# Planning Treatment and Assessing Recovery in Participants With Dual Diagnosis: Preliminary Evaluation of a New Clinical Tool

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# Planning Treatment and Assessing Recovery in Participants With Dual Diagnosis: Preliminary Evaluation of a New Clinical Tool

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**ABSTRACT**

**Objective**: Integrated treatment for people with co-occurring mental illness and substance use disorder would be enhanced by a simple, recovery-oriented instrument to plan treatment and monitor progress toward dual recovery. This paper describes the development of a clinical instrument, the WestBridge Dual Recovery Inventory, and presents a preliminary evaluation of its usability. **Methods**: In collaboration with participants in treatment, family members, clinicians, and program leaders, we developed an inventory on dual recovery and then examined its utility through a series of iterative steps. First, we tested the inventory for inter-rater reliability among 10 program participants (rated independently by the first and last author). Second, we examined concordance by having a separate group of 10 program participants and their care managers complete the inventory independently. Third, we observed 3 care managers and 10 participants working together to complete the inventory as part of routine care during the quarterly assessment; we evaluated shared decision making based on the process they used to resolve differences and on a brief survey completed by program participants as the end of the session. Finally, to measure the inventory's capacity to detect change over time, we analyzed the ratings from admission to one year for 43 participants with quarterly assessments available for that time period. **Results**: The WestBridge Dual Recovery Inventory assesses 14 domains of recovery, each rated on 5-point scales. Inter-rater reliability was high (Kappa = .82 to 1.00); agreement between independent ratings by care managers and participants varied considerably (Kendall's tau = −.83 to +.87); and collaborative ratings demonstrated high scores on shared decision making. Participants improved significantly on 11 of 14 domains during the initial residential treatment phase (admission to six months) and sustained gains during outpatient assertive community treatment (6 to 12 months). **Conclusions**: This preliminary assessment of the WestBridge Dual Recovery Inventory suggests that it reliably assesses dual recovery, facilitates shared decision making, and captures changes over time. The inventory appears to be usable, well received by participants and care managers, specific for program goals, and sensitive to changes in the participants. Recovery measures may need to be program-specific.

Most young men with serious mental illness also have co-occurring substance use disorders (i.e., dual diagnosis; Kessler et al, 1987). They experience serious difficulties in managing their illnesses, functioning socially and vocationally, and maintaining health and wellness (Caton et al., 2005; Dixon, McNary, & Lehman, 1995; Leal, Galanter, Dermatis, & Westreich, 1999; Rosenheck et al., 2006). Integrated treatments, designed for people with dual diagnoses, aim for dual recovery (Minkoff, 1989; Mueser, Noorsdsy, Drake, & Fox, 2003), and longitudinal research demonstrates substantial improvements over time for many of those in treatment (Bartels, Drake, & Wallach, 1995; Drake et al., 1998; Drake et al., 2006, 2016; Essock et al., 2006; Xie, Drake, & McHugo, 2006). Tracking different domains of recovery over time serves several goals: documenting an individual's progress,

matching treatments to the participant's stage of recovery in different domains, identifying people who are not recovering for intensive review, and evaluating a program's success in different areas and over time (Roe, Gelkopf, Gornemann, Baloush-Kleinman, & Shadmi, 2015). Specialty programs for this population need a clinical tool to aid treatment planning, facilitate shared decisions, and monitor progress toward dual recovery.

Routine outcome measures of all kinds have serious limitations such as length, timing, content, and usability (Roe, Drake, & Slade, 2015). For example, the Mental Health Recovery Star (MacKeith & Burns, 2008) and the Peer Outcomes Protocol (Campbell, Cook, Jonikas, & Einspahr, 2004), which assess 10 and 12, respectively, require 60 minutes to complete. The Recovery Assessment Scale (Giffort, Schmook, Woody, Vollendorf, &

Gervain, 1995) comprises 41 items and does not assess education, employment, or housing recovery. The Mental Health Recovery Measure (Young & Bullock, 2003) does not assess recovery from clinical symptoms or substance use. A recent review of 28 measures of recovery documented great heterogeneity in conceptualization and measurement, with no single measure to assess dual recovery (Drake, Noel, & Deegan, 2015). Available measures of recovery are often narrowly focused; adding together multiple measures becomes a lengthy and unwieldy process, requiring considerable time and resources so that repeated measurement is generally unsustainable. A more parsimonious approach is to develop a clinical measure of recovery that addresses the goals of a specific treatment program and its participants. For example, the goals of a residential program for pregnant women with opiate addiction should differ from those of an outpatient program for adolescents with cannabis abuse.

