Study Title: Motivation Skills Training for Schizophrenia

Clinicaltrials.gov: NCT05746455

Study Protocol

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Protocol Information:

IRB of Record: New York State Psychiatric Institute (subsequently transferred to Columbia University)
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Background, Significance and Rationale: Schizophrenia is a major public health problem associated with core motivational deficits that are amongst thestrongest predictors of impaired functional outcomes. Without motivation, people are unable to maintain their pursuit of employment or educational goals, engage in treatment, and regularly participate in healthy life decisions. Current pharmacological and psychosocial treatments for schizophrenia have demonstrated limited effectiveness for improving this core symptom. The processes by which individuals identify, monitor, and control their motivational states in service of their goals are collectively known as *metamotivation.* We developed a group-based intervention, **Motivation Skills Training (MST)** by drawing from the motivation-science literature and strategies employed in educational settings that teach students to self-regulate motivation and thereby improve academic performance. Pilot data support the efficacy and acceptability of MST, which provides training in strategies to self-motivate in order to enhance the initiation of and persistence in goal-directed activities. This proposal takes the next steps to address three key questions:

1. Is MST, a group-based motivation skills intervention, feasible and acceptable for people with schizophrenia attending outpatient community mental health clinics?
2. Do people with schizophrenia who participate in MST demonstrate increased motivation to engage ingoal-directed behaviors?
3. Does the addition of MST to existing recovery-oriented services improve functional outcomes?

Purpose: Facilitate a scalable approach to treating motivation impairment in people with schizophrenia spectrum disorders. Quantitative outcomes and qualitative data gathered from service recipients and providers during anopen trial of MST in an outpatient community clinic will inform refinements to treatment parameters and contentto improve target engagement, acceptability, and clinical utility.

Study Locations: New York State Office of Mental Health licensed outpatient community clinic.

Description of Subject Population: The study sample includes adults with schizophrenia and schizoaffectivedisorder age 18-65 receiving routine services.

Procedures: This is an open trial of MST taking place in one outpatient mental health clinic with 1-2 licensed mental health clinicians providing MST. Clients receiving an array of group-based outpatient services are asked if they would like to learn more about MST and about research. Interested clients are referred to a trained member of the study team for additional information, informed consent and eligibility screening according to inclusion/exclusion criteria. Through these procedures, the goal is to enroll 10 participants who are adults with a DSM-5 diagnosis of schizophrenia or schizoaffective disorder, age 18-65, fluent in English, and medically and psychiatrically stable. For those who consent for research, eligible participants undergo baseline assessment including sociodemographic and psychosocial data and structured measures of motivation and goal attainment. MST occurs in weekly, small group 90-minute sessions over the span of 12- 14 weeks. Participants may remain engaged in a variety of outpatient services ranging from individual psychotherapy and medication management, to supported employment. There are no change to these treatments as usual. Each MST session entails (1) psychoeducation to introduce motivation knowledge and self-regulation skills, (2) individualized goal setting and progress tracking, (3) group workshopping around skill applications and supports. Individualized goal setting and weekly review of goal progress provides the context for identifying what factors are positively or negatively impacting one's motivation and for directly applying motivation knowledge and skills. Research participants including those who exit early from MST and MST graduates, are asked to complete a satisfaction questionnaire that asks about the acceptability of the assessment procedures and whether MST sessions were found to be helpful for self- motivation, steps toward goal attainment, and functioning in day-to-day life. Additional questions will ascertain the benefits andchallenges to completing sessions. Participants will be asked to repeat measures of motivation, goals, symptom severity, and functioning. Data summarized from pre-post assessments, satisfaction evaluation, and feedback will be used to refine the assessment protocol, treatment parameters, skills training content and the structure of the treatment manual.

Informed Consent: The process of informed consent occurs in-person at the recruitment site where individuals are receiving their mental health services. All who agree to an initial meeting with research personnel have the full study explained to them and have ample opportunity to ask questions prior to signing consent. The process of informed consent includes explanation of the amount of time required, the possible risks and benefits of study participation, their right to refuse participation in the study without prejudice and alternatives to study participation, their right to terminate participation at any moment without prejudice, procedures to protect confidentiality, and the contact information for the PI and IRB. The risks of travel for in-person visits during COVID-19 is discussed. A consent procedure note documents this. The consent process includes discussion of the possibility for remote research procedures if completion of certain components of the protocol in-person (e.g. interviews) is no longer possible.This discussion describes the HIPAA-compliant platforms to be used and any concerns the potential participant may have, such as access to a private space, access at home to adequate devices, cell signal, or wifi. The consent note documents this discussion.

