Evaluation of a Life Functioning Goal Attainment Psychosocial Treatment Program for Adults with Psychotic Disorders

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Abstract

Purpose: To determine if the use of an integrated goal attainment cognitive behavioral social skill training program can impact serious mental illness related treatment and life functioning avolition.

Methods: The attendance and goal attainment progress of thirty-eight serious mental ill diagnosed adults admitted to psychiatric clinic's integrated goal attainment cognitive behavioral social skills group training program were studied. Demographic (age, gender, race, education), clinical (psychiatric diagnosis, trauma history), and life experience (work, income, housing, relational status, friendship support, incarceration and drug arrest histories) variables were compared to identify possible program attendance and goal attainment level associations and differences.

Results: Participants attended a mean of 8 program days of the 6 to 8-week program with younger and unmarried attending significantly more days than older and married participants. Greater attendance and participation rates were positively correlated with higher levels of assessed goal attainment.

Conclusions: Individuals with serious mental illness conditions are likely to voluntarily attend and participate in psychosocial intervention programs focused on major area life functioning goal attainment. Higher levels of attendance and participation were associated with higher levels of short-term goal attainment. Functioning focused psychosocial interventions may be effective in reducing serious mental illness related avolition.

Keywords: Avolition; Serious Mental Illness; Functioning Goal Attainment; Defeatist Performance Beliefs; Stress/Trauma; Recovery

Abbreviations

SMI: Serious Mental Illness; CBSST: Cognitive Behavioral Social Skills Training; CBT: Cognitive Behavioral Therapy.

Introduction

Serious mental illness (SMI) related avolition, the "lack of interest or engagement in goal-directed behavior", has been identified as the central factor contributing to deficits in social interactions, affective expression, experienced pleasure, cognitive decision making, and levels of major life area functioning including work, interpersonal relations, academic pursuits, and self-care [1-4]. A primary component of avolition is believed to be the abnormal white matter connectivity in motivation-related circuits resulting in an impaired connection between action (behavior) and outcome (effect) and a diminished interest in and motivation for setting and pursuing goals [5-8].

Avolition and its' negative symptom and deficit functioning tributaries has been attributed to hypofunctionality of dopamine D1 receptor neurotransmission (i.e., low level dopamine activity) in the prefrontal cortex [9]. Positive symptoms of SMI psychotic conditions have been attributed to hyperactivity of dopamine D2 receptor neurotransmission in subcortical and limbic brain regions (i.e., high level activity). Treatment of psychotic conditions is primarily focused on reducing disturbing positive symptoms (e.g., delusions, hallucinations, disorganized speech, and grossly disorganized or catatonic behavior) usually with an activity level reducing dopamine agonist agent. Dopamine agonist medications are believed to increase avolition largely through reducing the cognitive capacity to learn new associations and the motivation reducing blockade of the mesolimbic reward system [10]. While medication induced lower levels of dopamine activity may increase avolition-related functioning disabilities, avolition, usually the first symptom of psychosis, generally precedes the introduction of dopamine agonist agents [2]. Increasingly there is a push to look beyond dopamine agonist antipsychotic medication in addressing serious mental illness related avolition [11,12].

Increased SMI-related avolition and associated disabling functioning and decreased dopamine level activity have been associated with experiencing behaviorally disconnecting stressful events such as childhood sexual abuse, traumatic occurrences, racial discrimination, significant losses, social defeat, and stigmatization, and chronic psychosocial adversity/stress [13-18]. Chronic variable stress disrupts reward processing by altering the attribution of incentive to associated cues impairing the function of multiple brain regions and causing a range of severe hedonic and motivational deficits [19]. It is hypothesized that SMI vulnerable recipients of confusing, non-contingent negative occurrences learn events happen in their lives independent of their behavior, i.e., there is an action – outcome disconnect, that leads to a lack of self-efficacy and cognitive defeatist functioning beliefs [20]. There are efforts to address these avolition-related beliefs through the development of specialized interventions [21-24]. The belief that SMIs are incurable, irreversible conditions may contribute to defeatist beliefs about recovery and improved functioning among recipients, family members, and providers of psychiatric treatment services [25,26].

