

Examining the Relationship Factor in a Criminal Justice Setting: Therapeutic Alliance,  
the Dual-role and Principles of Effective Correctional Counselling

by

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## **Abstract**

The purpose of the present study was to determine which measure, the Working Alliance Inventory (WAI), the Dual-role Relationship Inventory – Revised (DRI-R), or the Effective Correctional Counselling (ECC) measure, and which subscales within each measure, is most predictive of criminal justice outcomes (i.e., number of missed supervision appointments, changes in the severity of criminogenic needs and recidivism) for a sample of offenders on probation. In order to answer this exploratory research question, a sample of ( $n = 144$ ) audiotaped interviews between probation officers ( $n = 34$ ) and their clients ( $n = 72$ ) were coded using the three measures. Two sessions per probation officer-client pairing were coded and analyses were conducted on the aggregate scores of the two sessions. Overall, it was found that the total score of the DRI – R was significantly predictive of recidivism after a two-year follow up period. Also, the pattern of results showed that the Trust subscale of the DRI – R was the best component of the three scales for the predicting decreases in the severity of criminogenic needs from the commencement of supervision to six months of supervision and decreases in the odds of recidivism after two years. The results of the present study lend some support to the ability of the DRI – R for predicting outcomes for a sample of criminal justice clients; furthermore, the results suggest that elements of the dual-role relationship may play an important role in modifying outcomes for involuntary clients.

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Examining the relationship factor in a criminal justice setting: Therapeutic alliance, the dual-role and principles of effective correctional counselling

### Introduction

The importance of the relationship factor as a therapeutic technique in correctional settings has been a hotly debated issue in criminal justice research. The psychotherapy literature has identified that the quality of relationships between therapists and their clients is the major determinant of therapeutic outcomes (e.g., mood, symptoms, termination status). Research exploring the therapist-client relationship, and its influence on the therapeutic process, has indicated that positive relationships are related to positive therapeutic outcomes (Elvins & Green, 2008; Martin, Garske, & Davis, 2000). The most common conceptualization of this notion is “therapeutic alliance”. Also referred to as “working alliance”, “therapeutic bond”, and “helping alliance”, the concept of therapeutic alliance (TA) can be loosely defined as: a collaborative bond between therapist and patient whereby positive change is achieved for the client via interpersonal processes that exist independent of specific treatment techniques (Green, 2006; Martin et al., 2000; Ross, Polaschek & Ward, 2008).

The alliance construct has been referred to as “the quintessential integrative variable of therapy” (Wolf & Goldfried, 1988), meaning that the quality of the relationship between the service provider and client is the *most* important factor in determining the outcomes of therapy, irrespective of treatment type or modality (Safran & Murrin, 1995). Numerous outcome studies and meta-analyses from the psychotherapy literature have supported the view that harvesting a positive relationship with a client is both *necessary* and *sufficient* to achieving the desired therapeutic outcomes (e.g., Eames

& Roth, 2000; Horvath & Greenberg, 1989, 1994; Mallinckrodt, 2000; Martin et al., 2000). The emphasis that has been placed on TA has led to the creation of a multitude of measures to assess the quality of therapeutic alliance in therapy settings (e.g., Working Alliance Inventory, California Psychotherapy Alliance Scales, and Vanderbilt Scales etc.). These measures vastly range in their predictive ability as well as the validity of their measurements of TA (Horvath & Symonds, 1991).

Given that the notion of therapeutic alliance originated out of the psychotherapy field, where client participation is primarily voluntary, some researchers have questioned the applicability of TA theory and measurement to relationship contexts with clients who are mandated to treatment (i.e., probation/parole). Mandated treatment is often a legal requirement whereby patients must attend treatment/supervision in order to comply with rules or conditions (e.g. legal sanctions). Researchers have suggested that TA does not conceptually fit the social dynamics at play in mandated treatment settings (Skeem, 2004; Skeem, Eno Louden, Polaschek & Camp, 2007). For example, in mandated treatment, the relationship may be influenced by factors such as: predetermined goals, lack of collaboration or partnership, and imbalance of the power structure. In mandated treatment, the service provider must perform a dual-role, acting as both the therapist as well as the enforcer of rules and conditions. This power differential is what researchers identify as a potential barrier to establishing a positive working relationship between service providers and clients.