The research team uses additional safeguards during the consent process to ascertain capacity by asking and assessing responses to the following questions:

1. Do you have to participate in this study?
2. Can you describe some things you would be asked to do if you participate in this study?
3. Can you tell me one risk that is involved when participating in research?
4. Can you tell me how we protect your privacy (i.e. keep your personal information confidential)?
5. What should you do if you are uncomfortable or want to stop participating in an activity that is part of the research?
6. If you decide not to participate, will your treatment at this clinic be affected?

A list of possible correct answers is provided to the researcher performing this assessment. Incorrect responses are immediately addressed to clarify the information and the question is asked again to ensure that clients understand the information provided. If the client's capacity is in question, the referring clinician is consulted. A progress note in the research chart documents the process of informed consent and the results of the capacity assessment conductedby the member of the research team.

Eligibility:

CRITERION	METHOD OF ASCERTAINMENT
Inclusion:	
1. Age 18-65	1. Client report of DOB, checked by Chart Review
2. A primary DSM-5 diagnosis of schizophrenia or schizoaffective disorder 3. Medically and psychiatrically stable outpatient status	2. Referral Source or Chart Review, confirmed bystructured clinical interview (SCID-5) 3. Referral Source or Chart Review, confirmed by C-SSRS
4. English Fluency	4. Observation during Informed Consent, checked byTest of Premorbid Functioning (TOPF)
Exclusion:	
1. Indications of Intellectual Disability as documented in medical history or measured by < 70 premorbid Full ScaleIQ	1. Referral Source, Medical history, confirmed byTOPF

Criteria for Early Discontinuation: Criteria for early discontinuation follow clinic-based guidelines. A person is discontinued from a service if they are no longer able to attend at the expected rate of weekly sessions due to scheduling conflicts(e.g. work/school), hospitalization for medical or substance use treatment, inpatient psychiatric hospitalization,or discharged from the clinic. The clinicians use clinical judgment as to the appropriateness of continued participation for each person, taking into account evidence of clinical worsening, suicidality, or other issues that may arise during participation. Consultation with the PI will be sought through routine supervision prior to discontinuation. No additional criteria will be used for research purposes.

Assessment Measures:

Structured Screening Assessments: (1) The *Structured Clinical Interview for DSM 5* (SCID-5) is used to confirm a chart diagnosis of schizophrenia or schizoaffective disorder and screen out severe substance use in the past 3 months. (2) The *Test of Premorbid Functioning* (TOPF) estimates premorbid intellectual functioning. Inclusion requires an estimated Full Scale IQ of ≥ 70. (3) The *Columbia-Suicide Severity Rating Scale* (C-SSRS) is administered to assess risk

and psychiatric stability. Screening assessments take about 30 minutes in total to complete. (4) The Mini Mental Status Exam (MMSE) is used only in participants age 60 and older to rule out mild to severe cognitive impairment associated with possible dementia.

Sociodemographic and Psychosocial Data: At baseline, sociodemographic data includes racial and ethnic identification, gender identity, age, and educational attainment. Psychosocial data includes illness onset and chronicity, current independent living and employment status. These data take about 10 minutes to obtain.

Outcome Measures: Baseline and post-treatment assessments include measures of motivation, goal attainment and community functioning.

Motivation: The *Motivation and Pleasure* (MAP) subscale of the Clinical Assessment Interview for Negative Symptoms (CAINS) is used to assess the intervention target, motivation. The CAINS was developed utilizing recommendations from the NIMH-MATRICS Consensus Development Conference on Negative Symptoms. The MAP is a 9-item clinical interview which examines motivation, pleasure, and engagement in work, school, recreational and social activities. The MAP scale is reliable and has been shown to be correlated with real-world functioning and self-rated quality of life. This measure will take about 20 minutes to complete. Average MAP item score at baseline will be used to stratify participants by degree of motivation deficit (≥2 moderate-severe vs <2 mild) within each clinic for randomization. Change in total MAP score is the primary outcome.

Functional Outcomes: (1) The primary functional outcome is goal attainment using *Goal Attainment Scaling* (GAS), a standardized, ecologically valid method of measuring the extent to which a participant's recovery goals are achieved in the course of intervention. Individualized goal setting is a routine part of rehabilitation and recovery services and progress towards goal attainment is a sensitive and specific person- centered outcome measure. On the GAS goals are individually identified and anchor points along a continuum of a "successful outcome" are established a priori. We use a scoring method derived from previous research which has shown sensitivity to change in a clinical trial targeting psychosocial functioning in adults with serious mental illness. This measure takes about 20 minutes to complete. (2) The secondary functional outcome measure is the *Heinrichs Carpenter Quality of Life Scale* (QLS), an interviewer-rated measure of psychosocial functioning on four domains: interpersonal functioning; intrapsychic foundations, instrumental role function, and common objects/activities. This measure takes about 20 minutes to complete.

Research Related Delay to Treatment: There is no research related delay to treatment.