For the current project, we developed a brief clinical tool to track both substance use and mental health recovery for a dual diagnosis program for men. We examined inter-rater reliability, concordance (agreement) between participant ratings and care manager ratings, a co-rating method to facilitate shared decision making, and the capacity of the inventory to detect changes in recovery during residential and outpatient treatment.

## Methods

### Dual diagnosis program

WestBridge Community Services is a nonprofit agency that provides residential care and outpatient assertive community treatment for men with co-occurring serious mental illness (psychotic or mood disorders) and substance use disorders, with sites in New Hampshire and Florida (Woods & Drake, 2011). The programs follow the integrated dual disorders treatment model (Fox et al., 2010). Treatment combines evidence-based pharmacological, psychological, and social interventions, including ongoing family education and support, the stages of change model (Prochaska & DiClemente, 1983), and shared decision making (Mueser & Drake, 2011). Residential counselors, care managers, addiction specialists, peer mentors, vocational specialists, nurses, and physicians assist participants in addressing their goals.

Approximately 40 to 50 participants are actively in treatment at any one time at WestBridge. Nearly all begin in a residential program (maximum 32 beds across two sites), where they stay for three to six months to stabilize and prepare for community living. Some return home or to a non-local school following residential treatment, but most find independent apartments in the local area and receive assertive community treatment services for as long as needed (no required minimum or maximum tenure).

### Dual recovery inventory development

Working with Dartmouth researchers, WestBridge administrators found that existing research instruments did not capture their program goals and therefore developed a brief clinical inventory that aligned with the specific goals of their program. We began with six domains of dual recovery based on behaviors identified by dual diagnosis participants: managing psychiatric symptoms, managing substance use, living independently, working competitively, having regular contact with friends who were not substance users, and reporting overall life satisfaction (Drake et al., 2006; Drake et al., 2015). The program's participants, staff, and leaders collaborated to expand the inventory to 14 domains: housing, education, employment, friendship, family, mental health, substance use, spirituality, tobacco use, healthy eating, exercise, sleep hygiene, physical health, and personal hygiene. The major stakeholders also helped to develop definitions and 5-point scales for each domain. The scales combine objective status, such as living situation and employment, and stage of change: 1 = poor adjustment (i.e., poor clinical status, functional status, or wellbeing) with no desire to change, 2 = poor adjustment but contemplating change, 3 = actively pursuing change strategies, 4 = making observable positive changes with regular assistance, and 5 = good adjustment based on independent responsibility for maintaining changes. Domains can be rated as not applicable if no change is needed (e.g., the tobacco domain for people who do not use tobacco). We adopted the term inventory, rather than scale, because a single item rather than a set of items assessed each conceptually independent domain (Babbie, 2015).

Using an iterative process, we tested each item with clinicians and participants to revise scale definitions and improve clarity. Clinicians and participants completed the ratings, raised questions, and discussed changes. Completion time was approximately 5 to 10 minutes. Clinicians understood the items and reported that the inventory helped them to cover specific areas of recovery. Participants also understood the items easily and pointed out that some were not relevant for them personally. Both groups suggested recovery-oriented changes in language. Training to administer the WestBridge Dual Recovery Inventory consists of a one-hour training session with follow-up sessions every three months for quality assurance. WestBridge has fully integrated the

WestBridge Dual Recovery Inventory into their electronic medical record. The electronic software also provides a graph of the participant's quarterly recovery ratings for each domain.

## Procedures

The Dartmouth College Committee for Protection of Human Subjects reviewed the project and deemed it program evaluation, not research.