Manifestations of avolition in psychiatric service delivery include low, participation, and sustained involvement in clinical treatment settings, reduced goal-directed pursuit, and low major life area attainment and maintenance levels [27,28]. Individuals with SMI conditions, especially when combined with substance use, contact with the criminal justice system, and minority status, have observed higher rates of treatment non-attendance, non-adherence, and drop-out, and lower rates of attained and sustained major life area functioning [29].

Though there appears to be no available treatment for avolition and other negative symptoms that have reached the threshold for robust clinically meaningful improvement Fusar-Poli P, et al. [30], major life functioning goal focused treatment, combined with recovery oriented, person-centered approaches that recognize and remediate goal interfering factors have shown promise in significantly reducing behavioral manifestations of avolition, including treatment disengagement and related negative symptoms [31-38]. Approaches including behavioral activation, motivational interviewing, supportive employment and housing, social/relationship enhancement, cognitive and behavioral remediation and skill approaches have been shown to be effective in decreasing avolition and improving major life area behavioral functioning with individuals diagnosed with SMI conditions [39-42].

This report describes the development, utilization, and preliminary effectiveness of a person resiliency focused, behavioral goal attainment intervention program for individuals diagnosed with avolition related SMI conditions

Materials and Methods

Program Description: The intervention program is a modified version of the Cognitive Behavioral Social Skills Training (CBSST) program [43]. Instead of one weekly in-person group session, the modified program included four 50-minute virtual group sessions per week over six-to-eight weeks. Each weekly group session focused on one of the social, cognitive, or problem-solving CBSST skill modules or a fourth goal attainment module developed specifically for this program. All group sessions were conducted virtually using a secure Zoom telehealth platform. The groups consisted of one-to-five participant group members and a minimum of two, but usually three participant facilitators (one of whom is the identified primary group leader). Group participant facilitators were individuals trained or actively being trained in providing humanistically applied adaptive functioning-oriented interventions.

Resiliency and Recovery Focus

The modified CBSST program incorporated a recovery/growth framework. Each person, no matter the title or facilitator or participant role, functioned as a non-hierarchical member in the group, engaging in activities, role plays, and exercises, sharing personal challenges and successes, giving and receiving feedback and suggestions for improvement, and completing out-of-group (homework) assignments. All group members were considered and interacted with

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as "normal" (no matter the given diagnosis or ascribed pathology) and their thoughts, feelings, and behaviors were considered understandable responses to their current and historical situations, circumstances, experiences, stressors, traumas, conditions, exposures, and environments. Individuals were understood in terms of their personal frame of reference. The groups were run using a strengths-based, positively valued, non-judgmental approach with a particular emphasis on identifying things that were working well and using things not working well as opportunities for improvement. Ascribing negative terms like "wrong", "bad", "terrible" or attributing problems to a "mental illness" was avoided.

Emphasis on Adaptive Behavioral Functioning Goal Attainment

The modified CBSST program focused on adaptive functioning goal attainment and emphasized adaptive skill mastery. Each group session sought to help participants utilize a specific skill that could assist with achieving their personal goals. Each participant was introduced to ways to more effectively and efficiently perform skill sets and independently practice and use each improved skill set in everyday living. During each group session a practically useful skill was introduced and practiced, followed by assigned practice the skill "homework" in a non-clinical, natural environment. Each module's skill set was broken down into small, progressive steps, e.g., the goal attainment step of being able to make a realistic, achievable goal preceded the next step of identifying someone to speak with about specific strategies to achieve the goal.

Goal Attainment Skills

The Goal Attainment Skills module's focused on helping participants develop and work towards attaining an adaptive behavioral functioning goal. At least one short-term (6-week) goal, aligned with a long-term (6-month) goal was developed for both group participants and facilitators. Developed goals were encouraged to be within adaptive major life area-oriented functioning (e.g., work/employment, housing, family/friend relationships, school/training, enjoyment/fun, or self-care domains) instead of problem-oriented focused domains (e.g., feel less depressed, stop hearing voices …). The "SMART" goal framework was utilized to help participants develop goals that are specific, measurable, achievable, relevant (meaningful), and time-bound [44]. Each participant's 6-week and 6-month goals became the focus of all the groups within the modified CBSST program.

The 11 step Goal Attainment Scaling worksheet (starting at step zero - "Thinking about setting a goal"- and ending at step ten - "Maintain/exceed target goal"- was used to promote goal attainment [45]. Each Goal Attainment session introduced and provided examples of one-to-two of the steps, and then individualized support, coaching and guidance were provided in virtual breakout sessions during the group session time.