In order to capture the unique element of the dual-role in mandated treatment settings, Skeem (2004) developed the Dual-role Relationship Inventory – Revised (DRI – R). The DRI – R is the only formal measure of relationship-quality for mandated

treatment settings. Preliminary research has demonstrated the DRI – R to be more theoretically consistent with mandated treatment relationships compared to other measures of therapeutic alliance. Also, there is some preliminary evidence to support the DRI – R’s predictive ability of criminal justice outcomes (i.e., rule compliance and revocation) in a community supervision setting (Skeem, et al., 2007).

Vast amounts of research in the psychotherapy literature, both theoretical and empirical, have suggested that therapeutic alliance is the most important factor for determining success in therapy. In the criminal justice field however, particularly with community supervision samples, the role of therapeutic alliance has gone relatively unexplored. Research in the criminal justice field however has demonstrated that the principles of effective correctional counselling (i.e. structuring, relationship-building, cognitive, and behavioural techniques), are robust in predicting criminal justice outcomes (e.g., recidivism; Andrews & Bonta, 2006, Trotter, 1999).

The conceptual and empirically-based model that has been paramount in the development of the principles of effective correctional counselling is the risk, need, and responsivity (RNR) theory of criminal behaviour. This theory proposes that an offender’s risk level, criminogenic characteristics and personal characteristics should dictate the level and type of program services (Andrews & Bonta, 2006; Andrews, Bonta & Hoge, 1990). Alternative to the psychotherapy perspective, the theory of RNR posits that the relationship factor is effective when it occurs in conjunction with empirically-based principles of effective correctional practice (i.e., Structuring and Cognitive-Behavioural Techniques).

Research in this field has shown that a positive relationship can facilitate positive change; however, if the content of the interactions between the service provider and client are not relevant to the client's criminal behaviour, changes to criminal justice outcomes will be insignificant (Andrews & Bonta, 2006). Under the responsivity principle, the theory of RNR recognizes the importance of the relationship factor, as well as it acknowledges the issues associated with the dual-role by suggesting the use of a "firm-but-fair" relational approach in mandated treatment settings. It also suggests however, that a positive relationship is *necessary* but *not sufficient* to achieving the desired criminal justice outcomes (e.g., reduced re-offending). Therefore, the RNR theory and the principles of effective correctional counselling suggest that interventions are most effective when they are empirically-derived/theoretically-based and are delivered in the context of a positive relationship.

The purpose of the present study is to measure the relationship-factor through the distinct lenses of the therapeutic alliance perspective, the dual-role relationships perspective and the principles of effective correctional counselling perspective. Validated measures will be used to predict criminal justice outcomes for offenders on community supervision. Using the Working Alliance Inventory (WAI), Dual-role Relationship Inventory – Revised (DRI – R) and the Principles of Effective Correctional Counselling (ECC) measure, this research will assess which measure and which subcomponents (e.g., tasks, goals, caring-fairness, structuring etc.) of each measure are most predictive of criminal justice outcomes with a sample of offenders on community supervision.

## **Therapeutic Alliance: Origins, Measurement and Empirical Support**

### **Origins and Conceptualizations of Alliance**

Research examining the role of therapeutic relationships can be traced back to Freud's (1912) early psychoanalytic work, when he explored the concept of unconsciously occurring emotional bonds that form between therapists and clients. Freud termed these concepts: *transference* and *counter transference*. Later works by Rogers (1957, 1965) in the area of humanistic psychotherapy more clearly delineate the origins of our current conceptualizations of therapeutic alliance. In his work he explored the role of therapist empathy and congruency, emphasizing the benefits of therapist-offered qualities. Greenson (1967) was the first to use the term "working alliance" to describe the benefits associated with the conscious and collaborative fostering of a positive relationship in therapy in order to achieve positive therapeutic outcomes. In contrast to Rogers' therapist-offered qualities, Strong (1968) put forward a theory of interpersonal influence. This theory suggests that positive outcomes in therapy are directly related to the extent a patient views the therapist as expert, attractive and trustworthy.

