

# Evaluating the Efficacy of Partial Hospitalization Services for Adults With Mental Retardation and Psychiatric Disorders: A Pilot Study Using the Aberrant Behavior Checklist (ABC)

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This study incorporated the Aberrant Behavior Checklist (ABC) to evaluate the efficacy of partial hospitalization services with 38 adults who had mild mental retardation and psychiatric disorders. The ABC was administered to each patient upon admission to and discharge from the program. Approximately 40% of patients had improved ratings on all five subscales of the ABC and approximately 60% had mixed outcome (positive and negative ratings on subscales) at discharge. The most frequently rated subscales concerned behaviors related to irritability, lethargy, and hyperactivity. Differences in the proportion of patients with uniform improvement and mixed outcome were seen for the diagnostic categories of depressive disorders and schizophrenia/psychotic disorders. The degree of patient improvement was not differentiated by length-of-stay in the partial hospitalization program.

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Many adults with mental retardation (MR) live in community settings such as group homes, family care arrangements, supervised apartments, or shared domiciles with people who do not have a disability.<sup>6,9</sup> Providing accessible and effective mental health services to these individuals is critical to support their community inclusion. One approach in this regard is psychiatric partial hospitalization, defined by Casarino et al<sup>7</sup> as, "an ambulatory treatment program that includes the major diagnostic, medical, psychiatric, and prevocational treatment modalities designed for patients with serious mental disorders who require coordinated, intensive, comprehensive, and multidisciplinary treatment not provided in an outpatient setting." Such a modality can be instrumental in preventing inpatient hospitalization, reducing repeat hospital admissions, and ensuring a continuum of care for persons who have major mental illness.<sup>14</sup>

To our knowledge, the effectiveness of psychiatric partial hospitalization for adults with MR has not been addressed in the professional literature. In the present report, we describe a study that used the Aberrant Behavior Checklist (ABC) to evaluate outcome from partial

hospitalization services. Aman et al<sup>3</sup> developed the ABC initially as a rating scale to assess the effects of psychotropic medication on maladaptive behaviors of individuals with MR living in residential-care facilities. However, as noted by Aman and Singh,<sup>2</sup> the ABC can be used to measure the influence of non-pharmacological approaches toward treatment and habilitation. Furthermore, although the ABC was piloted with an institutionalized population where the majority of residents had severe and profound MR, it since has been validated with individuals having higher cognitive abilities and those without MR.<sup>8,11</sup>

We selected the ABC as an evaluative tool for several reasons. First, the checklist is well suited to the characteristics of clinical settings because assessment is completed by staff who interact regularly with patients, minimal training is required, and the process of administration is practical. Second, the ABC is largely unrelated to IQ.<sup>3</sup> And third, the instrument might be sensitive to therapeutic change in the context of relatively brief-duration treatment that is customary within partial hospitalization. This evaluation of the ABC was not intended to examine its psychometric properties, which have been reported in earlier publications.<sup>2,4</sup> Rather, the purpose was to

determine whether the scale could be used as a measure of treatment outcome with a population not targeted previously. Another purpose of the study was to examine various "outcome profiles" of patients and the types of change documented by assessment. Finally, we report data in relation to patient diagnosis and length of stay in the partial hospitalization setting.

## METHOD

### PATIENTS

The sample was comprised of 38 patients (*M* age = 29.7 years) who attended a psychiatric partial hospitalization program (described below). Of this sample, 17 patients (44.7%) were female and 21 patients (55.2%) were male. All of the patients were classified as having mild MR. Upon admission to the partial hospitalization program, each patient received a diagnosis using DSM-IV<sup>5</sup> criteria following evaluation by a team comprised of a psychiatrist, psychologist, social worker, and registered nurse. The diagnostic categories represented by the patient sample were: bipolar disorders (7.8%), depressive disorders (36.8%), schizophrenia/psychotic disorders (44.7%), impulse control disorder NOS (7.8%), and mood disorder NOS (5.2%).

### SETTING

The partial hospitalization program was located at a private psychiatric hospital in a suburban community. The program provided acute stabilization and short-term intensive treatment for men and women, 18 years and older, who had MR and severe psychiatric disorders. Additional goals were to prevent the need for inpatient care or to ease return to the community following hospitalization. The program had a full-time director who was a licensed, doctoral-level psychologist. Additional staff included a psychiatrist (medical director), consultant clinical psychologist, behavior clinician, social worker, registered nurse, and two mental health counselors.