Cognitive Skills

The Cognitive Skills Module focused on teaching strategies for identifying and examining unhelpful thoughts, and generating alternative, more helpful thoughts. Group members were introduced to the general concepts of cognitive behavioral therapy (CBT), including the relationship between thoughts, actions, and feelings (generic cognitive model), automatic thoughts, thought challenging through behavioral experiments and examining evidence for beliefs, and identifying thinking traps. This module includes the "3C's" cognitive approach: Catch It, Check It, and Change It ("It" is an unhelpful thought). The cognitive skills group addressed defeatist functioning beliefs that interfered with or prevented participants from attaining their goals.

Social Skills

The Social Skills Module focused on ways to improve communication and relational skills through teaching and practicing active listening, expressing positive and negative feelings, and making positive requests. Many of the role plays emphasized interacting with other people who could help group members attain their goals.

Problem-Solving Skills

Basic problem-solving skills were taught using the acronym SCALE-– Specify the problem, consider all possible solutions, Assess the best solution, lay out a plan, and Execute and Evaluate the outcome. The focus was on developing specific, feasible plans to solve real-world problems that were interfering with group members attaining their goals.

Participants

Participants were 37 individuals being treated for psychotic featured involved SMI conditions in an urban setting adult outpatient behavioral health clinic who agreed to participate in the modified CBSST program between July 2020 through January 2022.

Table 1 displays demographic, clinical, and life-experience information about the study sample. Participants were between 20 and 70 years old with a mean age of 35.51. About half were women (51.4%): the majority were Black/African American (78.4%); about half had some post-high school education (51.4%); close to half had been diagnosed

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with Schizophrenia (48.6%) with other participants diagnosed with either Schizoaffective Disorder (29.7%) or a primary mood disorder (21.6%); more than half self-reported previously experienced trauma (62.2%); most were not working (89.2%), lived with other people (64.9%), single (86.5%), reported having no friends (56.8%), and had been incarcerated in the past (59.5%; only 24.3% had been arrested for a drug-related crime). About half of the participants received some type of income (48.6%) primarily through being Social Security Disability Insurance (SSDI) benefit recipients.

Study Procedures

This study was a retrospective chart review of the electronic medical records of the identified 37 program participants. Only the participation data for the first cohort in which an individual participated was examined. There were no exclusion criteria for this study. This study was approved by the Emory University Institutional Review Board (study #00004553).

Measures

Demographics

Each participant's electronic behavioral health assessment record was reviewed to access reported age at the time of program participation, gender, race, and educational status. For some analyses, age was dichotomized into either 18-34 years and 35 or more years and educational status dichotomized into either 12th grade or less and post-high school higher education.

Clinical Variables

Each participant's electronic psychiatric assessment was reviewed to access the primary psychiatric diagnosis, and the behavioral health assessment was reviewed to obtain the presence of a self-reported trauma history.

Life Experience Variables

Each participant's electronic behavioral health assessment was reviewed to access the presence of self-reported work, income and income source, housing (categorized as living alone or living with other people), relationship (categorized as single/divorced/separated or married/partnered), friendship support (categorized as having no friends or one or more friend/s), incarceration history, and drug arrest history statuses.

Program Attendance

Each participant's electronic group progress notes were reviewed to calculate attendance (the total number of days attended).

Goal Progress Ratings

Each participant's electronically recorded goal attainment note was reviewed to obtain facilitator accessed highest level of goal attainment ratings.

Data Analysis

Data were entered into IBM SPSS Statistics (Version 28). Descriptive statistics were examined, and data were assessed for outliers and non-normality using histograms and scatterplots. Since the continuous variables were not normally distributed and the sample size was low, non-parametric tests were used. There was no missing data to account for in the dataset.

To examine differences in demographic, clinical, and life experience variables between those who attended at least one day and those who did not attend at all, the Mann-Whitney U test was used for continuous variables and the Fisher's exact test was used for categorical variables due to small sample sizes and expected low cell counts. Since the Fisher's exact test can only be used with 2X2 contingency tables, when examining differences between those who attended and those who did not attend, Schizophrenia and Schizoaffective Disorders were combined and compared to stand alone Mood Disorders [46].