The mounting exploratory research around the therapeutic benefits associated with positive relationships led to early conceptualizations of therapeutic alliance. The concept of the "therapeutic bond" emerged as researchers attempted to operationalize the indicators associated with relationship-building in therapy sessions (i.e., empathy, rapport, and caring; Horvath & Symonds, 1991). There has been some disagreement among researchers as to whether the concept of alliance is a single construct (e.g., Sterba, 1934; Zetzel, 1956) or consists of numerous dimensions (Bordin, 1979; Luborsky, 1976).

Despite a lack of consensus on what constitutes a “therapeutic alliance”, three main elements underlie most conceptualizations of TA, including: (1) a collaborative relationship between therapist and client; (2) collaboratively developed treatment goals and tasks; and, (3) an emotional connection between therapist and client (Bordin, 1979; Gaston, 1990; Horvath & Symonds, 1991; Martin et al., 2000; Saunders, Howard & Orlinsky, 1989). In view of the vast amounts of exploratory literature discussing the theoretical conceptualizations and the therapeutic utility of alliance, empirical testing of the relationship between alliance and therapeutic outcomes (e.g., relief of personal distress) was promptly undertaken.

### **Early Empirical Support**

Empirical testing of therapeutic alliance began with Orlinsky and Howard (1975), who found a predictive relationship between therapist credibility as well as client engagement and “success” in therapy. From their empirical research, they created three dimensions of relationship alliance: (1) working alliance (investment in the therapeutic process); (2) empathic resonance (sharing of emotional state between client and therapist); and, (3) mutual affirmation (unconditional acceptance). Later, Bordin (1979) reworked the three dimensions into: *goal*, *task* and *bond*. Bordin’s inter-treatment work emphasized the concept of alliance as an important factor in therapy, independent of treatment method. This notion was further supported by Frank and Frank’s (1991) research of the “common active factors” across different treatment modalities (Elvins & Green, 2008).

Similar to Bordin, out of his empirical research, Luborsky (1976, 1984) created a bipartite model of alliance, consisting of ‘Type I’ signs (the client’s experience of therapy

and support as delivered by the therapist) and 'Type II' signs (the client's experience of a joint responsibility and struggle towards change and success in therapy). Finally, one of the more popular models of alliance came from Hougaard's (1994) bipartite model of alliance that distinguished "personal alliance" (addressing the personal relationships between therapist and client) from "task-related alliance" (addressing the formal aspects of treatment and outcomes). Empirical testing of these models began to lend support to the notion of therapeutic alliance as being integral to therapeutic success.

### **Measurement of Alliance**

A major difficulty associated with examining the contribution of alliance to therapeutic outcomes lies in its definition and conceptualization. A lack of consensus on what constitutes alliance has led to difficulties in its measurement. Differing views regarding the concept of TA has led to the development of a multitude of alliance measures. A recent review of the therapeutic alliance research highlights this issue by identifying all of the alliance measures that have been developed to date (Elvins & Green, 2008). The review identified a total of 32 alliance measures developed for the purposes of assessing the quality of therapeutic alliance in therapy sessions. Since the development of the first scale in 1962, each subsequent measure has attempted to fill the conceptual gaps left by the preceding measures. The sheer quantity of measures is indicative of a lack of agreement on how to conceptualize and measure alliance.

