

## **Chapter 2**

# **CTNA Conceptual Foundations: A Brief History of Psychological and Neuropsychological Assessment Feedback**

In this chapter we will discuss the models that comprise the conceptual foundation of CTNA. CTNA's framework lies in the traditions of Therapeutic Assessment (TA) Models whose principles espouse a person-centered philosophy that views tests and test results as tools for understanding a patient's life and working to rewrite their life stories in a way that facilitates healing and growth. The methods for accomplishing this goal are based on recommendations for providing neuropsychological test feedback and the Motivational Interviewing principles for providing objective feedback in a person-centered manner. Motivational Interviewing principles will be discussed in Chapter 5.

### **Background of Neuropsychological Test Feedback**

The literature is limited on the use of neuropsychological tests as therapeutic interventions or the development of a feedback process. What follows is a description of different authors' recommendations for providing feedback from the results of neuropsychological tests. This section will begin with a description of Aleksandr Romanovich Luria's Neuropsychological Investigation as a qualitative method for conducting neuropsychological examinations. This will be followed by recommendations in the literature for providing objective feedback from the results of neuropsychological tests.

#### ***Luria's Neuropsychological Investigation***

Luria's Neuropsychological Investigation (LNI) is not a formal feedback method, but its components are highly consistent with a phenomenological analysis of patients' neuropsychological test results. LNI was a method developed by the Russian neuropsychologist Aleksandr Romanovich Luria for understanding syndromes of behavioral disturbance due to circumscribed brain lesions. A full review of the procedures is beyond the scope of this book, and the reader is referred to the comprehensive description provided by Anne Lise Christensen

(1975/1984) or Luria's book (Luria, 1966). This section will be limited to a description of the qualitative methods used by Luria during a neuropsychological investigation.

Luria's method is a qualitative approach to examining patient functioning that requires variability and flexibility on the part of the investigator. Luria's examination method began with a preliminary conversation with the patient. This was considered essential in order to establish a positive, therapeutic atmosphere that elicited the patient's cooperation and emphasized a trusting, collaborative, problems-solving, and working relationship between the examiner and the patient. Luria would provide a series of brief standardized tests in order to develop hypotheses about the patient's functioning and would then conduct a more individualized neuropsychological assessment based on mental process defects discovered in the initial examination. A key feature of this examination was that it was flexible and interactive. Finally, the examination ended with a psychological conclusion that was shared with the patient (Christensen, 1975; Christensen & Caetano, 1999a). Luria discouraged the use of highly static and standardized methods of investigation. The current Luria Nebraska Neuropsychological Examination was developed by Charles Golden and colleagues and reflects more of a Western, quantitative approach to neuropsychological assessment that was rejected by Christensen and colleagues (Christensen, 1975; Christensen & Caetano, 1999a, 1999b).

Luria's methods were highly compatible with principles of Neuropsychological Rehabilitation. The qualitative and flexible nature of the method made it ideal for use as a psychotherapeutic approach (Christensen & Caetano, 1999a). Although not a formal feedback procedure, LNI used feedback to patients to enhance awareness about functional strengths and weaknesses and to ascertain patient responses to formulate diagnoses and treatment planning. Luria was influenced by Freud and the German humanistic philosophies. He wished to use scientific methods to understand individuals in context. Luria's interpretations of cognitive functioning would consider an individual's contextual framework for understanding a response to an inquiry. In order to elucidate these processes, Luria would take a hypothesis-testing approach, and the patient was initiated as an active collaborator in the hypothesis-testing process. As explained by Christensen and Caetano, "... the approach is phenomenological and interactive. There is a trusting therapeutic relationship between patient and Neuropsychologist ... an ongoing process of task modification, for example, giving the patient more time or explanations to complete a task, allowing the patient to copy tasks, or asking the patient to give his or her perception of the task ... so as constantly to provide feedback about the unique characteristics of the patient's strengths and deficits ... Luria would comment, asking questions and discussing issues in a highly involved manner such that the patient was included ... supported ... and given a sense of importance." (Christensen & Caetano, 1996).

Luria's method, although not a formal feedback procedure, contained elements identified by previous authors as important for providing information from the results of psychological tests. These include an emphasis on

a collaborative therapeutic relationship; an open and flexible dialogue with the patient, which includes eliciting and sharing information from the results of the examination; a qualitative analysis that considers patient's individual contexts as influencing their performance; and a general patient-centered atmosphere where the patient is empowered as an active participant whose perceptions and opinions are valued and are, in fact, considered essential information in the final psychological conclusion. The next section will review the literature that has developed a conceptual framework for providing feedback from neuropsychological tests.

