

USING COGNITIVE ENHANCEMENT THERAPY TO PREVENT FURTHER
IMPAIRMENT DUE TO THE IMPACT OF THE SYMPTOMS OF SCHIZOPHRENIA AND
THE IMPLICATIONS FOR COUNSELING AT ASSERTIVE COMMUNITY TREATMENT
PROGRAMS

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TREATMENT PROGRAMS

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Karol Rosman

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Abstract

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Karol Rosman

Under the Supervision of Patricia Bromley, PhD

Cognitive Enhancement Therapy (CET) treats symptoms of schizophrenia with software exercises, group therapy and supportive coaching. Assertive Community Treatment (ACT) programs provide services for people diagnosed with schizophrenia. The purpose of examining both models was to determine if CET could be integrated into ACT. The writer researched scholarly works on the history, methods and studies of ACT and CET. The writer found that both models are holistic, require a multi-disciplinary team, are strength based, are consumer-focused and encourage consumers to be aware of their stage of change. The writer found that it possible to implement CET into ACT.

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Chapter One: Introduction

For most people it is taken for granted that they are capable of pursuing personal goals and dreams for the future. However, people who are afflicted with a severe mental illness such as schizophrenia often find themselves facing impairments that prevent their goals and dreams from coming to fruition (Diamond, 2004). These impairments may have a significant impact on their identity and sense of belonging. Many people who suffer from schizophrenia are unable to work and must rely on entitlements. Their financial status may be below poverty level.

This has become an economic burden in the United States. It was estimated that the overall cost of providing support for people diagnosed with schizophrenia in 2002 was \$62.7 billion dollars (Wu, Bimbaum, Shi, Ball, Kessler, Moulis & Aggarwal 2005). The costs included \$22.7 billion for direct health care, \$7.6 billion for direct non-health care and \$32.4 billion for indirect excess costs. The cost of unemployment wages was the largest portion of the indirect excess cost (Wu et al, 2005).

There is hope. There are Assertive Community Treatment Programs (ACT) that provide case management, initial and ongoing assessments, psychiatric services, employment and housing assistance, family support and education, substance abuse services and other services (Assertive Community Treatment, 2011) that help individuals satisfy their needs and work towards fulfilling their dreams. Antipsychotic medication is an important element in the treatment of schizophrenia, but it is not enough (Diamond, 2004). Twenty percent of people with schizophrenia require assistance to develop learning skills and are in need of social and psychological support systems (Diamond 2004). Cognitive enhancement therapy is a new method that might help the individual lessen the cognitive deficits and develop learning skills.

The purpose of this paper is to explore this method and examine if it is worth pursuing for an Assertive Community Treatment Program.

Statement of the Problem

A person diagnosed with schizophrenia may experience significant cognitive deficits. To what extent would CET reduce the cognitive impairment? How can this therapy be implemented in an Assertive Community Treatment Model?

Definition of Terms

Schizophrenia: Schizophrenia is a chronic and debilitating illness. Symptoms include deficits in cognition and changes in affect and behavior which may be perceived as bizarre. It is typical for a person to experience delusions, paranoia and hallucinations. The hallucinations are generally auditory (American Psychiatric Association, 2008).

Cognitive deficits: Two primary cognitive deficits associated with schizophrenia are verbal memory impairment and executive dysfunction. Verbal memory is how the person hears a piece of information and retains it for another time. This includes a person's ability to think, concentrate, formulate ideas and remember. Executive dysfunction includes the inability to think in an abstract manner or use information that will be needed in the future (Diamond, 2004).

Assertive Community Treatment: Assertive Community Treatment is a team treatment approach designed to provide comprehensive, community-based psychiatric treatment, rehabilitation, and support to persons with serious and persistent mental illness such as schizophrenia (Assertive community treatment, 2011). The goal of ACT is to allow the person to live independently in the community without the need of hospitalization or long term institutionalized care.

Cognitive Enhancement Therapy: Cognitive Enhancement Therapy (CET) is a treatment that was formulated from a therapy designed for people who suffered from brain trauma.

Adaptations were made to this therapy that would benefit people with schizophrenia and related illnesses. It is designed to improve their ability to process faster and further develop cognitive and social skills. It is an evidenced based practice (Center for Cognition and Recovery, 2009).

Delimitations of Research

The research was conducted in and through the Karrmann Library at the University of Wisconsin-Platteville, over forty-five (45) days. Primary searches were conducted via the Internet through EBSCO host with Academic Search databases as the primary sources. Key search topics included “schizophrenia”, “cognitive enhancement therapy”, “assertive community treatment model” and “cognitive deficits.”

Chapter Two: Review of Related Literature

Cognitive Deficits Associated with Schizophrenia

Schizophrenia is associated with four different clusters of symptoms. The first set of clusters are referred to as “positive symptoms” or “reality distortion.” These symptoms include delusions and hallucinations. Delusions are beliefs that are not based in reality and usually involve a misinterpretation of how an event or thought is perceived or experienced. An auditory or visual hallucination is hearing or seeing things that do not exist (American Psychiatric Association, 2008). Such symptoms are what most people identify with schizophrenia. They may be the most tormenting but are not necessarily the most impairing of symptoms (Diamond, 2004).

The second set of clusters are referred to as “negative symptoms” or “psychomotor poverty” (Diamond, 2004p John, 2009). These symptoms are defined as negative because they are abilities that are lost due to the illness. Loss of spontaneity, persistence, and motivation are disorders associated with negative symptoms.

The third set of clusters are categorized as “cognitive dysfunctions” or “disorganization dimensions” (Diamond, 2004 & John, 2009). These include verbal memory impairments and executive dysfunctions. The inability to develop abstract ideas, organize thoughts, concentrate, and recall a verbal exchange are examples of this dysfunction.