To examine whether program attendance (a continuous variable) varied by demographic, clinical, and life experience variables, the Mann-Whitney U test was utilized for dichotomized categorical variables and the Kruskal-Walli's test was utilized for greater than two categorical variables.

To determine the association between program attendance and goal attainment progress level, Spearman's correlation coefficient was calculated.

Results

Preliminary Analyses: From July 2020 through January 2022, 37 people were scheduled to participate in at least one cohort of the modified CBSST program. The means, standard deviations, and frequencies for the study variables of the 37 individuals scheduled to participate in the modified CBSST program are displayed in Table 1. The only significant variable difference between the 30 individuals who attended at least one day and the 7 individuals who agreed to participate but never attended was those who attended were younger (M = 33.37 years old) than those who did not attend (M = 44.71), U = 44.50, p < .05.

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Measure	Total (n = 37)		CBSST Participants (n = 30)		No Shows (n = 7)	
	Mean (SD)	Frequency (%)	Mean (SD)	Frequency (%)	Mean (SD)	Frequency (%)
Demographics						
Age	35.51 (12.11)		33.37 (11.45)*		44.71 (11.15)*	
Gender						
Man		18 (48.6)		15 (50.0)		3 (42.9)
Woman		19 (51.4)		15 (50.0)		4 (57.1)
Race						
Black/African American		29 (78.4)		23 (76.7)		6 (85.7)
White/Caucasian		8 (21.6)		7 (23.3)		1 (14.3)
Educational Status						
12th Grade or Less		18 (48.6)		13 (43.3)		5 (71.4)
More than 12th Grade		19 (51.4)		17 (56.7)		2 (28.6)
Clinical Variables						
Diagnosis†						
Schizophrenia		18 (48.6)		14 (46.7)		4 (57.1)
Schizoaffective Disorder		11 (29.7)		8 (26.7)		3 (42.9)
Mood Disorder		8 (21.6)		8 (26.7)		0 (0.0)
Trauma History						
Previous Trauma		23 (62.2)		19 (63.3)		4 (57.1)
No Previous Trauma		14 (37.8)		11 (36.7)		3 (42.9)
Life Experience Variables						
Work Status						
Working		4 (10.8)		3 (10.0)		1 (14.3)
Not Working		33 (89.2)		27 (90.0)		6 (85.7)
Current Income Status						
Income		18 (48.6)		14 (46.7)		4 (57.1)
No Income		19 (51.4)		16 (53.3)		3 (42.9)
SSDI Income Status						
SSDI Income		16 (43.2)		13 (43.3)		3 (42.9)
No SSDI Income		21 (56.8)		17 (56.7)		4 (57.1)
Housing Status						
Live Alone		13 (35.1)		8 (26.7)		5 (71.4)
Live with Others		24 (64.9)		22 (73.3)		2 (28.6)
Relationship Status						
Single/Separated/Divorced		32 (86.5)		26 (86.7)		6 (85.7)
Married or Partnered		5 (13.5)		4 (13.3)		1 (14.3)
Friendship Support Status						

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1 or More Friends		16 (43.2)		13 (43.3)		3 (42.9)
No Friends		21 (56.8)		17 (56.7)		4 (57.1)
Drug Arrest History						
Previous Drug Arrest		9 (24.3)		7 (23.3)		2 (28.6)
No Previous Drug Arrest		28 (75.7)		23 (76.7)		5 (71.4)
Incarceration History						
Jail/Prison History		22 (59.5)		16 (53.3)		6 (85.7)
No Jail/Prison History		15 (40.5)		14 (46.7)		1 (14.3)

Note: N = 37. SD = Standard deviation. *Statistically significant difference at $p < .05$. †Due to small sample sizes, when examining differences between CBSST participants and individuals who did not attend the program, Schizophrenia and Schizoaffective Disorders were combined and compared to Mood Disorders.

Table 1: Means, Standard Deviations, and Frequencies for Study Variables.

The average number of days attended for the 30 individuals who attended at least one day was 5.57 (SD = 4.99). The only significant variable differences found among those who attended at least one day were younger participants (i.e., those 18-34 years old) attended more program days (M = 8.42) than older participants (35-70 years old; M = 4.18), U = 47.00, $p < .05$, and single participants attended more program days (M = 7.62) than married participants (M = 2.00), U = 12.00, $p < .05$ Table 2.