### ***Recommendations for Giving Neuropsychological Test Feedback***

Feedback from neuropsychological assessments has been thought of as optional and given limited consideration in the literature despite ethical obligations to fully inform patients about the nature and results of psychological tests and evidence to suggest that patients find such feedback useful, meaningful, and therapeutic (Gass & Brown, 1992; Pope, 1992; Armengol, Kaplan, & Moes, 2001). Feedback is important because it provides useful information about cognitive strengths and weaknesses and helps in the development of applicable interventions to enhance functional performance (Crosson, 2000). There is evidence that consumers find neuropsychological test feedback useful in identifying strengths and weaknesses and they apply it to everyday life concerns, which may be helpful in resolving life problems (Bennett-Levy, Klein-Boonschate, Batchelor, McCarter, & Walton, 1994). There is no agreed-upon conceptual framework for providing feedback from neuropsychological tests, although there are recommendations. Gass and Brown suggest that neuropsychological test feedback is an important intervention in and of itself with brain-injured patients, and they recommend a methodology for providing feedback from neuropsychological test data that is understandable, useful, and relevant (Gass & Brown, 1992). The methodology is summarized as follows: (1) review the purpose of testing in plain, simple language; (2) describe the tests as "behavior samples" that reflect domains of daily functioning; (3) explain test results in terms of domains of functioning and behavior; (4) summarize results in terms of strengths and weaknesses; (5) address any pertinent diagnostic issues; and (6) make appropriate recommendations (Gass & Brown, 1992, pp. 274–276).

There are no known empirically based studies assessing the effects of neuropsychological test feedback on variables related to treatment success with patients. Malla and colleagues used case studies to demonstrate the utility of neuropsychological test feedback in developing vocational rehabilitation plans for people diagnosed with a psychotic disorder (Malla et al., 1997). Allen and colleagues discussed the applicability of a process approach for neuropsychological assessment and feedback in order to provide psychiatric patients and their families information about deficits related to possible brain dysfunction

(Allen et al., 1986). These studies advocate for an informed neuropsychological assessment and feedback process that involves a “diagnostic partnership” with patients in order to provide accurate, in-depth information about cognitive performance that enhances patients’ understanding of their functioning and develops realistic and applicable treatment goals (Allen et al., 1986; Gass & Brown, 1992; Malla et al., 1997).

### ***Psychological Testing as a Therapeutic Intervention***

Psychological testing has historically been looked upon with disdain, especially by humanistic practitioners, because testing was seen as a dehumanizing endeavor where the patient is viewed as an “object” to be observed and reduced to categories, traits, and diagnoses (Dana & Leech, 1974). Traditionally, psychological testing was conducted in a “top down” manner, with the evaluator providing a series of tests to a passive patient. The patient followed the examiners’ instructions, completed the tests as required, and then had little input on the results, report, or decisions made from the results. This method of psychological testing was thought to stem from the medical model and psychometric traditions, where disease states are reduced to the most finite and measurable characteristics in order to contain, control, and treat. Just as the physician used laboratory tests or x-rays to concisely target the disease, psychological tests were seen as methods for reducing and concisely defining the mental disease process in order that it could be diagnosed and effectively treated through available methods. Dana and Leech trace the background of this philosophy to classical Newtonian thought where the external environment is considered separate from human beings’ subjective experience and thus can only be known through objective observation. The fallout of this philosophical assumption was the dehumanizing of individual subjective experience and the objectification of humankind (Dana & Leech, 1974). Psychological testing was seen as a tool of this dehumanizing process.

This trend began to change with the development of models of psychological testing that emphasized patients’ subjective experience and elicited their collaboration in the testing process. The advent of nondirective counseling methods (Rogers, 1942, 1951) changed the counseling emphasis from one of identifying unconscious forces that explain psychopathology to the creation of a trusting therapeutic environment where patients can feel safe to relinquish defenses and learn about themselves and their actualizing potentials. Some psychologists began to see how the use of psychological tests, administered under the conditions set forth by Rogers and other humanistic philosophers, can facilitate the development of self-knowledge, provided that the tests are used to *serve the needs of the patient* (Cronbach, 1949). These authors began to develop methods for using psychological tests as therapeutic interventions.