The patients attended the partial hospitalization program for six hours each weekday. They participated in five therapy groups per day that addressed areas such as symptom management, stress reduction, personal problem-solving, and interpersonal skill-building. Individual therapy and counseling sessions also

were scheduled with patients. Ongoing medication management focused on establishing an effective pharmacological regimen that was well tolerated by the patients and free of untoward side effects. Finally, the program featured a behavioral psychology service that delivered consultation for the design, implementation, and evaluation of milieu-based and patient-specific support plans.<sup>10</sup>

While attending the program, patients lived in supervised community group homes, with biological or foster parents, or independently in their own apartments. Discharges usually were made to vocational training sites, supported employment, or alternative day-treatment settings.

### DESCRIPTION OF ABERRANT BEHAVIOR CHECKLIST

The ABC is comprised of five subscales labeled Irritability, Lethargy, Stereotypy, Hyperactivity, and Inappropriate Speech. Each subscale includes problem behaviors that are rated according to a four-point number code. Examples of behavior entries are "injures self," "uncooperative," and "disrupts group activities." There are 15 behaviors rated on the Irritability subscale, 16 behaviors rated on the Lethargy and Hyperactivity subscales, 7 behaviors rated on the Stereotypy subscale, and 4 behaviors rated on the Inappropriate Speech subscale. The four-point number code is "0" (behavior is not at all a problem), "1" (behavior is a problem but slight in degree), "2" (the problem is moderately serious), and "3" (the problem is severe in degree).

The instructional manual for the ABC<sup>2</sup> specifies that ratings should be made based on the observations of the "resident" by multiple staff members (in the present study, the term "patient" was substituted for "resident"). Ratings are based on the "relative frequency" of the listed behaviors, the degree to which the behaviors interfere with development, and the multiple contexts in which the behaviors occur. One rating from the four-point number code is recorded per behavior. A total score is derived for each subscale by summing the ratings for the behaviors in the scale. The range of scores is 0-45 for the Irritability subscale, 0-48 for the Lethargy subscale, 0-21 for the Stereotypy subscale, 0-48 for the Hyperactivity subscale, and 0-12 for the Inappropriate Speech subscale. Higher scores indicate a more serious clinical condition for the designated subscale.

<b>SUBSCALE</b>	<b>UNIFORM IMPROVEMENT</b>		<b>MIXED OUTCOME</b>	
	<b>ADMISSION</b>	<b>DISCHARGE</b>	<b>ADMISSION</b>	<b>DISCHARGE</b>
<b>Irritability</b> (Maximum=45)	18.5	4.4	10.8	10.0
<b>Lethargy</b> (Maximum=48)	11.4	3.6	11.2	7.3
<b>Stereotypy</b> (Maximum=21)	2.5	.86	3.4	2.9
<b>Hyperactivity</b> (Maximum=48)	21.2	7.3	16.1	14.6

The psychometric properties of the ABC have been reported elsewhere.<sup>1,3,4</sup> With regard to reliability, internal consistency across the five subscales yielded mean alpha coefficients between .90-.91, the mean of the interrater correlations was .63, and test-retest reliability produced Spearman correlations ranging from .96-.98. The five subscales comprising the ABC were derived empirically using a principal factoring method.<sup>3,4</sup> A cross-validation study supported the factorial validity of the scale.<sup>1</sup>

#### ADMINISTRATION OF THE ABC

The ABC was administered for each of the 38 patients within one week of admission to, and one week following discharge from, the partial hospitalization program. Evaluation was performed by the program's clinical team comprised of the program director, registered nurse, behavior clinician, social worker, and two mental health counselors. In keeping with the instructions set forth in the ABC instructional manual,<sup>2</sup> the observations of all members of the team were considered. The final rating for each subscale item represented the consensus opinion of the team. It required between 5-10 minutes to complete each ABC.

At the admission phase of the study, ratings were based on the team members observations of, and interactions with, the patient during his or her first week at the program. Ratings made at the discharge phase were based on the team members observations of, and interactions with, the patient during the week preceding his or her termination from the program. At each phase, the

ABC was completed during a group meeting with members of the clinical team.