Measure	Mean (SD)
Demographics	
Age	
18-34 Years Old	8.42 (4.57)*
35-70 Years Old	4.18 (3.54)*
Gender	
Man	7.73 (4.61)
Woman	6.00 (4.69)
Race	
Black/African American	6.78 (4.66)
White/Caucasian	7.14 (4.98)
Educational Status	
12th Grade or Less	7.08 (5.30)
More than 12th Grade	6.71 (4.25)
Clinical Variables	
Diagnosis	
Schizophrenia	7.21 (5.21)
Schizoaffective Disorder	7.63 (4.03)
Mood Disorder	5.50 (4.47)
Trauma History	
Previous Trauma	6.26 (4.70)
No Previous Trauma	7.91 (4.59)
Life Experience Variables	
Work Status	

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Working	4.67 (2.08)
Not Working	7.11 (4.81)
Current Income Status	
Income	7.36 (5.14)
No Income	6.44 (4.30)
SSDI Income Status	
SSDI Income	7.62 (5.44)
No SSDI Income	6.29 (4.03)
Housing Status	
Live Alone	6.63 (4.34)
Live with Others	6.95 (4.85)
Relationship Status	
Single/Separated/Divorced	7.62 (4.53)*
Married or Partnered	2.00 (1.15)*
Friendship Support Status	
1 or More Friends	5.69 (4.55)
No Friends	7.76 (4.66)
Drug Arrest History	
Previous Drug Arrest	6.14 (4.41)
No Previous Drug Arrest	7.09 (4.80)
Incarceration History	
Jail/Prison History	6.31 (4.48)
No Jail/Prison History	7.50 (4.93)

Note: N = 30. SD = Standard deviation. *Statistically significant difference at p < .05.
Table 2: Number of Program Days Attended Across Demographic, Clinical, and Life Experience Variables.

Primary Analysis

Twelve individuals attended one-to-four program days, seven people attended five-to-eight program days, six people attended nine-to-twelve program days, and five people attended thirteen-to-sixteen program days Table 3.

Number of Program Days Attended	Total Number of Participants (%)
0	7 (18.9%)
4-Jan	12 (32.4%)
8-May	7 (18.9%)
12-Sep	6 (16.2%)
13-16	5 (13.5%)

Note: N = 37.
Table 3: Total number of program days attended by CBSST participants in their first cohort from July 2020 through January 2022.

Five of the 30 individuals who attended groups never developed short or long-term goals (usually because they attended only one goal attainment group where ratings were made). Most of the 25 individuals who did develop goals chose a primary goal related to work followed by self-care Table 4.

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Adaptive Functioning Goal Area	Total Number of Participants (%)
Work	10 (40%)
Self-Care	8 (32%)
Education/Training	3 (12%)
Family/Friend Relationships	3 (12%)
Housing	1 (4%)
Enjoyment/Fun	0 (0%)

Note: N = 25.
Table 4: Adaptive Functioning Goal Areas Selected by Program Participants.

Six of the 30 individual who attended a minimum of one group never received the first goal progress rating which usually occurred during the second goal attainment group day which occurred on the program's third group day. The average final goal progress level rating received by the 24 program participants was 3.75 (SD = 2.92). Spearman's correlation between the number of program days attended and each participant's final goal progress rating was statistically significant, rs = 0.73, p < .05. This represents a large effect size, and a scatterplot of the data is presented in Figure 1.

Figure 1: Scatterplot of the final goal progress rating and number of program days attended for each program participant. R^2 Linear = 0.49. N = 24.
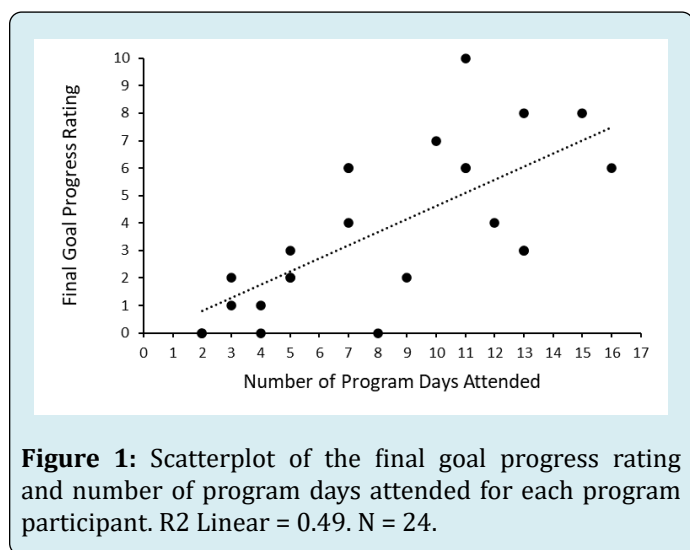
Discussion