The use of psychological tests in psychotherapy emphasized performance-based (i.e., projective) testing methods and also frequently used self-report,

intelligence, and cognitive tests (Aronow & Reznikoff, 1971; Bellack, Pasquarelli, & Braverman, 1949; Berg, 1985; Harrower, 1956; Luborsky, 1953; Mosak & Gushurst, 1972). Different authors have described the use of psychological tests in the psychotherapy encounter. Cronbach (1949) describes the use of tests in nondirective counseling only when the patient is ready or asks for such information. In describing the approach of Bordin, Cronbach emphasizes the empowerment of the patient who chooses what tests can be administered in order to answer questions that are important to them. Thus, the patient becomes the initiator of the testing process and is thereby responsible for the information they want to know about themselves. Another method is the provision of objective, graphical information about a patient's score in relation to others who have taken the test. Cronbach de-emphasizes the professional opinion of the psychologist and instead focuses on the provision of objective information that allows the patient to decide the meaning of the test results for their own lives. Instead of rendering a professional judgment as to what the test results mean, the evaluator would provide objective information about where a patient's test score falls within a plot or graph and what this score might mean in relation to a patient's question. The evaluator would then allow the patient to share thoughts and reactions and offer their own interpretation of what the test results mean for their lives. In regard to personality tests, Cronbach cites Bixler's opinion that the tests should be used to help the patient reflect on their feelings and to expand their understanding of themselves, versus using the tests as a way to diagnose or categorize a neurosis or a pathology. Additionally, Cronbach emphasizes that patients must be allowed to reject the interpretation of tests and that examiners should not become defensive or justify their results in order that patients feel free to openly and honestly examine themselves (Cronbach, 1949).

Molly Harrower (1956) developed a method for using patients' responses from performance-based tests as a way to develop insight and enhance the therapeutic process, which she termed "Projective Counseling Technique" (Harrower, 1956). The essence of the therapy is to elicit patient responses to clarify conflicts, confront the patient with their responses, and initiate a psychological reeducation process. The methods for her counseling technique are not well defined; however, some concepts can be deduced from her descriptions. The test interpretations are designed to facilitate patient insight, to develop ego integration and psychological adjustment, consistent with classic psychoanalytic theory. Harrower describes the use of test responses in much the same way as dream analysis (Wolff, 1956). Her methods could be considered primarily nondirective in that she would allow the patient to freely associate their projections and may even encourage the patient to provide their own interpretation, with the clinician providing guidance and suggestions.

Berg (1984) illustrated a model for a more flexible psychological testing process that considers the patient's interpersonal behavior as information for understanding test responses. His "Transactional Model" of the testing process emphasized a collaborative relationship between the examiner and the patient,

which served to create a “psychological map” of the patient. Berg further developed a feedback process in which the examiner may comment on the patient’s behavior during testing, all of which contributes to the collaborative endeavor. The elements of the feedback process include the following: (1) using language understandable to the patient; (2) gradually presenting psychological insights so as not to overwhelm the patient; and (3) providing brief information that is most useful, applicable, and relevant to the patient, the diagnostic process, and treatment recommendations (Berg, 1984). In addition, Berg emphasizes providing initial feedback that is within the realm of the patient’s understanding and then gradually working toward deeper, unknown insights. This is consistent with Stephen Finn’s perception that patients more readily hear information consistent with their own self-perception before they are ready to hear insights that are discrepant from their self-concept (Stephen Finn, 2007, personal communication). A fourth point relates to patient resistance. An examiner should use methods that lower resistance and foster collaboration, such as empathic evaluation, so that the patient may feel secure and free to continue commenting on the test material. Berg emphasizes that in reviewing the feedback at the end of testing, observations shared should have been mutually created by the examiner and the patient. In this way, the patient is an active collaborator in developing the assessment, feedback, and subsequent treatment recommendations.

### ***Collaborative Individualized Assessment***

Constance Fischer expanded on the view of psychology as a human-science endeavor by applying existential frameworks to psychological assessment. She posited an alternative to the deterministic “man-as-object” medical viewpoint in favor of a more collaborative “man-as-co-constitutor” of experience (Fischer, 1970). The psychological evaluation is one where the psychologist and patient work together and openly dialogue about the testing process. As collaborators, they mutually share findings and impressions, and the patient’s experience and responses to the testing are understood in context of their life. Test results are shared in an open manner with the psychologist using down-to-earth terms, and the patient is free to openly dialogue about the interpretations provided (Fischer, 1970, 1994). This method is a change from traditional models that emphasize secrecy in psychological testing (Fischer, 1972). Collaborative Individualized Assessment (CIA) is based on phenomenological models of psychology that seek to understand a patient’s experience in the world as it is lived existentially, behaviorally, and reflectively (Fischer, 1979). In CIA, the assessor works collaboratively to understand a patient’s unique worldview as it relates to the purpose of the assessment. Test scores, categories, and classifications are tools that serve to develop an understanding of the patient’s life events.

