Validity of Assessing Treatment Readiness in Patients With Substance Use Disorders

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The Recovery Attitude and Treatment Evaluator–Clinical Evaluation (RAATE–CE) assesses resistance and impediments to addiction treatment participation. The authors conducted a preliminary test of the RAATE–CE's predictive validity. Addiction counselors conducted RAATE–CE assessments on 220 adults who were newly admitted to a hospital detoxification unit. Relationships between scores and disposition were examined using analysis of variance. All RAATE–CE dimensions show significant associations with subsequent treatment placements in the expected directions. Preliminary findings of predictive validity warrant further research on the RAATE–CE for clinical research and treatment planning. (American Journal on Addictions 1995; 4:254–260)

Treatment expectations, motivation, and impediments are frequently mentioned as important to treatment.[1–4] They also are frequently called into question during third-party precertification and utilization reviews.[5] Providers must verify these characteristics to insurers, yet they lack a reliable and valid method for evaluation.

This preliminary study was designed to investigate the predictive validity of an instrument designed to assess addiction treatment readiness and impediments, the Recovery Attitude and Treatment Evaluator–Clinical Evaluation (RAATE–CE). The instrument consists of 35 fixed-interval items with five dimensions pertinent to treatment planning decisions: A) degree of resistance to treatment; B) degree of resistance to continuing care; C) acuity of biomedical problems; D) acuity of psychiatric problems; and E) extent of social/family environmental problems unsupportive to recovery.[6] Each of the dimensions is composed of 5–10 items, such as A) Does the patient demonstrate a commitment to seeking help or treatment? B) Does the

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patient realize that recovery is an ongoing process requiring personal responsibility? C) Does the patient have a chronic physical condition or disability that interferes with treatment or recovery efforts? D) Is the patient able to focus on addiction treatment even if he/she has psychiatric/psychological symptoms? E) Is the work/school system accommodating or supportive of the treatment/recovery program? All items are graded on a Likert-type scale from 1 to 4 in which a low score indicates greater treatment readiness.[7,8]

In conceptualizing the RAATE–CE, Mee-Lee[7,8] sought to develop a predictor of treatment failure and relapse that would have the clinical purpose of indicating which patients would require intervention, relapse prevention services, and environmental support. Mee-Lee described the need for an addictions "vital signs" measure—an economic, quantitative, multifaceted, cross-sectional view of the patient's condition. Revisions could be made at any adjustment of treatment to reflect the resulting changes in that condition. Mee-Lee also proposed a need for a staging system that would guide treatment planning according to disease prognosis, analogous to the staging of heart disease or carcinoma.

So far, relatively limited effort has been made to implement measurement of patient motivation and resistance in substance use disorders, either in terms of assessment[9–12] or outcome research.[13–16] The National Institute on Alcohol Abuse and Alcoholism (NIAAA) published *Alcoholism Treatment Assessment Research Instruments*, a compendium of 45 instruments; many of these used severity rating, but few or none addressed treatment readiness.[17] In a review of 36 studies that attempted to develop accurate outcome prediction scales for alcohol treatment, almost all considered drinking behavior history and sociodemographic characteristics but omitted treatment readiness.[18] More recent work derived from smoking cessation research has been directed at measuring internal motivation for changing addictive behaviors[19] and at therapeutic strategies for influencing these behaviors at discrete stages.[20] The RAATE–CE was developed to assess treatment readiness in terms of beliefs and behavioral efforts that are individual-based as well as external circumstances that either pose impediments or are conducive to recovery.

The RAATE–CE, like the Addiction Severity Index (ASI),[9] is multidimensional, suitable for serial use over the course of recovery, and includes both biomedical and psychiatric dimensions. Both instruments use a combination of patient and clinician data sources to enhance accuracy. The RAATE–CE differs from the ASI, however, in that the ASI emphasizes the degree of recent substance abuse and consequences, whereas the RAATE–CE includes some of these areas but emphasizes issues of denial, social obstacles, and response to treatment. These areas may be more informative for such decisions as patient placement (e.g., inpatient vs. outpatient) and treatment modality (e.g., peer counseling vs. psychotherapy). Also, because the RAATE–CE was developed on inpatient units populated by a broad clinical caseload rather than a more homogeneous addict population, it may offer a broader range of assessment than the ASI.