#### DATA SUMMARY AND ANALYSIS

The total scores on the five subscales of the ABC recorded at admission and discharge were computed for each patient. This analysis produced four outcome measures:

1. **Positive Change:** The patient's rating on the subscale reflected improvement from admission to discharge. An example would be a patient who received a rating of 35 on the Hyperactivity subscale on admission and a rating of 20 on the Hyperactivity subscale at discharge.

2. **Negative Change:** The patient's rating on the subscale reflected deterioration from admission to discharge. An example would be a patient who received a rating of 20 on the Hyperactivity subscale on admission and a rating of 35 on the Hyperactivity subscale at discharge.

3. **No Change:** The patient's rating on the subscale was identical at admission and discharge. An example would be a patient who received a rating of 20 on the Hyperactivity subscale on admission and a rating of 20 on the Hyperactivity subscale at discharge.

4. **Zero Rating:** The patient's rating on the subscale was "0" at admission and discharge.

For the four outcome measures, the data were summarized further into three categories. The first category ("uniform improvement") was patients who had a "positive change" recorded for all subscales. The second category ("mixed

**TABLE 2. PERCENT OF PATIENTS WITH POSITIVE CHANGE, NEGATIVE CHANGE, NO CHANGE AND ZERO RATING RECORDED ON THE FIVE SUBSCALES OF THE ABERRANT BEHAVIOR CHECKLIST**

MEASURES	IRRITABILITY	LETHARGY	STEREOTYPY	HYPERACTIVITY	INAPPROPRIATE SPEECH
Positive Change	65.7% (25/38)	68.4% (26/38)	36.8% (14/38)	63.1% (24/38)	52.6% (20/38)
Negative Change	31.5% (12/38)	21.0% (8/38)	13.1% (5/38)	36.8% (14/38)	15.7% (6/38)
No Change	2.6% (1/38)	5.2% (2/38)	0% (0/38)	0% (0/38)	5.2% (2/38)
Zero Rating	0% (0/38)	5.2% (2/38)	50.0% (19/38)	0% (0/38)	26.3% (10/38)

outcome”) was patients who had both “positive change” and “negative change” recorded on subscales. The third category (“no improvement”) was patients who had a “negative change” recorded on all subscales.

**RESULTS**

Outcome data indicated that 39.4% (15/38) of patients had uniform improvement, 60.5% (23/38) had mixed outcome, and 0% (0/38) had no improvement. The average subscale scores for patients with uniform improvement and mixed outcome are shown in Table 1. On average, patients in the uniform improvement group had higher scores at admission for the Irritability and Hyperactivity subscales. Although patients who had mixed outcome averaged reduced ratings on all five subscales of the ABC from admission to discharge, the magnitude of positive change was greater for patients with uniform improvement.

Table 2 presents the percent of patients that had positive change, negative change, no change, and zero rating recorded on the five subscales of the ABC. Between 53-68% of patients demonstrated positive change on the Irritability, Lethargy, Hyperactivity, and Inappropriate Speech subscales. The largest proportion of patients with a negative change occurred for the Irritability and Hyperactivity subscales. Very few patients (0-5.2%) had no change on the admission-discharge administration of the ABC. However, 26% of patients received a zero rating on the Inappropriate Speech subscale at admission/discharge and 50% of patients received a zero rating on the Lethargy subscale at admission/discharge.

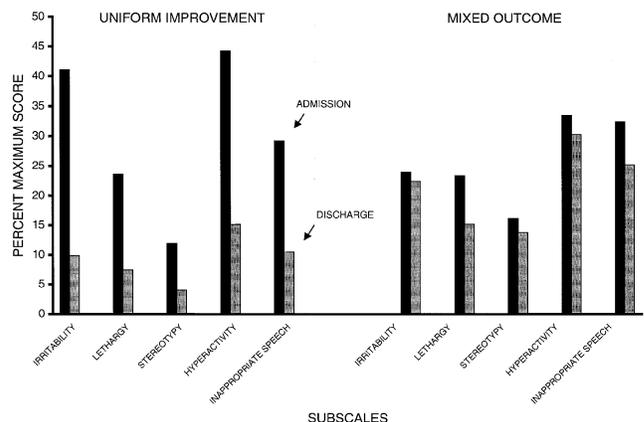
For those patients who had uniform improvement, 33.3% (5/15) had 5/5 subscales

rated as improved, 26.6% (4/15) had 4/4 subscales rated as improved (one subscale with zero rating), and 40.0% (6/15) had 3/3 subscales rated as improved (two subscales with zero rating).