CIA is conceived as a blend of the art and science of psychology into a “human science psychology” (Fischer, 2003), where the goal is to recognize human characteristics not easily captured by naturalistic science, yet remaining true to psychology as a scientific discipline. To accomplish this, a number of principles guide CIA. First, the assessor and patient *collaborate* in the assessment process. The patient is not a passive recipient of the assessors testing methods but is an active facilitator of the process and is thus empowered to share thoughts and ideas about the course of the assessment. Second, the patient’s experiences and testing results are understood in the *context* of life events. The patient is not compartmentalized into simplistic categories, traits, or diagnostic constructs but is viewed as influencing and being influenced by the world in which they live. In CIA, the evaluator may *intervene* in the assessment process by deviating from standardized procedures in order to open the patient’s experiential world and test alternative responses or reactions to the assessment. An assessor will use varieties of therapeutic dialogue to encourage deeper communication and openness by the patient, thereby more fully *describing* the patient’s phenomenological world. Finally, patient’s experiences are viewed in a *holistic* manner, where individual *complexity* and *ambiguity* are respected and there is no need to reduce experience to a series of traits, constructs, or other categorical systems (Fischer, 1979, 1994, 2000). CIA views the patient as a being “in process,” with the testing activity serving as a microcosm of the individual’s phenomenological world where the person becomes an active processor and creator of where they are and where they want to be (Fischer, 1979, 1994).

### ***Therapeutic Assessment***

TA shares many principles with CIA, and in fact, they have mutually influenced each other (Finn, 2007). In TA, psychological assessment is used as a therapeutic intervention. Its methods are strongly rooted in humanistic psychology, although this was not the primary philosophical basis (Finn & Tonsager, 2002). In TA, the tester is an active participant and the psychological assessment is an opportunity to facilitate rapport. Testers work collaboratively to develop empathic understanding with patients, openly dialogue about patient’s responses to test stimuli, use the testing process to apply results to problems of daily living while exploring new ways of thinking and feeling, and pay attention to the interpersonal process to open further dialogue (Finn, 1996b; Finn & Tonsager, 1997; Finn, 2003).

TA uses the MMPI-2 in addition to performance-based tests, such as the Rorschach, and semi-structured psychosocial measures (Finn, 1996a, 2003; Finn & Kamphuis, 2006). There is empirical support for the utility of TA with college students. In one study, students seeking psychological services at university counseling centers were randomly assigned to receive feedback from the results of the MMPI-2 or clinician attention only. Results suggested that

those who received feedback on their test performance reported increased self-esteem, decreases in symptomatic distress, and more hopefulness about improving their problems (Finn & Tonsager, 1992; Newman & Greenway, 1997). A case study illustrating the effects of TA with a man previously diagnosed with attention-deficit disorder showed how TA can be used as a professional consultation tool to explore a patient's life and struggles more deeply. This consultation model resulted in diagnostic clarification and direction in therapy as well. The result was that the patient was able to more fully understand and eventually change his "life story" (Finn, 2003). This case study illuminates the importance of a collaborative process where the term "feedback session" is actually a misnomer. A "feedback session" is a unidirectional approach where information is imparted from assessor to patient in a passive method. In the TA approach, the tester and the patient collaborate to apply and possibly rewrite patients' life stories (Finn, 2003). TA methods have expanded for use with different patient groups including those diagnosed with an eating disorder, borderline personality disorder, adult outpatients, severely emotionally disturbed children and their families, and executives being assessed for promotion (Finn & Martin, 1997; Michel, 2002; Finn, 2003; Finn & Kamphuis, 2006; Tharinger, Finn, Wilkinson, & Schaber, 2007; Fischer & Finn, 2008).