Apart from the number of scales, the variety of scales also exemplifies the lack of consensus on the conceptualization of alliance. Some measures focus on the importance of the patient's behaviour and/or perspective (e.g., Vanderbilt scales, 1978), whereas other measures more closely assess therapist views and behaviour (e.g., Barrett-

Lennard's Relationship Inventory, 1962). The alliance measures also vary in their respective theoretical frameworks, as some are founded in the psychodynamic perspective (e.g., California scales, 1986; Toronto scales, 1981) whereas other are rooted in a more sociological perspective (e.g., Kim Alliance Scale, 2001).

Among the many measures, the Working Alliance Inventory (WAI) is the most widely used measure of therapeutic alliance (Skeem et al., 2007). Given its "pantheoretic" and generic approach to assessing the constructs that underlie therapeutic alliances, it has been applied to a variety of research and treatment settings. The WAI was developed by Horvath and Greenberg (1986) in order to measure relationship factors, external to theory or intervention technique (Horvath, 1981; Horvath & Greenberg, 1986, 1989). Their aim was to develop a measure of alliance that was tied to a broad theory of therapeutic change, which in turn could be applied to a wide variety of therapy settings (Horvath, 1994). The development of the WAI was strongly influenced by client-centred theory (Rogers, 1951), social influence theory (Strong, 1968), psychodynamic theory specific to therapeutic relationships (Greenson, 1967) and most importantly, Bordin's (1975) integrationist approach to working alliance.

The components of the WAI are primarily based on Bordin's (1976) three components of alliance (i.e., tasks, bonds and goals), which he argued were the main determinants of the quality of a working relationship. The definitions of each of the three domains of the WAI have changed over time; however, they are currently defined as follows: (1) *Tasks* (the thoughts and behaviours that both the therapist and the patient view as productive and relevant elements of the therapeutic process in order to achieve the desired change); (2) *Goals* (the mutually agreed-upon outcomes that form the targets

of therapy); and, (3) *Bonds* (an intricate concept of mutual attachment between the therapist and client). The WAI has been used in a variety of treatment contexts with a variety of client samples, including offenders on community supervision (Skeem, et al., 2007).

### **Effectiveness of Alliance**

Psychotherapeutic outcome studies have shown moderate and consistent empirical support for alliance as being an important factor in determining success in therapy across various forms of treatment (Eames & Roth, 2000; Horvath & Greenberg, 1989, 1994; Krupnick et al., 1996; Mallinckrodt, 2000; Martin et al., 2000). A recent meta-analysis of ( $k = 79$ ) psychotherapy outcome studies indicated that alliance is moderately related to outcomes in therapy ( $r = .22$ ). The meta-analysis concluded that there is a direct association between alliance and outcomes, supporting the notion that alliance alone, irrespective of treatment/intervention techniques, is therapeutic on its own (Martin et al., 2000).

Within the psychotherapy field, a less common perspective has come from researchers who contend that alliance and intervention techniques may in fact have a synergistic effect to produce favourable outcomes. These researchers suggest that alliance is not the single most important factor that influences outcomes in therapy (e.g., Crits-Christoph & Connolly, 1999; Gaston, 1990). This perspective emerged as a result of the methodological limitations of psychotherapeutic outcomes studies that conclude that alliance is directly related to positive treatment outcomes. Although therapeutic alliance appears to have an impact, there is very little known regarding how the components of alliance (e.g., trust, goals, etc.) relate to outcomes. Researchers suggest that there are

considerable deficiencies in the conceptualization and discrete measurement of TA. These deficiencies, in turn, make it erroneous to conclude a causal relationship between alliance and therapeutic outcomes (Elvins & Green, 2008).

### **Mandated Treatment Settings and the Dual-role Relationship**

The benefits associated with therapeutic alliance and positive clinical outcomes have been supported by research across various forms of therapy. The concept of TA has been applied to various fields, such as medicine (e.g., Hall, Horgan, Stein & Roter, 2002), family violence interventions (e.g., Taft, Murphy, King, Musser & DeDeyn, 2003) and alcohol abuse interventions (e.g., Connors, Carroll, DiClemente, Longabaugh, & Donovan, 1997). Evidence from the aforementioned research suggests that alliance is an important component of evidence-based practice in reducing various clinical symptoms. A number of researchers however have questioned the applicability of the traditional conception and measurement of alliance to mandated treatment contexts with involuntary clients (Skeem et al., 2007).