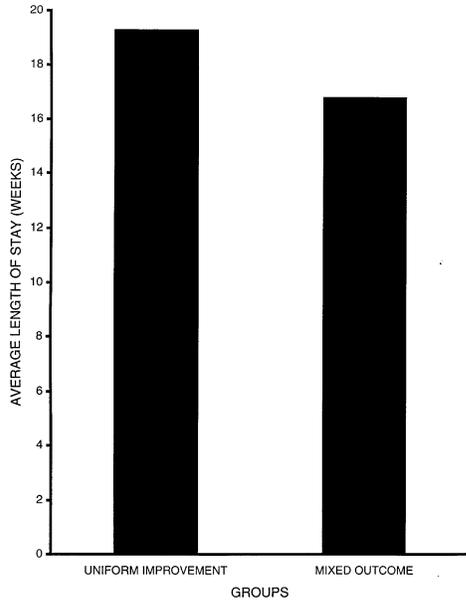
Data were analyzed further to determine the percent maximum score on the five subscales of the ABC at admission and discharge for patients who had uniform improvement and mixed outcome. Figure 1 reveals that on average, patients with uniform improvement had the largest decrease in maximum score percentage for all five subscales at discharge. This group also had a higher average percent maximum score for the Irritability and Hyperactivity subscales relative to the mixed outcome group.

Figure 2 presents the average length-of-stay (weeks) in the partial hospitalization program for patients who had uniform improvement and mixed outcome from admission to discharge.

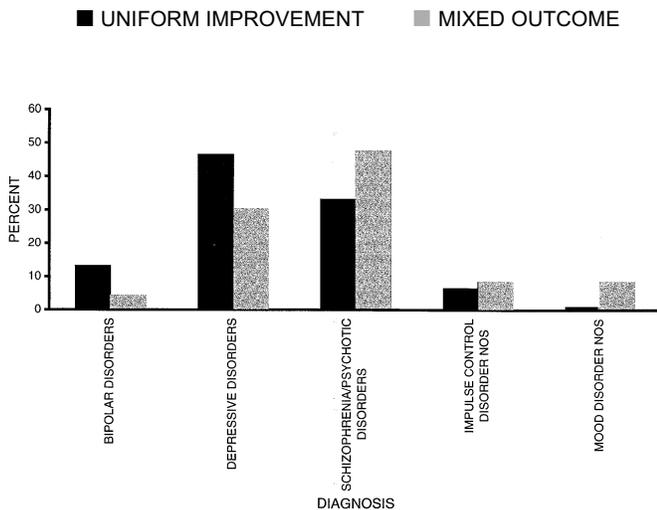
**FIGURE 1. AVERAGE PERCENT MAXIMUM SCORE PER SUBSCALE FOR PATIENTS WHO HAD UNIFORM IMPROVEMENT AND MIXED OUTCOME FROM ADMISSION TO DISCHARGE**



**FIGURE 2. AVERAGE LENGTH-OF-STAY (WEEKS) FOR PATIENTS WHO HAD UNIFORM IMPROVEMENT AND MIXED OUTCOME FROM ADMISSION TO DISCHARGE**



**FIGURE 3. PERCENT OF PATIENTS COMPRISING FIVE DIAGNOSTIC CATEGORIES FOR THOSE WITH UNIFORM IMPROVEMENT AND MIXED OUTCOME**



These data indicated a similar length-of-stay for both groups. The percent of patients comprising five diagnostic categories for those with uniform improvement and mixed outcome are depicted in

Figure 3. The majority of patients had a diagnosis of a depressive disorder or schizophrenia/psychotic disorder. For patients with a depressive disorder, 46.6% had uniform improvement and 30.4% had mixed outcome. This pattern essentially was reversed for patients with schizophrenia/psychotic disorders where 33.3% had uniform improvement and 47.8% had mixed outcome.

