Keystone Research Brief

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Introduction

The considerable increase in literature on co-occurring mental illness and substance use in the past twenty years indicates a growing awareness of the prevalence of comorbid disorders. The combined symptoms of mental illness and substance use disorders place individuals at higher risk for unemployment, housing instability, and homelessness (Drake, Osher, & Wallach, 1991). An important factor when treating clients with a co-occurring disorder is the high risk of homelessness (Rothbard, Min, Kuno, & Wong, 2004). Homelessness is a major problem in the U.S. that affects over 3 million men, women, and children (National Law Center on Homelessness and Poverty, 2004). This is a particularly difficult population to engage in services and their complex needs can overwhelm systems of care designed to treat only one type of disorder.

Because co-occurring conditions are so prevalent, an integrated mental health and substance abuse treatment service delivery model has the philosophy of viewing co-occurring disorders as the expectation rather than the exception (Minkoff & Cline, 2001). Integrated service delivery allows clients to receive treatment for both disorders concurrently, and services are delivered by the same multidisciplinary treatment team of clinicians at a treatment facility.

The Comprehensive, Continuous, Integrated, System of Care (CCISC) was developed to improve service delivery symptoms for persons with co-occurring disorders (COD). The CCISC model is built on eight evidence-based principles of service delivery for COD that provide a framework for developing clinical practice guidelines for treatment matching and can also be utilized to design a welcoming, accessible, integrated, continuous, and comprehensive system of care (Minkoff & Cline, 2001).

Current Study. The present study was designed to assess the effectiveness of the CCISC model for a diverse sample of homeless individuals diagnosed with COD.

Methods

Participants. Data were gathered from 96 clients receiving services at the Keystone residential program. Individuals were eligible to receive services if they were homeless or at risk of being homeless, had co-occurring substance use and mental health disorders, and could perform daily living activities with supervision.

Procedure. Immediately upon being admitted to the Keystone program, clients meeting inclusion criteria were invited to take part in the study. After explaining the study and obtaining informed consent, participants completed a baseline interview that lasted approximately forty-five minutes to one hour. These initial interviews served as the baseline, and participants were interviewed again at 6 and 12 months. Interviews were conducted in a private room to help ensure confidentiality, and participants were paid $20 for each follow-up interview.

Measures. The following is a list of measures that were included in the current study:

- Government Performance and Results Act (GPRA). The GPRA includes items addressing demographics as well as outcomes like housing, employment, and substance use.
- Residential Follow-Back Calendar (New Hampshire Dartmouth Psychiatric Research Center; 1995). This measure examines clients' current and previous 6-month living arrangements. Each response was classified into one of four categories: 1) literal homelessness, 2) institutional residence, 3) temporary housing, or 4) permanent housing.
- Brief Symptom Inventory (BSI; Derogatis, 1982). This is a 53-item abbreviated form of the Symptom Checklist-90 (SCL-90) that was designed to assess common psychological symptoms.
- Treatment Satisfaction. This measure was developed by the Evaluation staff and was used to assess satisfaction with the Keystone program.

Results

Demographic Information. Baseline demographic information demonstrated that:

- 66.7% of clients were male
- Average age was 41 years with most falling into the 35-44 (35.4%) or 45-54 (37.5%) year-old age group
- 81.1% of clients were Caucasian
- 30.2% of clients earned a high school diploma. 28.1% attended some college with no degree, and 8.3% were college graduates
- 78.1% of clients reported being unemployed and not looking for work at baseline

Primary Mental Health and Substance Use Disorders. Mental health and substance use disorder information demonstrated:

- 85.4% were diagnosed with a mood disorder, with major depressive disorders being diagnosed more commonly than manic disorders
- 35.8% were diagnosed with bipolar disorders
- 7.4% were diagnosed with anxiety disorder
- 53.1% were diagnosed with alcohol dependence
- 17.1% were diagnosed with cocaine dependence
- 14.6% were diagnosed with poly substance dependence