We conducted formal analyses in four steps. In step 1, two researchers completed the ratings using face-to-face interviews with a convenience sample of 10 participants to determine inter-rater reliability. This step did not correspond to clinical usage; rather it assessed the reliability of the definitions and assessment by expert raters. In step 2, using a separate convenience sample of 10 participants scheduled for their three-month recovery assessment, care managers and participants completed the inventory independently. This step examined the expected differences in perspectives but again did not correspond to clinical usage. In step 3, three care managers and 10 participants (another convenience sample of participants who were scheduled for their three-month assessments) worked together to complete an electronic version of the inventory. A researcher observed the process of resolving differences and recorded interactions. At the end of each session, the participant completed the CollaboRATE measure (Elwyn et al, 2013). This step reflected routine clinical procedures.

CollaboRATE is a three-item patient-report measure of shared decision making, on which participants assess the provider's effort to facilitate shared decision making. Ratings are made on a 10-point scale ranging from 0 = "No effort was made" to 9 = "Every effort was made." Participant total scores were calculated through the summation of the three items multiplied by 3.704 to transform the scale to 0 to 100 (Barr et al., 2014). A rating of 9 on all three items is considered a top score. A rating below 9 on any item indicates a need for improvement in shared decision making (Barr et al., 2014). CollaboRATE has demonstrated concurrent validity, showing strong correlations with other measures of shared decision making, as well as excellent intra-rater reliability (Barr et al., 2014).

In step 4, to measure capacity of the inventory to detect change, we examined the change in ratings over the course of six months of residential treatment followed by six months of outpatient treatment, using inventory ratings for the 43 participants with quarterly assessments from admission to one year. A total of 126 participants have been at WestBridge since the ratings began, but 83 participants have less than one year of ratings using the WestBridge Dual Recovery Inventory.

## Statistical analyses

We conducted all analyses using the Statistical Package for the Social Sciences (version 22). We examined the data as follows: We assessed inter-rater reliability between the two expert raters for each item using a linearly weighted Cohen's Kappa coefficient for ordinal data; we assessed concordance between participants' and care managers' ratings using Kendall's tau-b correlation coefficient, which measures the proportion of concordant pairs minus the proportion of discordant pairs, with a range from +1 to −1; we calculated the mean CollaboRATE scores and frequency of top scores; we identified the care mangers' use and process of shared decision making through consensus between two researchers using the observation notes; and we tested a covariance pattern model under the general linear mixed-effects modeling framework to assess capacity to detect change in ratings from admission to six months representing the residential period and from six months to one year, representing the outpatient period. The covariance pattern model accounts for within-subject correlation by allowing variance and covariance parameters to be freely estimated. This model also allows for attrition/missing data assuming the missing mechanism is missing at random. We set significance levels at $p < .01$ to reduce risk of type 1 error.

## Results

### Participants

Using the electronic medical record, demographics and diagnostic information were available for 92 of the 126 participants who went through the program after 2012. This information was not available for 34 participants. Average age of the 92 participants was 29.9 years ($SD = 9.4$), the majority of participants were White (91.3%, $n = 84$) and single (95.7%, $n = 88$), and all were male. Primary psychiatric diagnoses included 44.6% ($n = 41$) schizophrenia spectrum disorder, 27.2% ($n = 25$) bipolar disorder, 25.0% ($n = 23$) mood disorder, and 3.3% ($n = 3$) other disorders. Primary substance use disorders included 45.7% ($n = 42$) who primarily used alcohol and/or marijuana, 10.9% ($n = 10$) primarily opioids, 3.3% ($n = 3$) primarily stimulants, 1.1% ($n = 1$) primarily hallucinogens, 1.1% ($n = 1$) other/unknown substances, and 32.6% ($n = 30$) multiple substances. Another 5.4% ($n = 5$) used substances regularly but did not meet

criteria for abuse or dependence. The majority of participants regularly smoked tobacco (67.4%, $n = 62$). Table 1 shows subgroup characteristics for each step.

### Inter-rater reliability (Step 1)

The agreement between the two expert raters for each domain was excellent, with linearly weighted Cohen's Kappa coefficients ranging from .82 to 1.00.