**DISCUSSION**

Using the ABC, 38 adults with MR and psychiatric disorders were assessed upon admission to, and discharge from, a partial hospitalization program. All patients demonstrated improvement on one or more of the five subscales of the ABC, and nearly 40% improved on all subscales. With regard to the patterns of change revealed by the ABC, 97.2% of patients (37/38) received ratings on the Irritability subscale, 89.4% (34/38) received ratings on the Lethargy subscale, and 100% (38/38) received ratings on the Hyperactivity subscale. Ratings were evoked less frequently for the Stereotypic and Inappropriate Speech subscales (49.9% and 68.3% of the patient sample respectively). This finding may stem from the fact that the ABC includes only seven behaviors within the Stereotypy subscale and only four behaviors within the Inappropriate Speech subscale. Therefore, the checklist may not have captured the full range of stereotypic and verbal behaviors displayed by our patient sample. Also, a rating of “0” on the ABC indicates that a designated behavior is considered “not at all a problem,” but it does not indicate whether the behavior is or is not present. That is, it is possible for a patient to demonstrate any of the subscale behaviors but at a frequency that is not viewed as extremely challenging.

We anticipated that certain diagnostic categories might be associated with particular profiles on the ABC. As revealed in Figure 3, the proportion of patients with uniform improvement was greater for those with depressive disorders and smaller for those with schizophrenia/psychotic disorders. Differences in improvement ratings were less apparent for the diagnostic categories of bipolar disorders, impulse control disorders NOS, and mood disorder NOS. These findings may indicate that in contrast to patients with acute or chronic psychosis, individuals with

depression responded more favorably to the treatment provided at the partial hospitalization program. It also is possible that these patients were less seriously afflicted than the group with schizophrenia/psychotic disorders.

Length-of-stay in the partial hospitalization program did not differentiate patients who had uniform improvement and mixed outcome. It might be assumed that patients who experienced improvement on all rated subscales in the ABC would have had a more extended course of treatment than those who had mixed outcome. Furthermore, it could be reasoned that patients who were the least responsive to treatment would have spent less time in the partial hospitalization program. However, length-of-stay frequently was not determined by clinical disposition alone but included influences such as the insurance coverage available to a patient, decisions that were made by state-funded agencies, the choices of family members, and so on.

Aman et al<sup>4</sup> found that subscale scores on the ABC correlated significantly with analogous domains from the Adaptive Behavior Scale-Part II.<sup>13</sup> They also reported that with the exception of the Irritability subscale from the ABC, ratings on the other four subscales correlated significantly with direct observational measures of residents. Our study did not include assessment validation, a feature that would have enhanced these preliminary findings. For example, future evaluations of the ABC as an instrument for clinical outcome measurement could determine the relationship between subscale ratings and indices such as Global Assessment of Functioning (GAF) from the DSM-IV,<sup>5</sup> the frequency of target behaviors, and scores from other rating instruments that sample particular psychiatric disorders.<sup>12</sup> In this way, there would be greater confidence that the ABC is an accurate measure of clinical presentation for individuals who have mental retardation/mental illness. An additional use of the ABC would be to compare varied approaches to treatment or clinical settings that incorporate different methods of service delivery.

Because all patients in our study attended the same partial hospitalization program and were afforded the same combination of therapeutic services, the outcome data are descriptive and in the absence of a no-treatment comparative group, cannot be used to form judgements about treatment efficacy. Administering the ABC a

second time during the admission phase may have allowed for a more meaningful comparison with patients' ratings at discharge. Another limitation is that we did not control for chance or random fluctuations that might have effected outcome. For example, a one-point rating decrease on a subscale from admission to discharge would be categorized as "improvement." Finally, although the ABC has been shown to have good inter-rater reliability, we did not perform such assessment in this study.

In that there have not been previously published descriptions of psychiatric partial hospitalization programs for adults with MR, these findings must be considered preliminary and interpreted in light of the aforementioned qualifications. Nevertheless, our results suggest that partial hospitalization services can be an efficacious therapeutic option for patients living in the community. As presented in this report, an emphasis on empirical evaluation will be critical in determining how partial hospitalization can serve optimally the complex needs of adults who have MR and psychiatric disorders.

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