Prior study of the RAATE–CE has demonstrated acceptable interrater reliability (between 0.59 and 0.77 across the five dimensions) and internal consistency (between 0.65 and 0.87) in 139 publicly funded, high-severity inpatients.[21] The RAATE–CE has generated interest among addiction treatment professionals on the basis of its perceived face validity. Interestingly, even before the scale received a thorough validation, RAATE–CE training courses were presented at the American Society of Addiction Medicine, at treatment or clinical research programs in eight cities, and at state agencies in Florida and

Pennsylvania (David Mee-Lee, personal communication). The publisher reports that over 250 requests have been received for the instrument and related materials from sources in 34 U.S. states, Canada, Colombia, Mexico, the Netherlands, and Spain, and the instrument is known to be in routine clinical use at 16 treatment and employee-assistance programs (Norman Hoffmann, New Standards, Inc., personal communication).

As a result of this need, an initial study was designed to evaluate the usefulness of the RAATE–CE as a predictor of clinical outcomes. This initial study examined the relationship between RAATE–CE scores at the beginning of inpatient detoxification treatment and subsequent disposition status (as a proxy for outcome). This time frame was chosen because it is of critical importance in treatment planning, yet it is an increasingly brief period under the pressure of current fiscal constraints. If admission RAATE–CE scores were significantly elevated in the patients who, upon discharge, would require continued care in high-intensity settings, this finding would provide preliminary evidence for the predictive validity of the instrument.

METHODS

Setting and Subjects

The study was conducted on the inpatient addictions unit of an 88-bed addiction treatment hospital (Parkside Lutheran Hospital; Park Ridge, IL), admitting on the basis of a clinical diagnosis of substance dependence (using DSM-III-R criteria). All patients required inpatient detoxification and received an RAATE–CE assessment in the first 48 hours of admission. Of 409 patients admitted over a 3-month period, only those whose length of stay exceeded 48 hours and who could therefore yield a RAATE–CE assessment and complete basic laboratory panel were included.

Procedures

The counseling staff of the detoxification unit received 2 hours of lecture in the use of the RAATE–CE. Other measures collected included demographic, clinical, and physiologic variables. Subjects' discharge dispositions were recorded by a research assistant after agreement was achieved between the multidisciplinary treatment teams and the subjects. Discharge dispositions included 1) remaining on the unit for intensive medical rehabilitation (Parkside Lutheran Hospital) or general hospital admission (Lutheran General Hospital); 2) nonmedical residential ("social model") rehabilitation (Parkside Lodge of Mundelein); 3) outpatient counseling; or 4) home/self-help. A fifth discharge disposition, leaving against medical advice (AMA), was also noted.

Statistical Analysis

Results for each comparison were reported on the total number of subjects for whom complete data were available. Pearson product-moment correlations were used for interscale correlations. Relationships between scores on the five RAATE–CE dimensions vs. type of primary substance dependence or vs. disposition were evaluated using analysis of variance. Tukey's honestly significant difference was used as a conservative test for post hoc analysis of significance.

RESULTS

RAATE–CEs were administered to 220 newly admitted men (66%) and women (34%) with a mean age of 38.9 ± 12.6 years. Alcohol was the primary substance dependence in 57% of the sample; combined

alcohol and drug dependence was identified in 22%; and drug dependence alone was the primary dependence in 21%. After alcohol, the second most frequent agent of abuse was cocaine (in 17% of the sample), then heroin (5%), prescription sedatives (5%), opiates other than heroin (2%), and marijuana (2%). Some prior treatment was reported by 52% of the sample. The educational level of subjects included at least some college experience in 58%; only 12% reported less than a high school education. The living situation of 43% included a spouse, and 22% reported living with parents. Only 22% reported living alone.

RAATE–CE Subscale Intercorrelations

Interscale correlations between most subscales were weak, as expected; however RAATE–A: Resistance to Treatment was strongly correlated with RAATE–B: Resistance to Continuing Care ($r = 0.727$; $P < 0.001$).

Predictive Validity

The results of the counselor's initial RAATE–CE assessments in comparison with subjects' actual discharge disposition are presented in Table 1. The data indicate that, upon admission, all five RAATE–CE dimensions produced significant *F*-test results for eventual disposition, and four of the subscales showed significant post-hoc contrasts.