### ***Summary of Psychological Testing as a Therapeutic Intervention***

The use of psychological tests in the therapy encounter has a moderately rich history that has not broken into the mainstream of psychology. As a general framework, psychological testing methods merged with humanistic and existential principles. Thus, some common methodologies can be elucidated. First, testing is a collaborative endeavor with the psychologist and patient working together in the examination. Second, there is an open dialogue between the patient and the psychologist about the testing procedures and results so that the patient is an active participant in developing their own psychological profile. Third, there is a deviation from standard procedures or procedures are modified in order to elucidate aspects of the patient's psychological life not captured through standardized methods. Fourth, there is an open sharing of results. Patients are not kept in the dark about the test results but, in fact, may be co-interpreters of the information elicited from the tests. As such, the patient is empowered to agree or disagree with the results and to be an active creator of their own psychological life. Finally, diagnoses, norms, labels, and other constructs are used as tools to further understand the patient in context, as a whole person. Patient's psychological worlds are not reduced to traits or disease states, but these constructs contribute to an overall understanding of the individual. These principles are included in the CTNA, and their application will be explained further in the section on CTNA methods.

## **Contemporary Applications of Therapeutic Assessment and Neuropsychology**

### *Therapeutic Neuropsychological Assessment (Gorske, 2008)*

Therapeutic Neuropsychological Assessment (TNA) refers to a clinician's use of neuropsychological test results as a treatment method. The goal of the treatment is to facilitate change, healing, and growth with a patient who is suffering from some type of psychological condition. If there is no intention to treat, heal, or facilitate change, then the intervention is not therapeutic. For example, the goal of Collaborative Neuropsychological Assessment (CNA) developed by Dr. Steven Smith is to initiate the patient as a co-interpreter of neuropsychological test results. The goal is not to provide treatment but to enhance collaboration. One could argue that the collaborative nature is inherently therapeutic; however, this is not the primary goal. The goal of TNA, however, is to provide a treatment, hence the term therapeutic.

The Neuropsychological Assessment Feedback Intervention (NAFI) is a form of TNA developed as a brief intervention designed to enhance motivation for treatment adherence that involves the use of a semi-structured personalized feedback report. Any clinician who provides information from neuropsychological test results as a form of treatment conducts TNA. However, the use of the personal feedback report as a treatment entry intervention is what separates the NAFI from TNA. Although this may seem like semantics, it is important to provide this distinction for clarity. Essentially, the NAFI is more structured than TNA. TNA represents the heart or spirit of what the NAFI is trying to accomplish. NAFI is a brief treatment entry intervention that provides information about cognitive strengths and weaknesses and about how these cognitive strengths and weaknesses relate to important life problems patients may be experiencing. NAFI is not an educational intervention where a clinician provides information to passive patients in a "top down" manner. Patients are enlisted as active collaborators and are free to comment on the testing process and to discuss how the test results apply to their daily lives, they and are encouraged to share thoughts and reactions and agree or disagree with the information. The testing and feedback process is likely to be perceived as a therapeutic experience that uses the "tools" of neuropsychological testing to facilitate change, healing, and growth. Therefore, the clinician who conducts a NAFI session must have good clinical skills in developing a safe, empathic, and nonjudgmental therapeutic environment. NAFI uses the tools of Motivational Interviewing for developing therapeutic rapport, eliciting active patient collaboration, and lowering resistance that may be elicited from hearing test results.

The NAFI began development in 1999/2000 while Dr. Gorske was in post-graduate training at Western Psychiatric Institute and Clinic in a joint Addiction Medicine Services/Clinical Neuropsychology fellowship. For his post-doctoral experience, Dr. Gorske provided neuropsychological testing to patients diagnosed

with a dual disorder (psychiatric and substance use disorder) in the Addiction Medicine Services Intensive Partial Hospital Program, a specialized group program serving dual-disorder patients. Dr. Gorske conducted and interpreted the test results under the supervision of Dr. Christopher Ryan, an internationally known neuropsychologist who, with the late Dr. Nelson Butters, studied cognitive factors in patients with alcoholism. The dual-diagnosis group was chosen for testing because there is very little information in the research literature on cognitive factors related to dual-diagnosis patients.

Earlier research on cognitive dysfunction associated with dual disorders focused primarily on schizophrenia with comorbid alcohol or cocaine use. Studies were inconclusive because they failed to determine that dual-diagnosed patients were more impaired than schizophrenic patients alone (Addington & Addington, 1997; Nixon, Hallford, & Tivis, 1996). Both schizophrenia and alcohol abuse disorders, independently, have similar impairments in abstract thinking and higher level reasoning skills, selective attention deficits, similar abnormal electrophysiological findings (such as reduced P300 amplitude reflecting disordered attentional processes), information-processing deficits, and memory deficits (Tracy, Josiassen, & Bellack, 1995). Studies that did find increased impairment in dual disorders reported deficits in learning and memory, abstraction ability, social comprehension, and verbal auditory perception (Serper, Bergman, & Copersino, 2000; Allen, Goldstein, & Aldarondo, 1999). The few studies conducted on cognitive functioning in non-psychotic dual-disorder patients indicate deficits in general intellectual functioning, problem solving, abstraction, verbal and visual memory, attention, calculation, comprehension, and visuospatial ability (Blume, Davis, & Schmalzing, 1999; Carpenter & Hittner, 1997; Meek, Clark, & Solana, 1989).