The fourth set of clusters are mood disorders. Some people experience depressed, manic or a combination of depressed and manic episodes (Diamond, 2004).

Seventy five percent of patients diagnosed with schizophrenia suffer from cognitive impairments (O’Carroll, 2000). Close to 100% of people diagnosed with schizophrenia have

cognitive deficits after their illness manifested (Gold, 2008., Heinrichs & Zakzanis, 1998 & Wilk, et al., 2004 as cited in Medalia & Choi, 2009).

There are three primary types of cognitive deficits that can be present in a person diagnosed with schizophrenia: dysexecutive syndrome (disorganization), disinhibition or the pseudopsychopathic syndrome (rigid) and apathetic or pseudodepressive syndrome (impoverished) (John, 2009; Hogarty & Flesher 1999). A person may have one, two or all three of these deficits. The person may have one deficit that is more dominant than the others. These deficits are a result of dysfunction in the prefrontal cortex (PFC) and its relationship with the dorsolateral prefrontal cortex (DLPFC), the orbital prefrontal cortex (OPFC) and the anterior cingulate cortex (ACC) (John, 2009). The central executive for cognitive control is from the prefrontal cortex. The prefrontal cortex area affects the abilities to organize, motor plan and regulate. When the PFC is not working effectively, people are found to be inattentive and easily distracted. They may exhibit disorganized behavior and need constant redirection (John, 2009).

The deficits associated with the dysexecutive syndrome include inattention, distractibility, disorganized behavior, impaired ability to solve complex problems, difficulty retrieving stored information, impaired verbal fluency, concrete and pervasive thinking and reduced mental control (John, 2009). Also included are formal thought disorder, poverty in the content of speech, derailment, inappropriate affect and reduced ability to develop integrated cognitive schemas (Hogarty & Flesher, 1999). The disabilities associated with disorganization include disorganized planning (imprecise or chaotic), inability to stay on task, and having a hard time finding alternatives to problem-solve. There is difficulty storing memory in an organized manner. The language may be incoherent or lack self-editing. The vocational and social deficits include the inability to develop plans and goals. For instance, a person may change employment

or other structural activities without putting thought to the change. These impairments are affected by dysfunctional circuits in the dorsolateral prefrontal cortex (John, 2009).

The deficits associated with the disinhibition or pseudopsychopathic syndrome include distractibility, impulsivity, tactlessness, loss of empathy, imitating behavior, inappropriate humor, sexual preoccupation, neglect of hygiene, decreased social judgment, anti-social actions and poor insight (John, 2009). Disabilities associated with this syndrome include developing a fixed and inflexible cognitive schema. The person may have little to zero tolerance for abstract ideas (Magaro, 1981, as cited in Hogarty & Flesher, 1999). A person may exhibit a single pursuit of unsuitable goals or career objectives. For example, a person may want to pursue becoming an astronomer yet will not consider obtaining a high school diploma or GED. They may have stereotyped and mildly delusional judgment about the behavior of other people. A person may have a difficult time developing an alternative response to social problems (Hogarty & Flesher, 1999). These impairments are affected by dysfunctional circuits in the orbital prefrontal cortex (John, 2009).

The deficits associated with the apathetic or pseudodepressive syndrome include the loss of motivation, a decrease in developing goals, lack of emotional responses (emotional apathy), a flat and unchanging expression (affective apathy), lack of concern for one's health, family or future (cognitive apathy), decrease in curiosity, a lack of desire to learn new things or participate in usual activities, a decrease in productivity, difficulty sustaining in activities and a dependence on others to be engaged in structured activities (motor apathy) (John, 2009). Additional deficits include the inability to process, retrieve and express social cues, expressive language and relational schemes (Allen et al., 1993 as cited in Hogarty & Flesher, 1999). The impairments associated with impoverishment include lacking an ability to effectively speak and use gestures,

exhibiting impaired executive functions and vocal inflections, and presenting a flat or blunted affect (Hogarty & Flesher, 1999). The behaviors that occur include not having the stamina or interest to engage in social and vocational activities, the inability to initiate or plan activities, and the inability to emote thoughts and feelings. This can lead to a withdrawal from society (Hogarty & Flesher, 1999). This syndrome is affected by the dysfunction of circuits to the anterior cingulate cortex (John, 2009).

The cognitive deficits associated with schizophrenia include reduced neurocognition (also referred to as nonsocial cognition) and social cognition (Penn, Corrigan, Bentall, Racenstein & Newman, 1997). Neurocognition includes attention, verbal memory and executive function skills without the component of affect. The ability to meet functional goals is predicated upon the level of neurocognition. When there is an impairment in neurocognition, the person is likely to have weak social problem-solving skills. The person is limited in learning life skills due to the inability to be attentive. The person may not remember or process what has been taught to him or her. The level of neurocognition impacts the ability to perform functions of daily living. A person who struggles with this deficit may have problems remembering appointments, recalling where important items are placed, keeping his or her home organized and meeting building code standards, maintaining a budget, and navigating transportation options (Medelia & Choi, 2009).

Social cognition includes the linking of emotional and cognitive processing (Penn, et al. 2008). Social cognition includes the ability to perceive emotions, have empathy for self and others, make causal attributions and use social judgments when making a decision. Impairments in social cognition include misinterpreting information, inability to generalize, difficulty

responding to social stimuli and inability to complete daily functions like shopping, cooking and money management (Green, 2009).

New interventions have been developed to target the cognitive deficits associated with schizophrenia. Training in Affect Recognition, a 12-session computer-based program was developed in 2003 in Germany by Wolwer and his colleagues (Horan, Kern, Shokat-Fadai, Sergi, Wynn & Green, 2008). The program was designed to train patients hospitalized for schizophrenia to develop improved facial perception. Being able to perceive the emotions linked to a person's facial expression is a known deficit in patients diagnosed with schizophrenia. The training had patients focus on specific facial features associated with emotions and the sessions progressed to identifying more complex facial perceptions and related content. This study demonstrated that the patients who received the Training in Affect Recognition were able to demonstrate significant improvements in both the working memory and facial affect perception. The patients who participated in the control group which included neurocognitive remediation or treatment did not show significant improvements (Horan, Kern, Shokat-Fadai, Sergi, Wyn & Green, 2009).