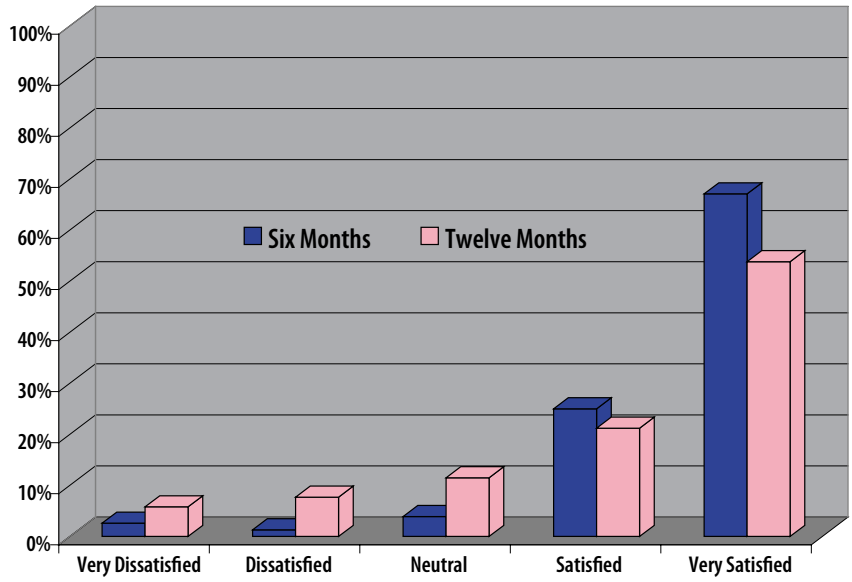
History of Homelessness. Participants averaged just under 33 years of age when they first became homeless, ranging from 13 to 73. On average participants were homeless over five times in their lifetime, ranging from 1 to 50.

Treatment Factors. The mean length of stay was 137 days with a range from 22 to 382 days. The typical number of days most commonly ranged from 61 to 120 days (35.5%). It is important to note that some clients relapsed, left the program and then came back to the Keystone program for additional treatment. Ninety-three percent of clients (n = 89) successfully graduated from the Keystone treatment program. Some of the main reasons for not graduating from the program included never engaging in treatment, positive urinalyses, and becoming incarcerated during treatment.

Special Points of Interest

- *Homelessness is a major problem in the U.S. that affects over 3 million men, women, and children*
- *Mental illness and substance use disorders place individuals at higher risk for unemployment, housing instability, and homelessness*

Figure 1. Quality of Program



Treatment Satisfaction. Satisfaction data were obtained from participants in order to assess their experience with the Keystone program at both follow-up periods. Results from participants were overwhelmingly favorable. As can be seen in Figure One, the majority of participants were satisfied or very satisfied with the quality of the overall program at both 6-month and 12-month follow-up. Additionally, the vast majority of participants agreed that the program was helpful in dealing with both their mental health and substance abuse issues. It is particularly noteworthy that even though most clients had graduated at 12-month follow-up, they still rated their satisfaction high on most aspects of the program.

Table 1. GPRA Outcomes

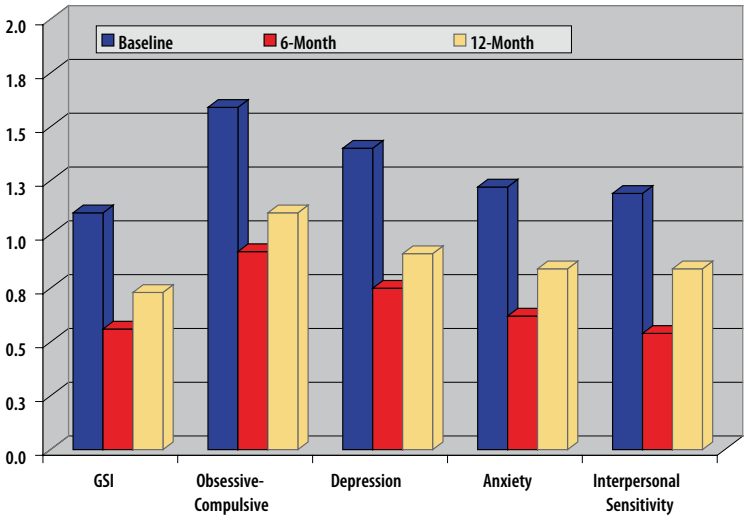
	Baseline (N = 48)	6-Month (N = 48)	12-Month (N = 48)
Substance Use			
% Using Past Month			
Alcohol	33.3%	16.7%	19.1%
Any Illegal Drugs	31.3%	14.6%	6.4%*
Cocaine	25.0%	10.4%	4.3%*
Marijuana	6.3%	8.3%	4.3%
Average Days Used, Past Month			
Any Alcohol (Mean, SD)	3.85 (7.05)	1.30 (3.49)	1.11 (3.40)
Alcohol ≥5 Drinks	2.37 (6.06)	0.47 (2.31)*	0.74 (3.49)*
Alcohol ≤4 Drinks	0.63 (1.88)	0.50 (1.83)	0.42 (1.45)
Any Illegal Drug Use	3.34 (7.19)	1.36 (4.58)	0.72 (3.32)
Cocaine (Mean, SD)	2.36 (6.37)	1.32 (4.59)	0.19 (0.92)*
Marijuana (Mean, SD)	0.87 (4.58)	0.11 (0.38)	0.55 (3.13)
Mental Health Consequences of Drug Use[1]			
Stress from Drug or Alcohol Use	2.98 (1.37)	2.24 (1.66)*	3.05 (1.88)
Gave Up / Reduced Activities	2.55 (1.42)	1.39 (1.82)	3.03 (1.94)
Emotional Problems	2.78 (1.31)	2.35 (1.76)	3.28 (1.89)
Housing			
% Housed	12%	24.4%	45.2%*
Employment			
% Employed Part-Time	2.1%	2.1%	8.5%
% Employed Full-Time	0.0%	20.8%	19.1%
% with Any Employment	2.1%	22.9%*	27.7%*