Approximately half of the patients (53%) were retained after detoxification for in-hospital rehabilitation. For this group, intake RAATE–CE scores indicated more Resistance to Treatment in general and significantly more Resistance to Continuing Care than those who could be discharged to residential ($P = 0.046$) or outpatient ($P = 0.016$) treatment. Biomedical Acuity for the group who remained in the hospital was initially rated as more severe than for all other groups and significantly more severe than those

TABLE 1. Differences in mean RAATE-CE scores by discharge disposition, ± SD ($N = 210$)

RAATE-CE Subscale (n)	Hospital (115)	Residential (31)	Outpatient Follow-up (34)	Home Without Treatment (9)	Left AMA (21)	F	P
A: Resistance to Treatment	13.7 ± 4.7	12.2 ± 4.1	12.0 ± 3.9	15.7 ± 4.8	14.5 ± 4.1	2.61	0.037
B: Resistance to Continuing Care	15.0 ± 3.3[a]	13.2 ± 3.1	13.0 ± 3.3	12.9 ± 4.1	15.3 ± 2.7[b]	4.51	0.002
C: Biomedical Acuity	13.5 ± 4.9[c]	10.4 ± 4.1	11.5 ± 5.2	8.8 ± 3.5	11.7 ± 5.0	4.45	0.002
D: Psychiatric Acuity	17.0 ± 5.5[d]	13.3 ± 4.2	13.5 ± 4.0	14.2 ± 4.9	17.4 ± 5.0[e]	5.78	< 0.001
E: Social/Family Environmental Status	25.9 ± 5.4[f]	20.9 ± 5.4	22.4 ± 5.4	22.7 ± 6.7	27.9 ± 5.9[g]	8.72	< 0.001
Total	85.1 ± 13.9[h]	69.9 ± 14.9	72.1 ± 14.8	75.2 ± 18.2	86.9 ± 12.9[i]	11.59	< 0.001

Note: RAATE–CE = Recovery Attitude and Treatment Evaluator–Clinical Evaluation; AMA = against medical advice.
[a] hospital > residential ($P = 0.046$) > outpatient ($P = 0.016$).
[b] AMA > outpatient ($P = 0.071$).
[c] hospital > outpatient ($P = 0.014$) > home ($P = 0.040$).
[d] hospital > residential ($P = 0.003$) > outpatient ($P = 0.004$).
[e] AMA > residential ($P = 0.031$) > outpatient ($P = 0.041$).
[f] hospital > residential ($P < 0.001$) > outpatient ($P = 0.011$).
[g] AMA > residential ($P < 0.001$) > outpatient ($P = 0.003$).
[h] hospital > residential > outpatient ($P < 0.05$).
[i] AMA > residential > outpatient ($P < 0.05$).

discharged to outpatient treatment ($P = 0.014$) or to home without professional treatment ($P = 0.040$). The hospital group had significantly greater Psychiatric Acuity ratings initially than those discharged to residential ($P = 0.003$) or outpatient ($P = 0.004$) treatment. The hospital group also scored significantly higher on Social/Family Environmental Status than those discharged to residential ($P < 0.001$) or outpatient ($P = 0.011$) treatment.

Twenty-one patients left treatment AMA during detoxification (but after RAATE–CE assessments were completed). At the initial assessment, this group had received high scores on Resistance to Treatment, and there was a trend for this group to have higher scores on Resistance to Continuing Care than those who were discharged to outpatient treatment ($P = 0.071$). Patients who left AMA had less Biomedical Acuity than those who remained in the hospital. In contrast with Biomedical Acuity, the AMA group had the highest initial scores of all groups on Psychiatric Acuity, and significantly higher scores than those discharged to residential ($P = 0.031$) or outpatient ($P = 0.041$) treatment. The AMA group also had the highest scores on Social/Family Environmental Status and these were significantly greater than scores for those discharged to residential ($P < 0.001$) or outpatient ($P = 0.003$) treatment.