Social Cognitive and Interaction training (SCIT) was developed by Penn and his colleagues in North Carolina. (Penn, et al., 2008) This 18-session program addressed three social cognitive processes. The sample involved in the studies were inpatients and there were no control groups involved. The outcome of this study presented a significant improvement in facial recognition. However, there was no noted improvement in attributional bias or theory of the mind . Theory of the mind is how well a person understands what other people are thinking (Horan, et al., 2009).

Schwalbe and Medalia (2007) conducted a study that included 34 outpatients at the VA Greater Los Angeles Health Care Center. The participants were all diagnosed with schizophrenia and were clinically stable. Those studied had not been treated in a psychiatric hospital in the past six months and had been on the same anti-psychotic medications for the previous three months. Participants attended 12 sessions in six weeks. Half of the participants were engaged in a social cognition group following the Neuropsychological Educational Approach to Cognitive Remediation Model (referred to as NEAR). The NEAR model was based on methods used in treatment of cognitive deficits in patients who received head injuries. The NEAR approach incorporates motivation techniques designed to make the therapy more intrinsically appealing to patients who have motivation deficits. The members of the group are treated for psychotic and affective disorders. They are able to establish a bond and connect with one another. The classes are in shorter 45-60 minute sessions for two to three days a week. The shorter sessions adapt to the individual's need for a shorter time to concentrate. The context is more real to life which is applicable to those who are unable to process in abstractions. (Schwalbe & Medalia, 2007). For example, the training presents examples of real life situations such as driving to the grocery store versus using abstract flashing colored circles.

The control group were engaged in a relapse prevention and illness management group. The social cognition group was structured to build the content from basic to more complex materials. The training was designed to address emotional and social perception, social attribution and theory of the mind. This study showed that social cognitive skills training was effective in an outpatient setting for those diagnosed with schizophrenia. The participants who received social cognitive skill training showed significant improvement in facial affect perception, but the control group did not present this improvement. The other aspects of social

cognitive development did not present significant change. The researchers question if the brevity of the study was a factor. At the time of publication, they were evaluating a longer 24 session version of the social cognitive skills training program (Horan, et al., 2009).

Social cognition skills studied in the Cognitive Enhancement Therapy include mentalism and process orientation. Mentalism includes the ability to create schemas: to formulate ideas, develop attitudes towards groups, have ideas about the external environment and how a person has formulated an idea about him or herself. A person with schizophrenia may have difficulty making judgments based on having underdeveloped ideas or using delusional thoughts to make sense of a situation. The person may have a tendency to focus on details, but not be able to differentiate which details are important and which are inconsequential (Nelson, 1998). They may have difficulty thinking of other viable alternatives. This reduces the ability to construct an abstract understanding of a situation (Penn, et al., 2008).

Process orientation determines the ability to process information in a timely manner. A person with schizophrenia may be delayed or void of response when engaged in a social interaction. The person may present a flat affect and a slow reaction time to questions, requests or other types of stimuli (Nelson, 1998). A person having an interaction with someone with schizophrenia might assume that the afflicted person is disinterested or resistant (Penn et al., 2008).

The cognitive and social impairments associated with schizophrenia make it very difficult for the individual to complete skills necessary for independent living. However, social policy has changed, such that independent living skills are essential. For a number of years, people with schizophrenia were institutionalized in psychiatric hospitals. The increasing rate of mental health related hospitalizations in the 1940's and 1950's created a growing concern at the federal level

about the economic burden of psychiatric hospitalizations (Mechanic & Rochefort, 1990). As antipsychotic medications became more available and the need for physical constraints were reduced, there was a push to move patients into the community. Civil rights activists in the late 1960's promoted deinstitutionalization and influenced policies which made it more difficult for the courts to assign mental health commitments and the patients had more rights to be able to leave the hospitals. In February of 1963, President Kennedy adopted The Community Mental Health Centers Act to provide assistance for states to deinstitutionalize psychiatric patients from the hospitals to the community. From 1963 to 1975 there was a 62% decrease in inpatient state and county mental health hospitalizations. However there was a lack of coordination and availability for follow-up services for the discharged patients. These under-served patients returned to the hospitals, lived in nursing homes or large scale boarding homes, or became homeless (Mechanic & Rochefort, 1990). A new way of treating people diagnosed with schizophrenia was needed.

Assertive Community Treatment Program Model

The conception of the Program of Assertive Community Treatment started in April, 1970 in a planning meeting at a research ward at Mendota State Hospital in Madison, Wisconsin. The research ward was seeking an effective way of treating people with chronic schizophrenia who were struggling with leaving the hospital and remaining in the community. At the time there was a noted problem that most of the patients who were discharged and linked to aftercare programs returned within weeks or months in psychotic and disorganized states (Test, 1998). This was at a time when there was a federal push to release patients from psychiatric institutions with little assistance or organization in the communities to aid in the transition for the patients.

The Program of Assertive Community Treatment team observed the methods of a psychiatric hospital social worker, Barb Lontz, who had a reputation for successful discharges. She went beyond the standard protocol of discharge. She personally drove the patients to their new community residences and would spend time giving them support and assistance. She would provide case management: setting up phone and utility services, setting up housing, and providing coaching for adult daily living and transportation skills. She job-coached at sheltered workshops. Barb would call the patients to provide support and was willing to be a crisis contact. None of Barb's clients returned to the hospital after discharge. The PACT team recognized a need for a paradigm shift in treatment for patients with severe and chronic illness that had periods of instability. The shift went from focusing the primary place of treatment from the hospital to the community (Test, 1998).