### **Re-conceptualization of Alliance for Mandated Treatment**

Recently, there has been a movement towards the use of formal treatment mandates and legal sanctions that require clients to attend community treatment. These mandates are enforced in various contexts, such as civil orders (e.g., outpatient psychiatric commitment) and criminal justice sanctions (i.e., probation/parole). Given the involuntary nature of these arrangements, it has been proposed that the concept of alliance – developed in voluntary treatment settings – does not apply to the unique factors within mandated treatment relationships. As stated, the main elements of therapeutic alliance constructs include: a collaborative relationship between therapist and

client; collaboratively developed goals and tasks; and, an emotional connection between therapist and client (Bordin, 1979; Gaston, 1990; Horvath & Symonds, 1991; Martin et al., 2000; Saunders et al., 1989). In mandated treatment relationships, there are instantaneous difficulties associated with trying to establish these collaborative elements due to the involuntary nature of the arrangement.

In relationships where clients have been mandated to attend a prescribed service, the element of collaboration is more difficult to achieve due to the “lopsidedness” of the power structure between clients and service providers (Skeem et al., 2007). In other words, rather than functioning on a mutual arrangement of tasks and responsibilities, in mandated treatment, the service provider has a level of control over the client and his/her outcomes. The issue of control makes the relationship uneven, thus making collaboration a difficult task.

Unlike voluntary therapy/treatment, where the tasks and goals are determined collaboratively or are brought forward by the client, for involuntary clients, the tasks and goals are often predetermined. For example, in a community supervision setting, clients are required to attend scheduled supervision sessions and are required to comply with a supervision order that has been predetermined by a judge. In this case, the probation/parole officer may face challenges in establishing a collaborative relationship with the client, as s/he must act as the enforcer of various tasks (e.g., attend prescribed treatment programs) and goals (e.g., remain crime-free).

In addition to the difficulties associated with establishing a collaborative relationship, there are also difficulties with forming an emotional connection between clients and service providers. Emotional connection is in large part guided by the

formulation of trust; therefore, limits to confidentiality in mandated treatment settings complicate the development of therapeutic alliances. In other words, if a client is unwilling to disclose information or openly participate in treatment, this may have negative implications for the relationship as well as the outcomes of treatment (Marshall & Serran, 2004; Ross et al., 2008).

### **Issue of the Dual-role**

One of the most difficult tasks service providers face when treating involuntary clients is establishing a balance between their dual roles. In contrast to therapists who serve voluntary patients, in mandatory treatment settings, service providers must act as helpers as well as rule-enforcers (Trotter, 1999). Striking a balance between the helper-role and the surveillance-role appears to be key in promoting a positive therapeutic relationship in mandated treatment settings (Andrews & Bonta, 2006; Andrews, Zinger, Hoge & Bonta, 1996; Trotter, 1999).

An examination of therapeutic alliance in a community supervision context with mentally disordered probationers revealed that greater adherence to indicators of “relational fairness” (i.e., caring, fairness, trust and authority) was related to higher quality therapeutic relationships (Skeem, Encandela, & Eno Loudon, 2003). Relational fairness has also been referred to as an interpersonal form of “procedural justice”, whereby clients perceive mandatory conditions of treatment as less coercive when an element of negotiation on the part of the client and practitioner is present (Lidz, Hoge, Gardner & Bennett, 1995; MacCoun, 2005; Skeem, et al., 2003). In the community supervision study with mentally-disordered offenders, the probationers indicated that probation officers who acknowledged their own punitive role, while conducting

themselves with compassion and care, were more “relatable” compared to those who followed an authoritarian style of supervision (Skeem, et al., 2003; Skeem et al., 2007).