After completing a testing session, the patients began to ask Dr. Gorske if they could receive feedback about the test results. Dr. Gorske and Dr. Ryan felt it was important to provide the information in a format that was clear and understandable to patients so they could be applied to their lives and problems related to their dual diagnosis. However, there was no agreed-upon conceptual framework for providing neuropsychological test feedback.

As part of his postdoctoral work, Dr. Gorske worked as research clinician and was trained to provide a specialized Motivational Interviewing intervention developed for a study funded by the National Institute on Drug Abuse for patients diagnosed with cocaine dependence and depression, led by Dr. Dennis Daley, one of the forerunners of research and treatment methods for dual-diagnosis patients. Part of the intervention included the use of a personalized feedback report similar to that used in the multisite Project MATCH studies (Miller, Zweben, DiClemente, & Rychtarik, 1992). The feedback report provided patients with objective information about the severity of their drug use, psychosocial impairment, diagnosis, and other personal information. However, the information from the feedback report did not seem to offer any new insight that was effective in motivating patients to make changes in their behavior. However, it was believed that the information from the neuropsychological

tests might be useful to patients in providing relevant and applicable information about their cognitive and behavioral functioning, hence the idea to develop a personal feedback report based solely on neuropsychological test results.

The initial feedback report was three pages long and included basic information about neuropsychology and neuropsychological assessment and a brief description of patient's performance on individual tests. Patients who were tested were then given feedback from their neuropsychological test results. Anecdotal observations suggested that the patients were very pleased about the neuropsychological test feedback process. It appeared to enhance self-disclosure, and they began to talk about life areas they were concerned about, which the testing process seemed to elicit. They saw the applicability of the tests and the skills assessed to their daily lives. Most patients had some areas of cognitive compromise, either due to drug use or psychiatric illness, and they began to inquire about ways to improve their cognitive abilities so they could begin to lead more productive and fulfilling lives. From these promising observations, a more formal study of the NAFI began. Through funding from the Western Psychiatric Institute and Clinic Mental Health Intervention Research Center (MHIRC), Dr. Gorske gathered some preliminary data on the effectiveness of the NAFI in motivating patients to adhere to the Dual-Diagnosis Partial Hospital Program. In addition, data was gathered on patient satisfaction with the NAFI and that feedback was used to continually develop and crystallize NAFI methods. This preliminary data indicated positive outcomes that were compelling enough to obtain funding from the National Institute on Drug Abuse to conduct a more formal pilot study on "The Effects of Cognitive Test Feedback on Patient Adherence" (DA017273-01A1).

## Pilot Study Results

A total of 30 patients were recruited for the study. The majority were women ( $n = 18, 60\%$ ) and Caucasian ( $n = 23, 77\%$ ), with the remaining patients being African American. The primary DSM-IV Axis I diagnosis, for substance use disorders, was alcohol dependence (27%) followed by cocaine dependence (7%). The most frequent Axis I mental health diagnosis was depressive disorder not otherwise specified (43%), followed by major depression (10%). The average age of patients was 38, with a mean education level of 2 years of college.

After patients agreed to enter the study and signed the appropriate consent forms, they received a small battery of neuropsychological tests. Afterward, the patients were randomly assigned to the NAFI feedback session or the treatment as usual (TAU) session, which included an orientation to the Dual-Diagnosis Partial Hospital Program at the Western Psychiatric Institute and Clinic Addiction Medicine Services and a brief session emphasizing the importance of 12-step meetings and following the 12-step approach to treatment. The NAFI session was administered either by Dr. Gorske or by a trained research clinician. The

TAU session was administered either by Dr. Gorske or by a partial hospital staff member.