In 1972, staff members of the research hospital ward moved their work out of the hospital and into an office in downtown Madison, Wisconsin. A five-month research study was developed and led by Dr. Arnold Marx, Dr. Leonard Stein and Dr. Mary Ann Test (Test, 1998). The research team developed a program that provided treatment in the community. The purpose of the study was to discover if the community treatment would increase outpatient mental health stability, reduce client hospitalizations, and foster meaningful and enriching lifestyles in the community. The function of treatment included providing individual support, assistance with obtaining services and the delivery of medications. The goal of treatment is to reduce stress, improve quality of life and prevent relapse (Test, 1998). The results of the study included a massive reduction of returned hospitalizations. The few participants who were readmitted, they had a faster return time back into the community than was previously the case.

The pilot study suggested that psychiatric symptomatology and self-esteem were unaffected. However with receiving assistance in a community setting, the revolving door of admission and discharge were reduced when the study group was able to receive personalized, consistent and intensive support. The program was initially titled the Training in Community Living Project and later became known as the Program of Assertive Community Treatment. This grassroots program developed and grew into a national model of effective community care to treat individuals suffering from chronic and severe schizophrenia. In 1974, the program won the National Institute for Mental Health Gold Achievement Award. The team published a series of papers that presented the effectiveness and benefits of their mode which became known as the Assertive Community Treatment model. A number of programs across the nation were developed following this model (Test, 1998).

In the late 1980's Medicaid and other public supported insurance programs began funding programs that follow the Assertive Community Treatment Model. Assertive Community Treatment has been recognized as an evidence-based practice by the United States' Federal Substance Abuse and Mental Health Service Administration, the National Alliance on Mental Illness and the Commission on Accreditation of Rehabilitation Facilities (Assertive Community Treatment Association, 2011). The Assertive Community Treatment Association, Inc. (ACTA) was developed in 1997. It is a non-profit organization that is governed by a board of directors. This organization was initially developed to promote the annual Assertive Community Treatment Conference which was instituted in 1984. This conference brings together professionals, consumers and families of consumers with mental illnesses for education and training purposes. The Assertive Community Treatment Association consists of treatment providers in mental health, consumers who have a mental illness, people who have a family member suffering from a

mental illness, government agencies and mental health advocacy groups. The Assertive Community Treatment Association advocates for people with mental illness to be given access to services they need to have a satisfying quality of life and to meet their goals. The services provided should be presented in a holistic manner and staffed by a multi-disciplinary team who values and respects the diversity of their communities (Assertive Community Treatment Association , 2011). The mission of ACTA is to “promote, develop and support high quality assertive community treatment services that help improve the lives of people diagnosed with serious and persistent mental illness” (Assertive Community Treatment Association homepage 2011, p. 2).

Currently the ACT model is an evidence-based practice that provides treatment for people with serious mental illness or personality disorders, present severe impairments in functioning in the community and who have not responded well to traditional outpatient mental health services or have experienced problems with homelessness, severe substance abuse or have been involved in the judicial system. People who are diagnosed with schizophrenia may qualify for the program (Gold, Meisler, Santos, Keleher, Becker, Knoedler, Carnemolla, Williams, Toscvano & Stormer, 2003).

The style of treatment is a team approach (Assertive Community Treatment Association, 2011). Ideally there are 10-12 members in a team and one staff member for every 10 clients. The team includes the client, professionals with backgrounds in social work, vocational rehabilitation, counseling, nursing and psychiatry, and peer specialists. The services are available 24 hours, 7 days a week and provide support to enable the member to live successfully in the community. The services are long-term due to the severe deficits associated with the illness. It is understood that the process of recovery may take a number of years. The services are

individualized and include case management, assessments, psychiatric care, assistance with employment and housing, support for the family, psycho-education, substance abuse counseling, and other services. The team works with the consumers in the community setting. Staff roles are interchangeable. The staff members share caseloads to ensure that services provided for the individual are not impaired due to staff absence. The treatment plans are strength-based and developed with the client. Their plan is based on their strengths, desires and personal goals. The term assertive implies that the team members are proactive. The participants are encouraged to develop and meet their goals, become gainfully employed, participate and live independently in the community. Team members work with the participants and their families and other support systems to collaborate in their treatment. The clients are educated about their illness and are taught skills to manage their illness and the stresses that occur in daily living. The participant's team members provide coordination of health care and education about the participant's health care (Assertive Community Treatment Association, 2011). Clients participate in psychoeducation which may include dialectical behavior therapy, life enhancing skills, community involvement skills and interpersonal relationship skills. The Assertive Community Model supports incorporating new skills that will enhance the individual client's progress toward his or her personal goals. It is possible the Cognitive Enhancement Therapy may be an additional skill set to be incorporated into an Assertive Community Treatment Program.

Cognitive Enhancement Therapy Model

Cognitive Enhancement Therapy is a psychosocial rehabilitation program for adult schizophrenia outpatients. It is a type of cognitive remediation therapy. Cognitive Remediation (CR) is an evidence-based treatment that treats the neurocognitive deficits that occur in schizophrenia. (Medalia & Choi, 2009) There is no pharmacology involved in the treatment.

Participants are advised to continue following psychotropic treatment as prescribed by their doctors. Cognitive Remediation includes drills and interventions that are designed to improve cognitive functioning; attentiveness, memorization, learning and planning.

Combining CR with psychiatric rehabilitation is more effective than separate approaches (Bell et al., 2007; Grieg et al., 2007; Spaulding et al., 1999 & Wexler & Bell et al, 2005 as cited in Medalia & Choi, 2009). McGurk (as cited in Green, 2009) conducted a meta-analysis and concluded that there was a significantly better learning process outcome when combining cognitive remediation with psychosocial rehabilitation. For example when work therapy and CR are combined the participants have better vocational readiness, sustaining longer term employment, earning higher wages and being able to work longer hours than clients in programs that offers work therapy or CR separately (Medalia & Choi, 2009). There are programs that fuse together cognitive gains with functional abilities. Cognitive enhancement therapy is one of those programs (Medalia & Choi, 2009).