Although this study did not investigate the relationship between probationers’ perceptions of their probation officers and compliance with probation, it provides insight into the types of factors (e.g., relational fairness) that influence how involuntary clients relate to those service providers who occupy a dual-role. Future research is needed to further investigate these factors with other client samples in involuntary treatment settings.

### **Measurement Issues and the Dual-role Relationship Inventory – Revised**

Apart from the conceptual limitations of alliance, there are two major measurement issues that limit the applicability of traditional TA to relationships in mandated treatment. First, there is the unique element of the dual-role, which some researchers claim, is not captured by conventional measures of alliance (Skeem et al., 2007). These researchers suggest that traditional measures of alliance only focus on the therapeutic/helper role of the therapist, which is only part of the role that service providers must adhere to in mandated treatment settings.

Second, it has been suggested that traditional measures of alliance are not sensitive to the differential goals of mandated versus voluntary treatment. Clients who voluntarily seek therapeutic support have a sense of agency in the tasks and goals they aim to achieve through therapy. On the other hand, involuntary clients are often faced with tasks and goals that have been predetermined by the mechanisms that have placed them in mandatory treatment (e.g., legal system). It has been suggested that measures of alliance that have not been developed for mandated treatment relationships are not

sensitive to these differential goals, and would therefore be unable to accurately link indicators of alliance to client outcomes (Skeem et al., 2007).

The suggested inadequacies of traditional conceptions and methods of measurement of TA led to the development of the Dual-role Relationship Inventory (DRI). Skeem and colleagues (2004) developed the DRI in an attempt to more accurately measure the quality of relationships specific to mandated treatment, to predict rule compliance, and to link relationship-indicators to client outcomes. The goal was to infuse traditional conceptions of alliance with the notion of the dual-role and procedural justice (Skeem et al., 2007).

The DRI was developed and implemented on a sample of specialty mental health probation programs. The probation officers were required to monitor clients' compliance with probation conditions, liaise with community mental health resources, as well as work with the clients towards clinical goals in the probation sessions (Skeem, Emke-Francis & Eno Loudon, 2006). After piloting the DRI with the probation sample and adding additional items to the original measure, the DRI – Revised (DRI – R) was developed. Similar to the Working Alliance Inventory, the DRI – R groups individual items into three domains: (1) Caring-Fairness (e.g., warm, caring, provides praise and direction), (2) Trust (e.g., honesty and safety), and (3) Toughness (e.g., punishing and demanding).

Despite its relatively recent development, some research has lent support to the ability of the DRI – R to capture relationship quality in dual-role relationships. In the developmental study of the DRI – R, the measure demonstrated strong internal consistency, conceptually coherent associations between measures of alliance and in-

session behaviour, symptoms, relationship satisfaction, motivation for treatment and rule compliance (Skeem et al., 2007). This study also revealed that the DRI – R was more strongly linked to session in-behaviour and relationship satisfaction, as well as more predictive of rule compliance and new arrests, compared to the Working Alliance Inventory (Skeem et al., 2007).

Although more research is required to replicate this finding, there appears to be some utility in incorporating the dual-role component when measuring the quality of relationships in mandated treatment contexts. Given the differential relationship structure and complex outcomes in mandated treatment, it appears that there is some evidence to support a re-conceptualization and new measures of alliance for involuntary clients; however, these findings are preliminary.

### **Principles of Effective Correctional Counselling**

The vast majority of the research on therapeutic alliance and relationship-building has been conducted with voluntary clients in therapy. Comparatively, there has been little research investigating this concept with involuntary clients (e.g., offenders). The principles of effective correctional counselling however provide a perspective on the importance and role of relationship-building in therapeutic contexts with offenders. These principles are based on social learning theory, cognitive-behavioural theory, empirically derived indicators of criminal behaviour and theoretically-based intervention skills. The principles of effective correctional counselling consist of four main components: (1) Relationship-Building, (2) Structuring, (3) Cognitive Techniques, and (4) Behavioural Techniques (Andrews & Bonta, 2006; Bourgon, Bonta, Rugge, Scott & Yessine, 2009; Trotter, 1999). The principles of effective correctional counselling are founded on the

risk, need and responsivity theory of criminal conduct. The role of relationship-building is discussed under the responsivity principle. This perspective suggests that a positive relationship between service providers and clients is important for creating an environment conducive to change; however, criminogenic change can only occur when the content of the interactions are relevant to the client's criminal behaviour (Andrews & Bonta, 2006).