Clinical Treatment Alternatives: Individuals who do not participate in research have all treatment options at the clinic where they receive outpatient services made available to them. Participants can decline involvement in the protocol at any time.

Risks/Discomforts/Inconveniences: *Research participation & confidentiality*: The study is conducted with individuals with schizophrenia-spectrum disorders who are referred for skills training through collaborative decision making with their treating clinician, and therefore have a pre-determined capacity to take part in decisions about their treatment. Because the procedures and intervention strategies are considered no more than minimal or standard risk, the designated population has capacity to consent to participate in research. The greatest risk involved in this study is loss of confidentiality as sensitive information (e.g., diagnosis, symptoms) will be collected for research. However, all health information collected for research

is de-identified. Methods toprotect confidentiality are described in the next section.

Assessments: Goal setting, psychiatric symptom and functional assessment measures are commonly used inpsychiatric treatment contexts including the outpatient facilities where this study will take place. Some participants may find the interviews tiring. Some participants may become uncomfortable talking about their psychiatric symptoms. Extra precautions to ensure that no person is overwhelmed will include: (1) offering breaks, (2) offering refreshments, and (3) dividing the assessment session if feasible. The voluntary nature of participating in research procedures will be emphasized as needed.

Intervention: Skills training and psychoeducation are an integral component of recovery-oriented psychosocial services for people with serious and persistent mental illness such as those diagnosed with a schizophrenia spectrum disorder. We therefore expect that participants will be able to engage in the skill learning activities and do not anticipate any undue burden to participants during either intervention. Although there are no anticipated risks as a function of MST, given that the sample involves people with psychotic disorders, and that people may struggle with motivation specifically, special attention is devoted to minimizing perceived burden, stress, and ensuring participant safety. The clinicians facilitating the intervention sessions are specialists in providing behavioral interventions to this population and are attentive to signs of burden, stress, or fatigue. Breaks during treatment sessions are offered as needed. Session attendance is tracked; participants discuss progress and troubleshoot barriers to participation with the treating clinician on a weekly basis. The relevance of skill learning (to enhance motivation or to enhance healthand well-being) to everyday life is a focus of the intervention. The content of the intervention and the style of intervention delivery is sensitive to the experience of barriers to treatment engagement. Importantly, therapeutic content and skills training techniques are designed to support individuals' sense of competency, autonomy, create a sense of relatedness among group members and clinicians, which are all factors associated with treatment engagement and learning success. Helping participants to recognize the value and to create personal meaning promote engagement and minimize stress.

Necessary or requested treatment for psychosis and other disorders: Participation in this study does not alter clinical treatment for psychosis or other disorders (e.g., medication management, skills training) as designatedby the treatment team. Changes in mental status that coincide with the study would likely be secondary to the course of the illness as opposed to precipitants associated with the research protocol. Outpatient treatment teams are trained to handle events such as clinical worsening, defined as an increase in symptoms (e.g., hallucinations, paranoia) that causes significant distress, poses imminent risk of harm to self or to others, and/or impairs the ability of the individual to participate in study procedures. Routine structured assessment and management of suicidal behavior and ideation within outpatient treatment is ongoing. When immediate emergency intervention is required, whether clinical worsening becomes evident during assessment or treatment, the evaluating clinician will determine which of three options is indicated: psychiatric evaluation atthe nearest Emergency Department, increased monitoring, or continued treatment at current level of care. A safety planning intervention is then invoked. Any unanticipated adverse event involving a participant in research will be reported immediately to the PI by the appropriate treatment team member. Clinical supervision will allow for routine discussion of participants' clinical stability and ability to continue with treatment sessions.

We further ensure sufficient surveillance of risk by integrating an Independent Safety Monitor (ISM) whose role is defined by the funding agency (NIMH).

Methods to Minimize Risk: Procedures associated with potential loss of confidentiality and measures to protect confidentiality are listed inthe consent form. A HIPAA Authorization form, reviewed at the time of informed consent, lists those entitieswith whom knowledge of participation and data may be shared. Hard copy data (e.g., assessment forms) are labeled with a unique numerical identifier that does not reference any personal information and are stored in a locked cabinet in a locked office accessible only to the research team. Consent forms contain identifying information but are not coupled with identification numbers and are kept in a locked file drawer in a locked office, separate from hard copy data, accessible only to the PI. A secure electronic database in which data is entered is only accessible to the research team. The database is created and managed by the Statistical Analysis Center which collaborates with Columbia University Irving Medical Center's IT Security office to certify systems for use as secure and reliable repositories for clinical data. Public dissemination of the results and data deposited into public repositories will contain no identifying information about individual subjects.

As a federally funded study, there is a Certificate of Confidentiality.

Direct Benefits to Subjects: Participants may or may not learn new information or skills.

Compensation or Reimbursement: Participants in the Open Trial are compensated $40 for the baseline assessment and $50 for the post-treatment assessment.

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