Cognitive Enhancement Therapy (CET) was designed by Gerard Hogarty, Sam Flesher, Mary Carter, and Deborah Greenwald at the University of Pittsburgh Medical Center, Western Psychiatric Institute and Clinic (Center for Cognition and Recovery Homepage, 2009). They recognized that there was a limitation in the treatment of schizophrenia in their practices. Their standard treatment for schizophrenia included a combination of medication, psychological counseling, social-skills training, illness management, family education and psychoeducation. These treatments were essential but they did not address the neurocognitive and cognitive deficits that are essential for social and functioning skill recovery (Center for Cognition and Recovery, 2009).

Cognitive Enhancement Therapy addresses the nonsocial cognitive impairments: attention, memory and problem solving. These deficits have an impact on clients primary social skills (Hogarty & Flesher, 1999). The exercises develop the patient's confidence in and mastery of their new skills so that when they work in a group setting they have the tools to be effective when engaging with the group's tasks. Prior to group training, the computer programs help them become more aware of their cognitive styles and develop an ability to improve cognitive flexibility and organization (Hogarty & Flesher, 1999).

The creators of CET examined the underlying causes that inhibit recovery. The theory of CET is built from a multitude of disciplines, research and practice: cognitive psychology, developmental psychology, neurophysiology, neuropsychology, psychiatry, psychology of disability, social psychology, social work, sociology and vocational rehabilitation (Center for Cognition and Recovery, 2009). Cognitive Enhancement Therapy is designed to improve the processing speed, nonsocial cognition (memory, attention and problem solving) and social cognition (ability to interact with others) of adults diagnosed with schizophrenia and related illness.

Cognitive Enhancement Therapy can enable the patients to mature their cognitive skills. It is common for those who are afflicted with schizophrenia in their young adult life to have their cognitive development limited. Their brain functioning may have stayed in the adolescent stage. An adolescent is apt to think with concrete and verbatim memory. Their thinking may be idiosyncratic. An adult's cognition typically develops to become more coherent and abstract. Cognitive Enhancement Therapy defines this as developing "gistfulness. "Gistfulness" is a social exchange that is appropriate to the healthy adult, in contrast to a reliance on the details of "verbatim memory or concrete thinking that is associated with earlier developmental periods"

(Brainerd & Reyna, 1990 as cited in Hogarty & Flesher, 1999). The advantages of developing gist memories include memories that are more accessible, applicable to problem solving, and require faster processing as the memories are less effortful, less complicated and take less time to retrieve. Gist memories store more easily than verbatim memories. (Brainerd & Reyna, 2001). Cognitive Enhancement Therapy provides exercises and support that help develop participants' cognition along with the gistfulness of the adult developmental stage. After clients have acquired the nonsocial cognitive skills they work on their social cognitive skills.

The members learn social perception skills to improve understanding of other people's perspectives, to be more sensitive to interpersonal interactions, to be able to give an account of their position toward a specific person or group and develop awareness of how their position would be understood and responded to by other people (Hogarty & Flesher, 1999). They learn these social skills by developing an ability to talk about past events, to recall the details of both parties expressed in a current conversation, to give an account of their experiences in a clear and organized fashion and respond to potential scenarios that may be identified as ambiguous instead of a demand or threat to act upon (Hogarty & Flesher, 1999).

Cognitive Enhancement Therapy is conducted in two weekly 60-90 minute sessions. In addition to the sessions, the therapy includes maintenance antipsychotic treatment, principles of supportive psychotherapy, and provisions of services related to obtaining medical care, entitlements, food, shelter and clothing (Hogarty & Flesher 1999).

Psychotropic medications are an essential part of the success of treatment. The positive symptoms which may exacerbate when not on medication include delusions, paranoia and hallucinations. These symptoms may interfere with the client's ability to concentrate due to the internal distractions he or she is experiencing. There are mixed findings as to how effectively the

psychotropic medications improve cognitive functioning. More evidence needs to be found to show that the newer anti-psychotic medications significantly improve the addressed cognitive impairments (O'Carroll, 2000).

Participants are assessed by undergoing formal neuropsychological tests, computer exercises and a structured (videotaped) interview. The purpose of the assessment is to determine micro and macro impairments, disabilities and handicaps. Each patient has a primary clinician. The relationship between the client and the CR therapist is essential to the outcome. The therapist should be aware and in tune of the individual's need and respect the pace of the client's progress (Medalia & Choi, 2009). The treatment team participates in the cognitive evaluation and the development of the treatment and coaching plan (Hogarty & Flesher, 1999). The participant is involved in his or her own treatment plan after the outcome of their assessment of strengths and weaknesses is discussed. The plan is written on a poster board and displayed during all CET exercises so that the participant is continuously aware of his or her goals and strategies. After a year of nonsocial and social cognitive exercises, the participants reevaluate the addressed cognitive problems, goals and strategies (Hogarty & Flesher, 1999). The exercise materials are presented on computer software. The client will work one to one with the therapist or coach in the initial stage of therapy.

A glossary is handed out that provides cognitive language which includes terms that are metaphorical. For example, the word "flooding," for feeling cognitively overwhelmed, would be in the glossary. Many people with schizophrenia are unaware of their cognitive disabilities. Cognitive Enhancement Therapy's focus is more on their problems than their symptoms of schizophrenia. This helps the person become aware of their cognitive disabilities. Adjusting to

their disability and finding ways to compensate are common themes throughout the nonsocial cognitive exercises (Hogarty & Flesher, 1999).