### Concordance in ratings between participant and care manager report (Step 2)

Table 2 shows Kendall's tau-b correlation coefficients for the concordance between participants and care managers across the 14 domains of recovery. Concordance (agreement) was high on housing, education, employment, and tobacco use ($r_\tau = .61$ to .87). Concordance was low for ratings of friendship, family, mental health, and substance use recovery ($r_\tau = .22$ to .40). Concordance was even lower for healthy eating, sleep, exercise, and hygiene ($r_\tau = .13$ to .20). And coefficients indicated discordance (disagreement with rating differences showing an inverse pattern) for spirituality ($r_\tau = -.21$) and physical health ($r_\tau = -.83$).

### Shared decision making (Step 3)

When care managers and participants completed the inventory together, participants reported high scores for shared decision making: CollaboRATE total scores ranged from 55.56 to 100 with a mean (SD) score of 84.82 (16.23); 4 out of 10 participants provided top scores (9 on each item) indicating that "every effort was

made to listen to them," "every effort was made to help them understand," and "every effort was made to include what matters most to them in treatment planning." The majority of the other ratings on the three items ranged between 6 and 8.

Observation of shared decision making using an electronic form of the inventory revealed several themes. First, the care managers individualized their approaches based on the preferences of the participant. Either care managers or participants read the questions and scale points aloud. Second, care managers elaborated on the questions to achieve the most accurate response, e.g., asking the participant for examples of the recovery behaviors being rated. Care managers either agreed with the participant or sometimes provided suggestions for improvement, soliciting input from the participant in order to develop a realistic plan. Third, when the participant and care manager disagreed, the care manager described the rationale for the rating and also asked the participant additional questions to achieve the most accurate rating rather than attempt to achieve consensus.

### Changes in ratings during residential and outpatient treatment (Step 4)

Longitudinal analyses addressed two questions: Do participants improve on all domains during residential treatment (0 to 6 months)? Do they maintain, lose, or augment improvements during outpatient treatment (6 to 12 months)? Figure 1 depicts mean ratings at 3-month intervals for each of the 14 domains beginning at admission through to the 12-month follow-up. The figure is divided into two sections: the residential period and the outpatient period.

**Table 1.** Demographics and clinical characteristics of participants.

| Characteristics | Step 1 (n = 10) | Step 2 (n = 10) | Step 3 (n = 10) | Step 4 (n = 43) |
|---|---|---|---|---|
| | M (SD) | M (SD) | M (SD) | M (SD) |
| Age (years) | 29.2 (5.4) | 28.2 (5.6) | 29.1 (5.9) | 31.2 (8.6) |
| | n (%) | n (%) | n (%) | n (%) |
| Not married | 10 (100%) | 10 (100%) | 10 (100%) | 42 (97.7%) |
| Primary diagnosis | | | | |
|   Schizophrenia spectrum | 8 (80%) | 7 (70%) | 6 (60%) | 28 (65.1%) |
|   Bipolar disorder | 1 (10%) | 1 (10%) | 0 (0.0%) | 8 (18.6%) |
|   Mood disorder | 1 (10%) | 2 (20%) | 4 (40%) | 7 (16.3%) |
| Primary substance use | | | | |
|   Alcohol/marijuana | 4 (40%) | 3 (30%) | 4 (40%) | 19 (44.2%) |
|   Opioids | 0 (0.0%) | 1 (10%) | 0 (0.0%) | 3 (7.0%) |
|   Stimulants | 1 (10%) | 2 (20%) | 1 (10%) | 3 (7.0%) |
|   Polysubstance abuse | 5 (50%) | 4 (40%) | 5 (50%) | 17 (39.5%) |
|   No dependence/abuse | 0 (0.0%) | 0 (0.0%) | 0 (0.0%) | 1 (2.3%) |
| Uses tobacco | 8 (80%) | 9 (90%) | 7 (70%) | 30 (69.8%) |

*Note.* Step 1: To determine inter-rater reliability, two researchers completed the ratings. Step 2: As a measure of concordance, care managers and participants completed the inventory independently. Step 3: As part of clinical care and to examine shared decision making, care managers and participants worked together to complete an electronic version of the inventory during the routine quarterly assessment. Step 4: To measure capacity of the inventory to detect change, we examined ratings from admission to one year utilizing data from the routine intake and quarterly assessments.