This study demonstrated individuals living with serious mental illness-related avolition can voluntarily engage, identify meaningful short-term functioning goals, and progress towards attaining those goals in an intense, recovery-oriented goal attainment cognitive-behavioral social skills group intervention program. Given that the sample population was largely made up of individuals least likely to participate (adhere or comply) in outpatient psychiatric treatment, e.g., young, Black, men, schizophrenia spectrum diagnosed, with limited education and income, and

histories of traumatic, significant substance use, and forensic incarcerations, our findings suggest there are promising avolition penetrating psychosocial approaches that facilitate interest and engagement in functional goal-directed behavior, even among individuals generally considered to be unlikely goal attainment participants.

The higher than literature reported group attendance rates and goal attainment progress with study participants may be attributable to: 1) the intervention focus on attaining personally desired functioning goals (a hope and success ability orientation); not restraining disruption management and control approaches frequently employed with individuals with serious mental illness conditions, 2) normalizing experiences as extensions of shared challenge-facing cognitive, emotional, and behavioral coping efforts; not abnormal indications and symptoms of circumstance-independent illness conditions unique to too often stigmatized individuals with serious mental illness conditions, and 3) using intensively delivered, merged evidence-based interventions that enable individuals to actively improve their skills in handling goal attainment interferers Rao KN, et al. [47]; not hierarchically delivered, anti-motivating approaches frequently focused on externally controlling problematic, disruptive functioning. The higher participation and associated goal step-level attainment with younger individuals in this study may indicate individuals with earlier stages of SMI conditions may be more receptive to and desirous of non-pathological, personal functioning goal-oriented interventions.

This study has confidence limitations in the generalizability of its' findings. Study limitations include: 1) being a retrospective chart review study with no matched control group anchoring between group comparisons; 2) all study measures were within group comparisons with other comparisons inferred from variable factors and reports in the general psychiatric literature; i.e. treatment (usually meaning prescribed medication) nonadherence and dropout rates ranging from 25% to 90%, with lower treatment nonadherence and dropout rates with some psychosocial

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interventions Villeneuve K, et al. [48]; 3) measured goal attainment levels were assessed by group leader clinicians and based on each individual's reported step progress (homework) and accomplishments at the conclusion of each weekly goal attainment group – not independently assessed by trained assessors using standardized measures or instruments; 4) the study sample size was small limiting statistical power; 5) the study sample primarily consisted of public-sector funded, inner-city residing, lower socio-economic status (SES) individuals who may have different responses to treatment interventions than individuals with demographically, socially, and co-occurring condition differences usually associated with higher SES individuals Bennett D, et al. [49]; and 6) levels of avolition and related "negative symptoms" were inferred from psychiatric intervention attendance and participation, goal attainment, and major social factor functioning, not standardized recovery oriented avolition/volition (amotivation/motivation) outcome measures [50,51]. Another limitation to this study is its' focus on factors associated with treatment engagement and initiating and improving a level of a major area of life functioning; it did not look at some of the important and needed standard behavioral healthcare outcome indicators including symptom, overall functioning, and quality of life measures.

Conclusion

This record review observational study showed that the implementation of an intensive, goal attainment cognitive-behavioral social skills program can begin breaking avolition's lack of interest or engagement in goal-directed behavior with individuals with serious mental illness conditions. Individuals with debilitating avolition-related major life functioning deficits can be facilitated to create realistic functioning goals and engaged in the behavioral process of functioning goal attainment. These findings suggest the adjunctive use of functional goal oriented psychosocial interventions can improve major life area functioning and decrease negative symptomatology lack of functioning for individuals with serious mental illness conditions.

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