The participant will spend about 2.5 hours a week for six months performing nonsocial cognitive exercises. The remaining half hour of CET includes supportive therapy, medication and case management (Hogarty & Flesher, 1999). It takes time for many people with schizophrenia to trust individuals and systems. It may be overwhelming when groups are too large and this may cause increased distraction (Nelson, 1988). The CET program allows the individual to slowly build from one-to-one interaction with the coach, to pairs and eventually to groups. This is an effective teaching method for adults with schizophrenia. This type of “bottom-up” therapy starts the work with basic attention, reaction time and memory exercises and works its way up to more complex executive exercises which include developing abstract reasoning, sequencing and problem solving (Medalia & Choi, 2009).

After being oriented to the nonsocial cognitive software and developing improved attention, memory and problem solving skills the person is ready to develop their social cognitive skills with other members. The participants initially work in pairs. If a person is having problems with accepting his or her cognitive impairments, is residually paranoid or is overwhelmed by having to work with another participant, her or she is allowed to observe other pairs performing software exercises together before participation (Hogarty & Flesher, 1999). The pair collaborates on the exercises and helps the partner maintain records of performance. Ideally single pairs work together for three months and then are combined with 3-4 pairs. They will work together on software exercises for three months and are allowed time to socialize. They become a formal group that will participate in the social cognition training curriculum.

Social cognition is further developed by participation in structured groups. The groups begin with small-group exercises that foster perspective-taking and social context appraisal using the cognitive abilities developed during the nonsocial cognitive tasks. Over time the tasks become more difficult and cueing and coaching are provided. The sessions are 90 minutes per week over a 56 week period. Over time the cues from the coaches are tapered. A person's performance from a videotaped session is reviewed with a coach. The participants are challenged in the group to share their personal cognitive problems, goals and strategies. The participants are encouraged to think on their feet in response to interpersonal and non-rehearsed exercises (Hogarty & Flesher, 1999).

When participants are observing, they are expected to take notes and give feedback on the performance of their group members. They are asked to analyze their intellectual, emotional and collaborative abilities. The coaches offer feedback, modeling, and encouragement. Each session includes a 15 minute education component. A discussion of the symptoms and vulnerabilities of schizophrenia, effective and ineffective cognition are discussed. Homework is assigned and reviewed the next week based on the discussion. The homework applies to their real life experiences (Hogarty & Flesher, 1999).

Two coaches are involved in each CET group. Outside of the group the coaches provide individualized coaching in non-group sessions. The coaches assist the participants with the computer software exercises, group exercises and one-to-one interactions. The coaches identify to the individual any speech or action that may be incoherent, disorganized or inappropriate and assist the individual to become more aware of these actions. The coaches provide positive emotional support and encourage humor during the group activities (Hogarty & Flesher, 1999).

The requirements to become a coach include being a licensed social worker, mental health therapist or vocational counselor. They must be able to lead activities designed to help the participants improve their cognitive skills. The coaches must understand that they do not help the participant by giving them answers to challenges, but by assisting them in the cognitive development process. The coaches are trained by the Center of Cognition and Recovery, LLC. A training manual is available that includes three sections. The first section prepares the coach for CET. It describes the role of the coach, the assessment procedure and the coaching process. It also includes a list of needed materials, guidelines for forming a group and determining the population appropriate for the program. The second section is the curriculum guide for the social cognitive groups. Each of the 45 CET group sessions is described. There is a CD-ROM provided that includes the handout. The third section describes the computer training in attention, memory and problem solving. The software that the participants use is sold separate from the training manual. Each training manual costs \$50.00.

There are four primary outcomes that are expected from CET therapy. The first is to achieve cognitive milestones. The second outcome is to develop an appropriate behavioral response in a social interaction that includes the awareness of the patient's response and how their response may have an impact on another person. The third expected outcome is to learn about their illness from psychoeducation lessons. They are to become educated about their illness and their cognitive deficits associated with their illness. The fourth expected outcome is for the members to develop alternatives to the behavior associated with their cognitive deficits (Hogarty & Flesher, 1999).

The first outcome is to achieve six cognitive milestones. These milestones include: developing an ability to have social interactions in a "gistful" manner, to become more active in

the processing of information, to develop cognitive flexibility, to accept the unpredictable or the unknown, to be comfortable with abstract ideas, and to have experiences that have meaning, are individualized and are self-directed (Hogarty & Flesher, 1999).

The second outcome is to learn to respond to spontaneous social interactions and develop the awareness of how one's responses affect others (Hogarty & Flesher, 1999). This requires the ability to understand alternative perspectives in social interactions. Participants learn to become aware of their own thoughts while engaged in the interaction. The unrehearsed exercises may be disturbing and uncomfortable for the participant but are similar to everyday experiences that a chronically mentally ill person often avoids. These exercises add a contextual meaning which has been shown to improve the intrinsic motivation to learn (Medalia & Choi, 2009). When participants can successfully negotiate these experiences they develop social cognitive growth and are more apt to increase risk-taking. The learning environment includes cueing, coaching, support and environmental control (Hogarty & Flesher, 1999).

The third outcome is obtaining psychoeducation. An educational program relevant to the understanding of schizophrenia is provided. They are given the opportunity to inquire and respond to information regarding their social and nonsocial cognitive deficits (Hogarty & Flesher, 1999). The patients are involved in their treatment plan. They assess their own cognitive barriers and strengths. They create personal goals, and develop strategies to meet their objectives. Self-determination is fostered once they learn the skills needed to select and create their own treatment plan (Medalia & Choi, 2009).

The fourth outcome is to learn through experience and hands-on interaction versus being expected to learn by formal instruction with the teacher posturing as knowing more than the

learner. Members will be encouraged to take notes and organize information. They learn to be the presenter and listener of information by making presentations (Hogarty & Flesher, 1999).