**Table 2.** Kendall's tau-b coefficients for the correlation between participant report and care manager report.

| Recovery Domain | Kendall's tau-b | Participant M (SD) | Care Manager M (SD) |
|---|---|---|---|
| Housing | .63 | 3.70 (1.25) | 3.90 (.74) |
| Education | .81 | 1.80 (1.32) | 1.40 (.97) |
| Employment | .87* | 1.70 (1.25) | 1.80 (1.23) |
| Friendship | .38 | 3.80 (1.32) | 4.00 (.82) |
| Family | .40 | 4.20 (1.13) | 3.70 (1.41) |
| Mental health | .34 | 3.50 (1.35) | 2.89 (1.05) |
| Substance use | .22 | 4.30 (1.25) | 4.20 (1.23) |
| Spirituality | −.21 | 3.50 (1.27) | 3.60 (.97) |
| Tobacco use | .61 | 2.00 (1.32) | 2.50 (1.64) |
| Healthy eating | .20 | 3.70 (1.16) | 2.90 (1.10) |
| Exercise | .20 | 3.70 (1.06) | 3.70 (.95) |
| Sleep hygiene | .13 | 4.44 (1.01) | 3.80 (1.32) |
| Physical health | −.83 | 4.33 (1.00) | 3.75 (1.16) |
| Personal hygiene | .18 | 4.00 (.94) | 3.70 (.95) |

*Note.* Domains are rated on a 1–5 scale representing improvements in recovery from 1 = no progress to 5 = best functioning.
*$p < .01$.

Table 3 presents the findings from the linear mixed-effects modeling analyses from admission to six months (residential treatment) and from six months to one year (outpatient period). Participants improved significantly across the majority of domains during the first six months, but not on tobacco cessation, healthy eating, and physical health. During months 6 to 12, few significant changes occurred. Participants maintained improvements that were attained at six months. Education showed a decline. Although the majority of domains improved over 12 months, tobacco cessation, education, and employment averages were below 3 on the 1-to-5 scale, indicating that many participants were not actively pursuing recovery in these areas.

## Discussion

The WestBridge Dual Recovery Inventory assesses 14 domains of recovery among people with co-occurring serious mental illness and substance use disorders. It seems to demonstrate inter-rater reliability, documents differences in perceptions of recovery between participants and care managers, confirms positive changes in recovery over time, and identifies areas with minimal improvements. The evaluation showed that the optimal method for completing the ratings is through shared decision making between care managers and participants.

The inventory is short and comprehensible; it does not require extensive training or clinical skills to be completed independently. When participants and clinicians make ratings of current adjustment, the two perspectives often differ, as in other studies (Widlak, Greenley, & McKee, 1992). We found high concordance between participants and care managers for the domains of housing, education, employment, and tobacco use, probably because these are easily observed behaviors rather than psychological states. Low concordance and even
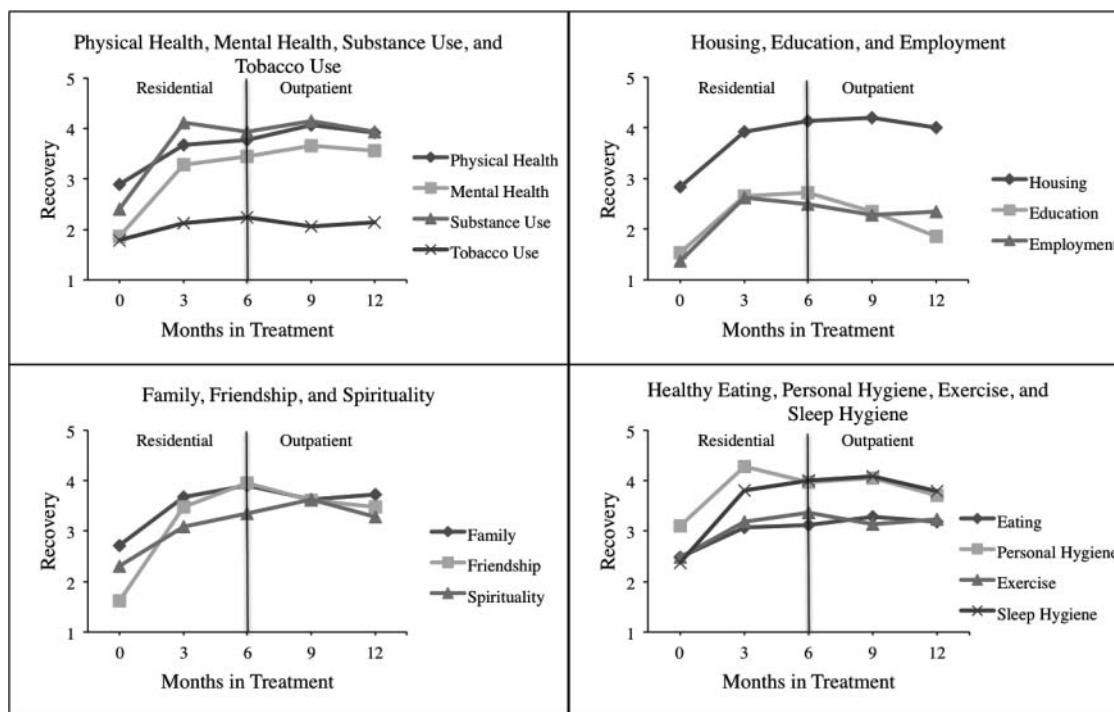


