standard threshold for an adequate level of internal consistency (Nunnally, 1978). Table 3 shows all the scale means and standard deviations for the revised CAI scales, internal consistency alphas, and the results of the multitrait method analyses. Also included in Table 3 is the total CAI scale score, which was created by adding together all 15 CAI scales into one score. The total CAI scale had a Cronbach alpha of .90. The full range of scores was observed for 9 of the 15 revised scales. The total CAI score ranged from .24 to .79. Eleven of the scales and the total CAI score were symmetrical. Three scales (Intensive Case Management, Family

Table 3. CAI Scales, Means (*SD*), and Psychometric Properties

CAI scales	<i>N</i>	Scale mean (<i>SD</i>)	# of items	Internal consistency: (Cronbach's α)	Items with item-to-total correlations less than .4	Items with a higher correlation to another scale	Correlation with RAQ-7	Correlation with Optimism Scale	Test-retest reliability (intraclass correlation) ^a
Goals	263	0.62 (0.28)	3	.90	0	0	.25	.21	.59
Stress	268	0.58 (0.28)	4	.93	0	0	.20	.12	.64
Client preferences	268	0.64 (0.15)	4	.60	2	0	.46	.39	.69
Intensive case management	260	0.25 (0.23)	3	.80	0	0	.13	.25	.70
Holistic approach	267	0.54 (0.19)	4	.75	0	0	.31	.28	.58
Family education	269	0.37 (0.18)	4	.84	0	0	.12	.22	.60
Rehabilitation	266	0.56 (0.20)	5	.67	3	0	.27	.22	.72
Skill advocacy	267	0.49 (0.23)	5	.78	0	0	.17	.18	.60
Natural supports	254	0.31 (0.20)	3	.54	3	0	.16	.17	.53
Stigma	268	0.79 (0.17)	3	.57	2	0	.35	.03	.64
Community resources	261	0.52 (0.19)	3	.74	0	0	.27	.07	.63
Medication management	267	0.56 (0.19)	2	— ^b	— ^b	0	.32	.20	.41
Family involvement	261	0.23 (0.20)	3	.85	0	0	.23	.25	.68
Team value	267	0.70 (0.15)	4	.52	4	0	.20	.15	.50
Evidence-based practice	262	0.46 (0.15)	5	.79	0	0	.43	.38	.59
Total CAI	254	0.51 (0.10)	55	.90	29	—	.51	.47	.79
Optimism	259	0.41 (0.17)	5	.77	0	0	.27	1.0	.73
RAQ-7	268	0.73 (0.12)	8	.68	3	0	1.0	.27	.66

^aTest-retest analyses were conducted only on those in the comparison group, *N* = 118.

^bCronbach's alphas and item-to-total correlations cannot be computed with just two items in a scale.

Involvement, and Natural Supports) had a significant positive skew; with 90% of the respondents scoring less than .5. One scale, Stigma, was significantly negatively skewed with approximately 75% of the group scoring .67 or higher.

Bivariate Correlations and Factor Analyses

There were two instances in which two of the revised CAI scales correlated with each other higher than .5: Goals and Stress ($r = .62, p = .000$) and Family Involvement and Intensive Case Management ($r = .58, p = .000$). In both exploratory factor analyses, the scree plot of the eigenvalues (Catell, 1966; Zwick & Velicer, 1986) and the rotated factor loadings (varimax rotation) showed that the two scales were distinct (factor loadings and eigenvalues not shown).

Test-Retest Reliability

There were 19 participants who only completed the 2-week survey and these individuals were eliminated from the test-retest analyses. Over a 2 week

period, the test-retest reliabilities (intraclass correlations) for the 15 revised CAI scales (see Table 3) were adequate, ranging from .41 (Medication Management) to .72 (Rehabilitation), with an average of .61 ($SD = 0.08$). The total CAI score had very good test-retest reliability (.79), and the two previously existing scales, RAQ-7 and Optimism, had test-retest reliabilities of .66 and .73, respectively. The paired samples *t* tests yielded no significant differences between the baseline and 2-week assessments on all 15 CAI scales, the total CAI score, or the Optimism scale. Only the mean score of RAQ-7 changed significantly between the two time periods, $M_{BL} = 0.72 (SD = 0.12)$ versus $M_{2wk} = 0.69 (SD = 0.11)$; $t(110) = 2.85, p = .005$.

Validity Analyses

Those with more education and training scored significantly higher ($p < .05$) on 11 out of the 15 competency scales after adjusting for years in mental health. The scales Skills Advocacy, Stigma, Community Resources, Team Value were in the same direction, but not significant. The CAI total score showed

significant correlations with both the RAQ-7 ($r = .51$) and Optimism scales ($r = .47$).