When the program is completed the members celebrate with a formal graduation. The participants, coaches, family and supportive friends are invited. The purpose of the graduation is to give recognition to the members for their achievements and hard work. The members give a speech about their accomplishments. This gives the members an opportunity to demonstrate their learned skills (Hogarty & Flesher, 1999).

Correlations of Cognitive Deficits Associated with Schizophrenia and Cognitive Enhancement Therapy

Cognitive Enhancement Therapy addresses the nonsocial and social cognitive deficits associated with schizophrenia in a slow, non-threatening and holistic manner. In the initial study of CET it was considered that the patient's cognitive styles and impairments (disorganized, rigid or impoverished) were individual and dimensional. Of the first 59 patients admitted to the CET program, 42% met criteria in a single style, 44% had two style patterns and 14% had all three. Forty six percent had a prominent disorganized style, 39% an impoverished style and 15% a rigid style. Every patient was exposed to all of the software and group exercises. Additional time was spent on exercises that address limitations based on cognitive impairment styles (Hogarty & Flesher, 1999).

The client may have difficulty differentiating content and not recognize errors or correct responses. It is recommended that by starting at a very easy level and gradually progressing to more complex and challenging tasks is effective with people with schizophrenia who experience cognitive deficits (O'Carroll, 2000). This errorless approach is a learning method where the learner is prevented from making mistakes during learning. This approach has shown to be

beneficial to learners who suffer from significant memory impairment (O'Carroll, 2000).

Cognitive Enhancement Therapy is modeled to challenge the client at his or her pace using the errorless approach.

The first nonsocial cognitive impairment that Cognitive Enhancement Therapy addresses is the inability to maintain attention. "Cognitive Enhancement Therapy software is used to enhance vigilance, inhibit irrelevant stimuli, and shift attention between auditory and visual modalities and foster rapid decision-making" (Hogarty & Flesher, 1999, p.699). Exercises include three of Ben-Vishay's programs from the Orientation Remediation Module. The first exercise is called the Attention Reaction Conditioner. It helps the client become aware of auditory cues to facilitate reaction time in a temporal mode. The second exercise is called the Zero Accuracy Conditioner. This exercise teaches spatial focusing with visual cues. The third exercise is called Time Estimates. The client learns to use temporary vigilance with auditory and visual cues. With these exercises the individual develops an ability to ignore external distractions and internal stimuli. This improves their ability to focus on task and not allow their mind to wander (Hogarty & Flesher, 1999). Once the clients have mastered these exercises they may continue on to more challenging programs which include tests that develop multiple and complex attention tasks, making quick shifts in attentional focus and quick decision-making (Hogarty & Flesher 1999).

Processing speed is the reaction time measurement of speed of processing and attention. In a study of 121 participants with schizophrenia who were assigned Cognitive Enhancement Therapy or Enriched Supportive Therapy for a two year period the participants who received CET were shown to have significant improvement in processing speed measurements (Hogarty, Greenwald & Eack, 2006). However in another study that included 58 participants with early-

course schizophrenia and received the same treatments they did not show any significant improvement in processing speed (Eack, Greenwald, Hogarty, Cooley, DiBarry, Montrose & Keshavean, 2009) The initial processing speed of people in the early-course of schizophrenia prior to CET is generally less impaired than it is for people who have been had the diagnoses for a longer time. It is suggested that more complex social-cognitive skills are to be considered for people with less impairment (Eack, et al., 2009).

The second nonsocial cognitive deficit that is addressed is poor memory. Many schizophrenic patients have memory loss or an inability to recall events or information (Hogarty and Flesher 1999). Neuroimaging studies have shown that memory training exercises in cognitive remediation therapy can increase activation in the frontocortical areas and the left inferior frontal cortex. This area is the task-activation area of the brain that affects formal thought, memory, content of speech, attention, affect and the ability to develop integrated cognitive schemas (Medalia & Choi, 2009). Cognitive Enhancement Therapy exercises improve the ability to separate and understanding schemes, enhance cognitive flexibility, improve comprehension and abstractions, and increase the patient's executive functioning (Hogarty and Flesher, 1999). Software used includes sequential, delayed, spatial, visual, auditory and verbal memory from the Bracy Memory I and II programs and various Soft Tools exercises (Hogarty & Flesher 1999). Categorizing is one form of exercises. The participants are challenged to think in a more abstract manner as there is room for risk taking which promotes a feeling of mastery. Coaches are encouraged to gently challenge and allow the participants to develop the answers.

Neurocognition composites measure memory, problem solving and executive functions. In the three year study involving 121 participants with schizophrenia the neurocognition scores improved with the people receiving Cognitive Enhancement Therapy. The most significant

improvement occurred after the first 12 months (Hogarty, Greenwald & Eack, 2006). In the two-year study involving 58 participants with schizophrenia, the participants who received CET showed substantial gains in neurocognition measurements (Eack, et al., 2009).

The third nonsocial cognitive deficit addressed is the inability to problem-solve. The software assists in developing analytical logic, planning ahead, and intuitive gistful and abstract cognitive skills (Hogarty & Flesher, 1999). The software is developed from Soft Tools 88 and 89 and the Visuospatial II programs of Bracy's neurocognitive software. The exercises include Checker Exchange, Logicmaster, Designer Patterns, Number Manipulations 1 and 11, and Deductions and Knights Challenge. In these exercises perseverance, stamina and concentration are developed (Hogarty & Flesher, 1999).

In the three year study which included 121 participants with schizophrenia there were not significant improvements in problem solving after receiving CET (Hogarty et al, 2006). In the two year study which included 58 participants, those who received CET presented significant improvements in cognitive flexibility and social adjustments.