**Figure 1.** Mean recovery ratings for the 43 participants during the residential period (0–6 months) and the outpatient period (6–12 months) across the 14 domains.

**Table 3.** Linear mixed-effects modeling for change in recovery from admission to 6 months (residential) and 6 months to 12 months (outpatient).

| Domain | Admission M (SD) | 3 months M (SD) | 6 months M (SD) | 9 months M (SD) | 12 months M (SD) | 0–6 months | | 6–12 months | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | F (df) | p | F (df) | p |
| Physical health | 2.89 (1.79) | 3.68 (1.12) | 3.78 (1.02) | 4.06 (1.11) | 3.92 (1.01) | 2.16 (2, 25) | .14 | 3.52 (2, 31) | .04 |
| Mental health | 1.86 (1.01) | 3.28 (1.24) | 3.44 (0.83) | 3.65 (0.92) | 3.56 (1.10) | 28.89 (2, 42) | < .001 | 1.20 (2, 42) | .31 |
| Substance use | 2.40 (1.47) | 4.12 (1.35) | 3.93 (1.33) | 4.14 (1.44) | 3.93 (1.50) | 17.12 (2, 42) | < .001 | 1.25 (2, 42) | .30 |
| Tobacco use | 1.79 (0.99) | 2.13 (1.30) | 2.24 (1.26) | 2.06 (1.19) | 2.14 (1.55) | 2.76 (2, 35) | .08 | .44 (2, 36) | .65 |
| Housing | 2.84 (1.32) | 3.93 (1.03) | 4.14 (0.92) | 4.21 (0.77) | 4.00 (1.02) | 21.61 (2, 42) | < .001 | .81 (2, 42) | .42 |
| Education | 1.53 (1.14) | 2.65 (1.46) | 2.72 (1.55) | 2.35 (1.48) | 1.86 (1.39) | 9.67 (2, 42) | < .001 | 5.80 (2, 42) | .006 |
| Employment | 1.37 (0.95) | 2.63 (1.46) | 2.49 (1.59) | 2.28 (1.55) | 2.35 (1.65) | 10.95 (2, 42) | < .001 | .64 (2, 42) | .54 |
| Family | 2.72 (1.08) | 3.67 (1.12) | 3.91 (0.95) | 3.63 (1.22) | 3.72 (1.10) | 19.77 (2, 42) | < .001 | 1.46 (2, 42) | .24 |
| Friendship | 1.62 (0.96) | 3.49 (1.33) | 3.95 (1.09) | 3.60 (1.18) | 3.49 (1.33) | 44.80 (2, 42) | < .001 | 3.20 (2, 42) | .05 |
| Spirituality | 2.31 (1.30) | 3.09 (1.21) | 3.35 (1.23) | 3.63 (1.24) | 3.28 (1.18) | 9.65 (2, 42) | < .001 | 2.41 (2, 42) | .10 |
| Healthy eating | 2.48 (1.18) | 3.07 (1.22) | 3.12 (1.22) | 3.28 (1.24) | 3.19 (1.13) | 2.73 (2, 37) | .08 | .39 (2, 42) | .68 |
| Personal hygiene | 3.10 (1.45) | 4.28 (1.03) | 3.98 (1.23) | 4.05 (1.11) | 3.71 (1.31) | 9.86 (2, 39) | < .001 | 2.24 (2, 40) | .12 |
| Exercise | 2.48 (1.18) | 3.19 (1.39) | 3.37 (1.25) | 3.14 (1.25) | 3.24 (1.19) | 5.10 (2, 41) | .01 | 1.03 (2, 41) | .37 |
| Sleep hygiene | 2.38 (1.38) | 3.81 (1.18) | 4.00 (1.13) | 4.09 (1.21) | 3.79 (1.39) | 21.25 (2, 41) | < .001 | 1.13 (2, 42) | .33 |