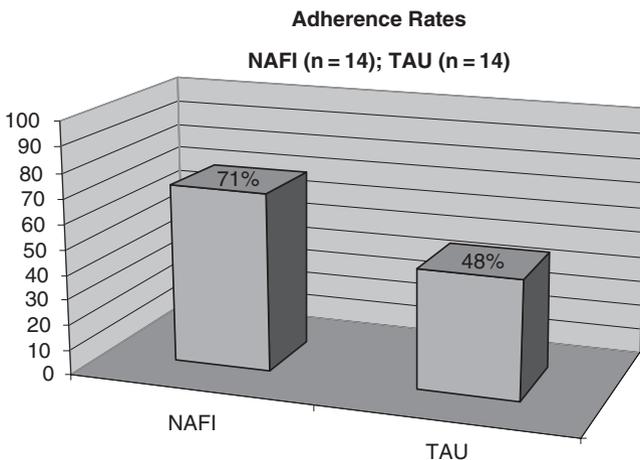
Two patients did not follow up after receiving the neuropsychological assessments, so they were not included in the adherence data. The results indicate that patients who received the NAFI session attended about 71% of the required group days versus the TAU group that attended 48% of the required group days. This difference was significant ( $t = 2.139, p = 0.042$ ), with a moderately large effect size (bias corrected Cohen's  $d = 0.78$ , standard error = 0.39, 95% confidence interval = 0.02 – 1.55). A graphical illustration is presented below (Fig. 2.1).

In addition, both groups showed a decrease in their alcohol and drug use, although these differences were not statistically significant.

The patients' personal responses to the intervention were overwhelmingly positive. In order to assess this, a patient feedback form was administered following completion of the NAFI session. Comments made by patients included the following:

- “The assessment was helpful to me. I learned a lot about myself . . . I would have done it without being paid.”
- “Allowed me to see why I may be reluctant to participate in groups.”
- “Helped me narrow in on specific steps I need to take with my therapist re: depression and addiction. Identified a couple things we can work on.”
- “I am so pleased that I participated in the study. It was right on. The clinician allowed me to share during the process, which really assisted with my overall understanding of the feedback.”

This is the only known study that examines the impact of neuropsychological assessment feedback on patient treatment adherence rates. The results are



**Fig. 2.1.** Unpublished results from the NIDA study Effects of Cognitive Test Feedback on Patient Adherence

promising that such an intervention may be helpful in increasing patient satisfaction and improving attendance in formal treatment programs, especially with a challenging and traditionally treatment non-adherent patient group such as those with a dual diagnosis.

The obvious limitations of the study are that it contains a small and relatively homogenous patient sample. Additionally, the multitude of factors that may have contributed to patient adherence were not analyzed – one rather frustrating limitation related to the nature of the intervention itself. The NAFI was designed as a treatment entry intervention where patients receive a 1-hour session at the beginning of formal treatment. Afterward, they are sent to a traditional 12-step group program that emphasizes a more psychoeducationally based “confrontation of denial approach.” Thus, it is possible that the patient-centered, individualized treatment experiences and recommendations were lost following the initial intervention. This could have impacted adherence rates and substance use outcomes. Future work may want to consider fashioning the treatment entry intervention and follow-up care so that they bridge similar theoretical frameworks.

Despite these limitations, the NAFI study is the first to examine a neuropsychological assessment feedback intervention and its affects on patient outcomes. The results appear to be promising enough to warrant examining such an intervention further and continually developing the framework of the model so that it can be used and adapted for other settings and patient populations.

### ***Collaborative Neuropsychological Assessment***

CNA was developed by Dr. Steven Smith from the Psychology Assessment Center at U.C. Santa Barbara. CNA was developed to bridge the gap between clinical neuropsychological assessment, interpretation of test results, and the provision of recommendations to patients and families. Unlike the NAFI, CNA was concerned not only with feedback but also with the overall clinical approach of neuropsychologists. This includes a focus on alliance building during interviews and testing sessions. CNA is based on TA research as well as psychotherapy process and therapeutic alliance work. In addition, CNA has a great deal of overlap with Gorske’s TNA, and the two models have mutually influenced each other.

The three primary goals of CNA are as follows: (1) to provide answers to both the patient’s questions and those of the referring professional; (2) to help the patient feel understood, and listened to by the clinician; (3) to provide the patient with a personal narrative-changing experience that will lead to greater insight, personal growth, acceptance, and/or responsibility. It is assumed that by working with the patient in a collaborative manner and attending to their needs, wishes, and emotional experiences, the results of the assessment will be more useful, powerful, and transformative. Given the centrality of the alliance in

predicting treatment outcome in psychotherapy (Horvath & Symonds, 1991; Martin, Garske, & Davis, 2000), it is expected that the CNA approach will improve the alliance between the patient and the clinician, resulting in better test performance and greater follow-through with recommendations.