### **Principles of Risk, Need and Responsivity (RNR)**

**Risk Principle.** The first component of the RNR theory is the risk principle, which states that the risk level of an offender can be predicted and must be matched with the frequency and intensity of the correctional service. In other words, a high-risk offender should receive a higher frequency and dosage of treatment, as they have a higher probability of negative outcomes compared to low-risk offenders. Low-risk offenders on the other hand, should receive little to no treatment (Andrews & Bonta, 2006).

Adherence to the risk principle has been shown to increase the effectiveness of programs for a variety of offender groups (e.g. sex offenders, violent offenders, substance abusers). A meta-analysis of correctional treatment revealed that treatment delivered to low-risk offenders had almost no effect (mean effect size = .03); whereas, the appropriate treatment delivered to high-risk offenders resulted in a moderate correlation ( $r = .17$ ), as expected by the risk principle (Andrews & Dowden, 2006).

Given the importance of matching an offender by risk level to service intensity, it highlights the importance of conducting assessments of risk with offenders. Risk assessments (e.g. Level of Service Inventory-Revised) give an indication of an offender's risk level and identify potential treatment targets (e.g., procriminal attitudes, procriminal

peers etc.). Risk assessments should tap into dynamic risk factors (factors that change) or criminogenic needs to track changes in offender risk levels in order to adjust treatment/supervision accordingly (Andrews & Bonta, 2006; Andrews & Dowden, 2006).

**Need Principle.** The second component of the RNR theory addresses the importance of identifying and targeting an offender's criminogenic needs (dynamic risk factors) in order to effectively reduce recidivism (Andrews et al., 1990; Andrews & Bonta, 2006). Criminogenic needs are factors that when improved or eliminated, are likely to result in a reduction of re-offending. There are eight criminogenic need areas that have been identified in the literature as being the "Central Eight" correlates of criminal behaviour. These risk/need factors include: antisocial personality, antisocial attitudes/cognitions, antisocial peers, history of antisocial behaviour, family/marital, employment/education, leisure/recreation, and substance abuse (Andrews & Bonta, 2006). Identification of criminogenic needs relies on proper administration of risk/needs assessments and often the reliability of offender self-report information.

One of the main distinctions that must be drawn from the need principle is the difference between criminogenic needs and non-criminogenic needs. As opposed to criminogenic needs, non-criminogenic needs are dynamic factors (e.g. poor self-esteem, anxiety/stress, etc.) that are only weakly related to recidivism (Andrews & Bonta, 2006). Given that one of the main goals of correctional treatment is to reduce re-offending, prioritizing criminogenic needs rather than non-criminogenic needs, increases the likelihood of treatment success (Andrews, 2000). Also, using a multi-modal approach to treating offenders (attending to more than one criminogenic need) has proven to be most effective (Andrews, 2000).

**Responsivity Principle.** The last principle of the RNR theory deals with the issue of general and specific responsivity. This principle can be looked at as the “what works for whom” principle (Wormith, Althouse, Simpson, Reitzel, Fagan, & Morgan, 2007). Responsivity involves the appropriate matching of treatment programs to an offender’s individual learning style and abilities (Andrews & Bonta, 2006; Andrews et al., 1990). General responsivity simply states that cognitive-behavioural interventions work best. The use of strategies that aim to teach offenders to recognize the thought/attitude-behaviour link are most effective in reducing the likelihood of recidivism. Specific responsivity is a treatment matching style that considers an offender’s personality, gender, ethnicity, motivation, age, language and interpersonal style (Bonta, 1995). For example, a treatment program that requires writing and group participation may not be effective for an offender who is timid and has problems with literacy.