discordance between care managers and participants across other domains highlights the need for the two parties to discuss these issues directly at quarterly reviews. Participants may be unaware of some issues, such as poor hygiene, and may minimize other problems, such as use of substances. On the other hand, care managers may be unaware of participants' spiritual beliefs and sleep patterns, perhaps because these topics have not been discussed directly.

Open discussions of goals and disagreements in perceptions are likely to improve shared decision making, honoring of preferences, and therapeutic alliance (Lindhiem, Bennett, Trentacosta, & McLear, 2014). Participants reported that their care managers encouraged shared decision making while co-rating the inventory. Co-rating the inventory allowed participants to inform care managers of their internal experiences, and care managers were able to share with participants their observations. WestBridge has now adopted this shared decision making method with all participants for their quarterly assessments.

Longitudinal data should identify a program's strengths and highlight areas for improvement. A program may also have specific goals for different phases of treatment (e.g., inpatient and outpatient). Participants at WestBridge made large gains during the first six months of residential treatment across most domains and generally maintained these gains for up to one year.

Degree of improvement differed markedly across outcome domains. Education, employment, and tobacco abstinence were identified as key outcomes by program leaders but showed less improvement compared to the other domains. Several participants finished school successfully and no longer had educational goals. Longitudinal data may stimulate review of current strategies to help in some of these areas. For example, after we reviewed these data,

the program added its first full-time employment specialist and employment outcomes improved.

Documenting improvements over time is difficult because of fluctuations and small daily increments of change. Assessing too often (often required by insurers) does not correspond to the known course of recovery, and assessing too infrequently results in data that cannot be easily used for planning (Roe, Drake et al., 2015). Sharing the graphical data at each quarterly assessment with participants allows them to see their progress and plan the next steps to meet their goals. The visual representation facilitates shared decision making because participants and care managers can identify areas that may become new goals. Having the participant identify areas in need of improvement could increase their motivation to continue to work on their recovery.

### Limitations

We assessed changes in recovery over one year among a small sample; generalizability of these findings may be limited to people who have received a similar duration of treatment. We do not know whether the measure is useful for following recovery among men with dual diagnoses more broadly because the project was limited to a single agency. Because the inventory was developed for an agency serving only men and the sample in this project included only men, the domains may be gender-specific and may not capture the full experience of recovery among women with dual diagnoses.

### Conclusions

The WestBridge Dual Recovery Inventory assesses 14 domains of recovery. It can be effectively used, through

collaboration between participants and care managers, to capture changes in recovery, inform treatment planning and goal setting, and highlight differences in perspectives on recovery; however, to fully evaluate the reliability and utility of the inventory, more rigorous study methods are necessary including a larger sample, comparison with another recovery measure, and inclusion of outcomes. As the current inventory reflects the program's goals, the inventory identifies the domains of recovery showing limited improvement, which may require increased attention by the program. To continue with the program's focus on individualized treatment, care managers may consider adding additional items to the inventory that reflect the participant's personal recovery goals. Recovery is a personal process. Therefore, unifying the center's recovery goals with the participant's recovery goals and following these goals over time may provide a more complete and personalized assessment of recovery for each participant.

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## Disclosures

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