The first social cognitive deficit that CET targets is disorganization. The skills taught help the patients to be more attentive to ideas and the exchange of ideas and to be able to recall these exchanges in an organized fashion. This skill enables the patient to develop organized planning. The patients will be able to focus on the central point of an idea and communicate more effectively (Hogarty & Flesher, 1999).

The second social cognitive deficit that CET targets is rigidity. The goal is to improve cognitive flexibility by enhancing the patient's ability to create more than one solution to a problem. Clients are able to look at their own and another person's behavior and consider more than one perspective about the behavior or event. The patient is able to engage more effectively

in different social contexts and process their experiences with fewer disturbances (Hogarty & Flesher, 1999).

The third social cognitive deficit that CET targets is impoverishment of thought. Cognitive Enhancement Therapy will train the patient to be able to further develop their ideas. He or she will improve their ability to react more spontaneously in cognitive, affective and behavioral reactions. The client will not rely on verbatim memory and will engage in more active and abstract processing (Hogarty & Flesher 1999).

In the two year study of 58 participants, those who received CET were found to demonstrate remarkable social cognitive improvements (Eack, et al., 2009). In the research study of 121 participants with schizophrenia the results demonstrated that the improvements in processing speed and neurocognition mediated the effect that CET had on the social cognition skills (Hogarty, Greenwald & Eack, 2006).

Eack, Hogarty, Cho, Prasad, Greenwald, Hogarty, and Keshavan, (2010) administered cognitive enhancement therapy or enriched supportive therapy to 53 patients with schizophrenia. Patients who received CET had increased volume of brain matter in the left hippocampus, left amygdala and left fusiform gyrus in the brain, also. This area handles social cognition. There were small increases in the volume of the right, left and frontal lobes. The control group continued to experience brain shrinkage, but the CET group developed brain matter growth.

Cognitive Enhancement Therapy can improve neurocognitive and social cognitive deficits when implemented in early stages of the illness of schizophrenia. It is unknown how long the effects of CET persist. In a study of 58 patients who were in the early course of treatment of schizophrenia or schizoaffective disorder and completed two years of CET or an Enriched Supportive Therapy (EST), a 72% retention rate was observed one year after treatment.

Forty of the 58 participants were male, 40 of the participants were Caucasian. Of the 58 patients their average age was 25.92 years and the average time-span of treating their illness was 3.19 years. At the beginning of the study 43 of the participants were not employed. Thirty nine of the participants had received some college education. The individuals who received CET demonstrated significant functional benefits compared to those who were treated with EST. These benefits included vocational ability, improved sociability and role adjustment (Eack, Greenwald, Hogarty & Keshavan, 2010).

Cognitive Enhancement Therapy is in the early stages of research and development. There is a need for additional studies investigating the durability of the effects of the therapy. As this therapy advances there may be changes made, to improve outcomes. Cognitive Enhancement Therapy is not a widely used form of therapy. It is recognized in 16 sites in eight states. According to the CET homepage, over 120 groups have been completed and 18 groups are being run. Researchers report a high attendance rate of 85 to 90% and a completion rate of 85% (Center for Recovery Homepage, 2012).

Chapter Three: Conclusions and Recommendations

The Cognitive Enhancement Therapy Model can be implemented in an Assertive Community Treatment center to improve the cognitive deficits associated with the negative symptoms of schizophrenia. There are commonalities in their holistic philosophies and methods. Both utilize interdisciplinary teams. The treatment team can be involved in all aspects of CET. Both models share strength-based and person-centered planning. The model is designed to move at the client's individual pace and cognitive skill level. The treatment planning is similar for both approaches. They both focus on identifying strengths and barriers and developing objectives to overcome the barriers to meet the person's goals. The client develops his or her own treatment plan. Both models put the patient at the helm of their treatment. The computerized programs of CET provide personal and flexible exercises based on the client's needs. This provides greater communication between the coach and the client (Medalia & Choi, 2009).

The model has participants in relatively short group meetings repeated over 56 weeks. This model is ideal for the clients treated in an ACT program. It gives the clients time to slowly build their skills. Most clients in ACT programs are expected to receive long-term treatment. The weekly 90-minute sessions are designed such that people with schizophrenia can tolerate them. These factors improve the client's confidence in mastery of the program, retention of the skills learned and motivation to attend the sessions.

Incorporating CET into the ACT model should benefit the members in the program to enhance their quality of life. With the skills learned they would be able to manage their daily living activities more effectively, have improved social relationships and sustain meaningful employment. They would be given the opportunity to participate effectively in the community and feel the sense of self-worth that they deserve.

There are limitations to the CET model that make it challenging to implement. The CET model is geared to people in the early stages of schizophrenia and other mental disorders. Its utility with clients in the later stages of their illness may be less. The creators do not recommend using this treatment when someone is actively using substances or is mentally unstable. More symptomatic individuals might not comprehend or easily engage in cognitive exercises (Nuechterlein & Dawson, 1984, as cited in Hogarty & Flescher 1999). This is a concern because ACT programs do treat patients who are actively using substances or are unstable due to refusal of medications or taking medications that are not effective at ensuring stability. The model would have to be adapted for people who could benefit from the therapy but may need to suspend participation until they are better able to manage their symptoms.

Cost and time are the primary limitations. Most ACT programs do not meet the ideal of 10 patients per caseload. During these economic times, most communities are unable or unwilling to afford the cost of maintaining programs with a lower caseload to case manager ratio. The manual and software are inexpensive but the cost of acquiring computers may be outside of a program's budget.

Though it appears highly likely that participants' quality of life will improve along with improvement in cognitive skills, documentation is lacking regarding the potential cost-saving effects of CET. If the program improves cognitive abilities and the members become capable of obtaining competitive employment, there is the potential that they will not have to continue to rely entirely on entitlements. There is a possibility that this could reduce health care costs, due to decreased need for hospitalization. Cognitive enhancement therapy needs to be implemented in more programs before these potential benefits can be measured.

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