DISCUSSION

The authors' goal was to develop a survey of provider competencies that support recovery, empowerment, and rehabilitation for clients with SMI. To measure these domains effectively, CAI needed to include a wide range of competencies, be short enough to use in busy clinical settings and quality-improvement efforts, and be psychometrically sound. The 55-item CAI meets these objectives, with 9 of the 15 subscales meeting all three criteria of the multitrait scaling method and having good reliability. Reasons for some of the scales not meeting these criteria include combining questions with either different response choices, two dimensions within a single scale (e.g., Stigma, Natural Supports, Team Value), or uncertainty about which response direction indicated competency. The average completion time for the larger set of items was 18 min; therefore, it is expected that the completion time for the final 55 items will be dramatically lower, making it easy to use in clinical practice and research. Also, the CAI scale means and total CAI score mean tap the full range of competency levels. Therefore, CAI displayed both breadth and depth of measurement, while allowing for self-administration within a reasonable amount of time. The test-retest reliability of the CAI scales over a 2-week period ranged from *adequate* to *good*, with the overall CAI score mean demonstrating excellent stability between the two periods. Additionally, none of the means for the CAI scales or the total CAI score changed significantly between the two time periods.

Results also support the concurrent and construct validity of CAI. As expected, providers with more education and training tended to have higher competency scores. Also, across all the competency domains, providers seem to need the most improvement in working with families (Family Education, Family Involvement) and delivering community-based case management services (Intensive Case Management, Natural Supports). The low competency levels in these areas are consistent with prior research that shows that little effort is paid to the involvement of caregivers in typical public care settings (Dixon et al., 1999; Meredith et al., 1999) and that clients with SMI who need more intensive case management often do not receive it (Young, et al., 1998). Finally, the CAI total score correlated positively with

RAQ-7 and with the Optimism measure, two instruments that tap similar dimensions as CAI.

The demonstration that the competencies of providers who serve clients with SMI can be reliably measured is a useful methodological development as these types of competency sets can be used to improve care for clients with SMI. Cutting across professional disciplines, a single competency set for the treatment of people with SMI can be used in provider profiling, in which the recruitment and hiring of providers is based on matching the assessed competency levels of applicants to the requirements of the particular clinical job. Competency assessments could improve the efficiency of educational efforts, tailoring trainings to areas in which providers show the greatest need. These assessments could also be used to evaluate the effectiveness of quality-improvement interventions designed to improve services through the training of providers. Finally, CAI could be applied to multidisciplinary treatment teams to ensure that all the competencies needed for high-quality care are found within the team collectively. Teams in which providers have varying competency levels in different domains, but all domains are represented collectively, may be the best and most realistic way to provide a wide array of high-quality services (Lieberman, Hilty, Drake, & Tsang, 2001).

Certain limitations of this study should be noted. First, because CAI is a self-report instrument, it is possible that providers inflated their competency scores. However, CAI items were written to specifically minimize social desirability bias and names were never put on hard copies of the surveys to enhance confidentiality. To further explore this issue, future studies could administer CAI along with various objective measures and observations of providers by supervisors. Second, this study did not link provider competency levels to client service utilization or outcomes. This study represents the first step in the development of a reliable and valid provider competency measure, and future research should attempt to establish a direct relationship between CAI and client outcomes, including documenting CAI's sensitivity to change over time. Similarly, it would be useful to assess the CAI's relationship to patient and family assessments of satisfaction, in addition to assessments of appropriateness of services and quality of care. Third, the study participants are a heterogeneous sample of providers ranging from those with advanced degrees to others who are frontline staff with less training. While future research should examine how certain provider types perform on CAI, it is useful to have a variety

of providers included in the sample as the competencies are designed to cut across disciplines. Finally, CAI does not include all competencies associated with high-quality care. Instead, competencies were specifically chosen to represent rehabilitation, recovery, and empowerment principles found to be critical to the treatment of patients with SMI but often lacking in public settings.

One-time educational efforts, such as lectures and courses do little to change provider behavior (Oxman, Thomson, Davis, & Haynes, 1995). This is particularly true when the provider organization or

healthcare systems do not support the use of new competencies. Competency improvement efforts must be permanent features of care provision, and need to be combined with reorganization of care that supports appropriate delivery of critical services. There is pressing need for care models that provide effective rehabilitation, and support empowerment and recovery in clients. However, these improvements require a different competency set than current providers often possess. It will be important to implement methods for measuring these competencies, so that they can be targeted for improvement.