CNA is a patient-centered approach that views the patient as the most important informant in the assessment dialogue. This approach is appropriate primarily for patients without the most serious cognitive injuries or dementing conditions that might reduce the extent to which they can fully engage in the process. The clinical stance of CNA is to be open and accepting, interested, and concerned. The clinician works to seek answers to the patient's (or patient's family) specific questions so that the patient can have a greater understanding of themselves, their cognitive difficulties, and their day-to-day lives. CNA recognizes that the patient's difficulties have an emotional impact, causing distress, anger, and depression. Last, CNA recognizes that the most powerful assessment intervention is the feedback session, where assessors and patients can work together to understand the relationship between test findings and the patient's life struggles. The process of CNA proceeds in the following manner:

**The initial interview:** The goal of the initial interview is to understand the patient's symptoms and also the patient's emotional experience of those symptoms. This reflects the holistic viewpoint of CNA in understanding patient symptoms and individual perceptions, which are believed to be essential in understanding the nature of an illness or injury. There are four main components of the initial interview: understanding the problem, the patient's experience of the problem, the patient's wishes or fantasies about how the evaluation will help, and a socialization to the assessment process. Once the initial interview is complete, the testing proceeds according to standard procedures and administration guidelines. It is important to check the patient's clinical status as testing proceeds for fatigue, motivation, hunger, or any other factors that may contribute to quality of performance.

**The feedback session:** The primary goals in a CNA feedback session are to relay information to the patient regarding their performance on the tests and to relate this information to real-world difficulties that may compromise their cognitive and behavioral functioning. The outline for the CNA feedback session shares common methods with Ackerman, Hilsenroth, Baity, and Blagys (2000) and Hilsenroth, Peters, and Ackerman (2004) as well as the NAFI.

The method for conducting the session begins with the clinician asking the patient their fantasy about what they see as their strengths and later their weaknesses. The feedback begins with more global strengths and weaknesses (e.g., verbal and nonverbal processing) and moves to more specific skills (e.g., immediate sensory attention, semantic fluency). The key skills are to relay the information in layman's terms, free of jargon, and then to relate the information to patient's real-world functional concerns. Following feedback about strengths and weaknesses, a brief summary is given regarding the main points discussed.

Finally, the clinician provides a review summary of the key themes identified in each section of the feedback session. In addition, the clinician may present

any diagnostic or other important mental health issues that would be important for the patient to know. The summary concludes with a review of patient questions, potential responses to those questions, and recommendations for further care or treatment. As is appropriate, the clinician will provide a list of resources that may be helpful for meeting the recommendations given.

### *The Neuropsychology Case Conference*

The Neuropsychology Case Conference (NCC) model developed out of the Neuropsychology Program at Windsor Regional Children's Center. The model was developed based on an identified need to enhance collaborations between parents, teachers, and clinicians in helping school-age children with various forms of mental health or learning disabilities. The model is a method of integrated neuropsychological assessment, consultation, and intervention designed to improve parenting education and treatment effectiveness (Casey, Strang, Roach, & Innard, 1997; Strang, 1987). One part of this clinical model, the Neuropsychology School Conference (NSC), has been empirically tested and has received some preliminary empirical support (Casey et al., 1997). The utility of NCC lies in two main premises: the necessity for a child's parents, teachers, and clinicians to share a common understanding and realistic expectations of the child, and second, that remedial goals, intervention strategies, and environmental accommodations must be shared, coordinated, and implemented by these adults in the child's everyday environment (Casey et al., 1997).

The NCC model has developed over 20 years and reflects experiences in clinical practice from John Strang and colleagues. The feedback model involves three main phases: (1) listening to information provided by parents/guardians/loved ones about the child/patient in an initial neuropsychology interview session; (2) the second (post-testing) session involves connecting the neuropsychological assessment findings and implications to the information and perceptions provided by parents; (3) a similar exchange develops between parents and the child's teachers in the NSC. The advantage of this method is that parents enter the conference being more informed and educated about their child's condition and feel better equipped to dialogue with school officials about the child's capabilities and needs.

Experience with the model suggests that all team members, especially the child's parents, undergo a progressive building of understanding about the child's special strengths and needs throughout the implementation of the model. Furthermore, experience suggests that when all team members actively participate in the discussion and intervention plan generated at the NSC, a better and shared understanding of the child takes place. Anecdotal observations suggest that the child's day-to-day experiences have improved substantially, which can lead to dramatic improvements in the child's outlook.



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