Sixty-five patients who completed detoxification and were discharged from the hospital (i.e., did not continue with inpatient rehabilitation) accepted some form of continuing care. These patients had been rated on admission with low mean resistance and acuity scores on all RAATE–CE dimensions. Group mean differences did not differentiate between those discharged to residential vs. outpatient treatment, however. Statistical differences on most RAATE–CE dimensions did not emerge for patients discharged home without professional treatment; however, only nine patients fell into this category. This was a heterogeneous group that included both patients who were judged to require only community mutual-help group support and patients who rejected professional treatment.

DISCUSSION

In this preliminary study of the validity of the RAATE–CE for predicting treatment failure, significant findings on RAATE–CE Dimensions B, C, D, and E all showed associations with subsequent treatment discharges in the expected directions. These findings provide initial support for the predictive validity of the instrument and suggest that the RAATE–CE may have clinical utility in treatment planning, a purpose for which it was designed.

This study tested the RAATE–CE's ability to predict treatment dropout and the need for intensive treatment. Predictive validity was demonstrated by comparing initial RAATE–CE scores with discharge dispositions after detoxification. These treatment outcomes were studied naturalistically and represent the range of options accessible and commonly utilized from the inpatient detoxification unit. Significant findings on the RAATE–CE dimensions demonstrated group differences consistent with the intensity and restrictiveness of the subsequent treatment setting. Subscale B showed stronger predictive validity than Subscale A. This may be due to the logical distinction between resistance to continuing care vs. acute treatment. It also suggests a need for future research to explore more fully the psychometric properties of the subscales. Subscales B, C, D, and E showed some highly significant differences across treatment outcomes. On these dimensions, mean group differences were observed between subjects who required extended hospital rehabilitation vs.

those discharged to less restrictive settings. Dimensions B, D, and E all showed significant differences between subject groups that would accept an outpatient level of continued care vs. subjects who left AMA. As hypothesized, the AMA group had more initial resistance to continuing care and more severe psychiatric and environmental obstacles to treatment.

The approach used by the RAATE–CE to measure treatment readiness differs from that of instruments that measure either severity[9,10] or motivation.[22–24] The RAATE–CE assesses both internal motivation and extrinsic impediments to treatment, and the latter include biomedical, psychological, family, social, and vocational sources. Treatment dropout from detoxification is a multidetermined process that is related to all of these dimensions. The fact that all of the subscales representing these dimensions yielded expected associations with outcome differences supports the use of this multidimensional approach.

Several design limitations underscore the need for replication of these results in future research. Raters underwent only limited training (2 hours) and interrater reliability was not established. Patient discharge recommendations were constrained by several factors, including patient finances, program availability, geographic access, and patient acceptance. There were small sample sizes in the disposition groups, especially in the group discharged home without treatment. However, considering these limitations, the finding of significant differences is impressive. The lack of independence between raters and outcomes (counselors who made initial ratings were members of the discharge-planning teams) will need to be addressed in future studies. Also it must be recognized that discharge dispositions, although used here as a proxy for outcome, do not necessarily equate with clinical outcome.

Conclusions and Directions for Future Research

These preliminary findings of predictive validity support further research with the RAATE–CE for examining sample differences in treatment readiness and impediments. For example, the RAATE–CE may be effective for determining the treatment readiness of an experimental vs. placebo group in studies that need to determine whether randomization has been effective. In the present study, the effect size is not great; that is, between-group differences are not large relative to standard deviations within groups. Therefore future research would be needed to calculate the effect size in a general population, which would be important in developing the instrument for clinical use. At a further stage of the instrument's development it will be necessary to ascertain its predictive value for specific individuals' outcomes or for directing treatment-matching protocols.

It remains to be determined how much the RAATE–CE enhances clinical assessment and treatment planning beyond conventional methods. Future work should consider the following: 1) The RAATE–CE factor structure should be examined to determine which items may be most predictive and to determine subscale thresholds or "cutoff" scores. Also, the intercorrelation between subscales A and B indicates a psychometric weakness of the instrument that should be studied to determine whether corrections in the instrument's design are warranted. 2) Future studies should further validate the RAATE–CE by examining new samples with other tests of validity, such as clinicians' predictions. 3) Studies should assess the impact of the instrument on clinical care. 4) Finally, studies should test empirically the instrument's value in treatment-matching. This work is under way as part of the NIDA-funded Collaborative Study of Psychotherapy for Cocaine Use Disorder.

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