Appendix : CAI Items*

Scales	Items
Goals	Assessed the client’s level of functioning in relation to a personal goal Discussed the client’s strengths and weaknesses in relation to a personal goal Discussed strategies to help the client achieve their goals
Stress ⁶	Helped the client identify people who can assist them during a crisis Identified triggers that cause the client’s symptoms to get worse Identified warning signs that come before the client gets symptoms Helped the client decide how to respond to triggers and warning signs
Client preferences ⁷	It is sometimes necessary to disregard a client’s preferences in order to provide the best treatment Every behavioral health provider needs to know their clients’ preferences about the selection of psychiatric medications Respecting clients’ choices improves their functioning Almost all clients can learn how to make well-informed choices about their care
Intensive case management ⁸	Leaving the office with clients to help them obtain housing or benefits Helping clients find more programs, entitlements, or services Assisting clients when agencies deny them services or benefits
Holistic approach ⁷	The diagnosis of a client affects whether rehabilitation is possible It is best to keep my work with clients focused on their mental illness Whether a client can return to work is related to how strong their psychotic symptoms are The goals of “normal” people are often too stressful for clients
Family education ⁹	How confident are you about providing education to family members about psychiatric illness How confident are you about providing education to family members about medication treatment How confident are you about providing education to family members about rehabilitation How confident are you about providing education to family members about mutual support groups
Rehabilitation	⁷ Try to direct client towards more practical ideas that don’t involve horses (<i>relating to a clinical vignette</i>) ⁷ Acknowledge her interest, but don’t intervene since her goal does not seem realistic (<i>relating to a clinical vignette</i>) ¹⁰ What percentage of all your clients could benefit from rehabilitation services that are designed to substantially improve their functioning? ¹⁰ What percentage of all your clients could benefit from rehabilitation services that specifically focus on work? ¹⁰ What percentage of all your clients are currently receiving rehabilitation services that focus on work?
Skill advocacy	¹¹ How often do you arrange activities in which clients can practice making decisions (for instance, shopping or opening a bank account)? ¹¹ How often do you assist clients in maintaining activities that are meaningful to them? ¹¹ How often do you teach clients confidence-building and self-advocacy skills? ⁸ How often do you usually teach clients about medication and the symptoms of their illness? ⁸ How often do you usually teach clients about rehabilitation?

*To download the CAI instrument and scoring directions, go to <http://www.mirecc.org/research-news.shtml>.

Appendix : (Continued.)

Scales	Items
Natural supports ¹²	How many of your clients are involved in 12-step groups such as AA or Double Trouble? How many of your clients are involved in mutual support groups? How many of your clients are involved in hobby clubs or other organized social groups?
Stigma ⁷	Clients with mental illness experience discrimination every day I am aware of common stereotypes about people with mental illness The stress of discrimination often causes clients' symptoms to increase
Community resources ¹³	How often does the presence of too few programs that help people obtain employment interfere with improving your client's functioning? How often does the difficulty of getting clients accepted into rehabilitation programs interfere with improving your client's functioning? How often does the lack of self-help groups interfere with improving your client's functioning?
Medication management ⁷	All clients can learn to accurately identify psychiatric symptoms and medication side effects With correct use of medication, symptoms can be reduced to very low levels in almost all clients
Family involvement ⁸	Teaching family members about mental illness Gathering information from family members or friends Helping family members cope with stress
Team value ⁷	Mental health professionals from other agencies are usually included when we problem solve about particular clients I often don't have enough time to coordinate services between the various members of the treatment team I can have other staff members assist with my clients when those staff member have a particular skill We have regular meetings as a team to problem-solve about particular clients
Evidence-based practice ¹⁴	How effectively does providing intensive treatment in the community (not at clinics and offices) improve outcomes in your clients? How effectively does educating and helping family and friends improve outcomes in your clients? How effectively does teaching the client how to improve their daily functioning improve outcomes in your clients? How effectively does completing a structured diagnostic assessment improve outcomes in your clients? How effectively does adjusting, when necessary, the dosage of psychiatric medication improve outcomes in your clients?

⁶1 = All clients to 5=few or no clients.

⁷1 = Strongly agree to 5 = Strongly disagree.

⁸1 = Several times a day to 5 = Never.

⁹1 = Completely confident to 5 = Little or no confidence.

¹⁰0 to 100%.

¹¹1 = All the time to 5 = Rarely or never.

¹²1 = All to 5 = None.

¹³1 = Always a problem to 5 = Never a problem.

¹⁴1 = Extremely effective to 5 = Little or no effect.

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