* Indicates significant difference from baseline.

[1] Response scale ranges from 1 (*not at all*) to 4 (*extremely*).

GPRA Outcomes. Table One describes outcomes for key areas assessed by the GPRA measure. With regard to change in average days of past month substance use, significant change over time was detected for drinking 5 or more alcoholic drinks and cocaine use. Chi square tests comparing the percent of participants using each drug over the past month revealed significant reductions in past-month use of any illegal drugs and use of cocaine from baseline to 12-month follow-up. With regard to housing, a significantly greater proportion of clients were housed at 12-month follow-up compared to baseline with a steady increase in rates of housing observed over the three time periods. Employment data also indicate statistically significant increases in the percent of clients reporting any form of employment at both follow-up periods as compared to baseline/intake.

Figure 2. Mental Health Symptomatology



Mental Health Symptomatology. The statistical significance of change over time in mental health symptomatology as measured by the Brief Symptom Inventory was evaluated using a series of univariate repeated measures analyses of variance. Results indicated significant change over time for the Global Severity Index as well as every BSI subscale except Hostility, though it should be pointed out that clients scores lowest in Hostility at both the baseline and 12-month follow-up. Figure Two graphically depicts clients' average BSI scores over time.

Discussion

The implementation of the Keystone program is a prime example of systemic change and quality improvement within a program and with the community at large. The Agency for Community Treatment Services (ACTS) successfully "transformed" a traditional substance abuse residential treatment facility to a "co-occurring capable" mental health and substance abuse program, whose boundaries and aftercare services spread throughout this multi-county community. This was evidenced by ACTS' collaboration with Directions for Mental Health (subcontractor) who provided on-site mental health services and homeless aftercare services, and with Boley Centers, Inc. who provided employment/vocational services. Other provider agencies were brought into the process from the beginning with "open-door" invitations to training and consultation provided by the grant with Dr. Kenneth Minkoff and the evaluation team at USF-Florida Mental Health Institute

Summary. In conclusion, the Keystone program was a catalyst for moving the entire organization forward as a co-occurring capable and enhanced provider in the community. ACTS also had a dramatic impact on modeling for other agencies in the Suncoast service region of Florida and has been recognized at several state conferences as an agency with the capability of serving persons who are homeless with co-occurring disorders. This experience has led ACTS to expand its target population to serving persons with forensic mental health and substance use histories. The State of Florida, DCF Substance Abuse and Mental Health Program Office, has provided the Keystone program with a sustainable funding base to continue services for person with multiple problems in the community rather than in institutional or homeless settings. The major components of the CCISC Model as outlined by Minkoff and Cline (2001) are system-level change, efficient use of existing resources, incorporation of best practices, and integrated treatment philosophy. The Keystone program has successfully transitioned from offering exclusively substance abuse treatment to serving clients with mental health and substance use needs as well as addressing vocational and employment concerns. Beyond program integration, the system of care has developed as multiple agencies have established relationships in order to transition clients from residential treatment to more independent living. Some issues to consider include the following:

- Expand the CCISC model throughout the organization – ACTS has made a major commitment to implementing the CCISC model.
- Improve integrated treatment relationships and discharge planning, particularly with community mental health and substance abuse organizations that provide continuing care for Keystone clients after they leave the program.
- Expand the on-site and off-site employment services with Boley Centers, Inc. - consider implementing the Individual, Placement and Support (IPS) model of supported employment with this targeted co-occurring population.
- Continue to develop supportive housing services throughout the community by utilizing best practices to obtain housing.
- Share the results of the Keystone program – particularly with the State of Florida's DCF Substance Abuse and Mental Health Program Office, the local Homeless Coalitions in Hillsborough and Pinellas County, State DCF Office on Homeless, and the State Council on Homelessness.

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