Attending to these responsivity factors in correctional settings has been shown to result in treatment success and significant reductions in recidivism (Andrews & Bonta, 2006). Responsivity factors have become a major focus of the literature over the past few years. Issues such as gender, ethnicity, offender type, and treatment motivation are some of the responsivity factors that have garnered attention from researchers and are proving to be important factors to consider when treating offenders.

### **Relationship Building, Structuring, Cognitive & Behavioural Techniques**

#### **Relationship Building**

As previously stated, one of the four principles of effective correctional counselling is relationship building. Specifically, this refers to building a positive relationship in a treatment/therapeutic context that creates a setting where intervention

skills can be more effective. Indicators of a positive relationship include, but are not limited to: trust, empathy, encouragement, warmth, openness and respect. Relationship building can occur through the use of a number of skills: (1) role clarification (e.g., explanation of their role with an emphasis on helper role); (2) agreement on goals (e.g., mutually agreed upon goals and collaborative efforts regarding tasks to meet goals); (3) active listening (e.g., includes attentive listening and respectful responding); and, (4) effective feedback (e.g., providing the other person with information you have observed about them in a mirror-like manner).

A positive relationship provides a context where other counselling techniques (e.g., reinforcement and disapproval) will have more influence. For example, if mutual respect or trust is lacking in a relationship, a service provider's disapproval of a procriminal behaviour is unlikely to have an impact on the client. However, if there is respect and trust in the relationship, effective disapproval is more likely to resonate with the client (Andrews & Bonta, 2006).

### **Structuring**

The second principle of effective correctional counselling involves the appropriate structuring of a session. This includes the use of effective strategies such as: (1) Check-in (e.g., general greeting, checking in on acute/crisis needs using open-ended questions); (2) Review (i.e., a brief review of last session); (3) Assigning and discussing homework (e.g., a review of homework assigned in last session and providing a clear, to-do homework assignment for the next session); (4) Global session structure (e.g., ability of service provider to maintain control and focus of the session); (5) Direction of influence (e.g., consistency and influence in the prosocial direction); (6) Intervention

targets (e.g., choosing a need and collaboratively targeting that need with intervention techniques in-session); and, (7) Prioritizing needs (e.g., involves the appropriate prioritization of criminogenic needs, particularly those related to underlying attitudes regarding criminality).

### **Behavioural Techniques**

The third principle of effective correctional counselling involves the use of effective behavioural techniques in order to help the client modify his/her behaviour. These behavioural techniques include: (1) Effective modeling (e.g., service provider demonstrates a prosocial behaviour to his/her client); (2) Effective reinforcement (e.g., the expression of support as well as the use of additive and subtractive rewards for a prosocial behaviour); (3) Effective disapproval (e.g., use of non-supportive expressions and explicitly linking them to the procriminal behaviour or attitude); (4) Effective problem solving (e.g., consists of problem formulation, brainstorming, choosing and implementing alternatives, and monitoring solutions); (5) Self management skills (e.g., awareness of how thoughts lead to behaviours, the importance for rewarding oneself for prosocial behaviour); (6) Use of rehearsal strategies (e.g., use of role-playing, homework, or practicing skills in order to teach a client a new skill).

### **Cognitive Techniques**

Similar to the behavioural techniques, the next principle of effective correctional counselling involves the use of effective cognitive techniques in order to help the client modify his/her behaviour by way of using techniques to teaching the client about the thought-behaviour link. These cognitive techniques include: (1) Targeting procriminal attitudes (e.g., involves the identification of specific attitudes and discussions regarding

how the attitude influences the client's criminal behaviour); (2) Behaviour sequence (e.g., exercise to demonstrate that inside cues are what lead to behaviour and that the client is in control of his/her inside cues, which shows that they have control over their behaviour and consequences); and, (3) Cognitive restructuring (e.g., teaching clients to recognize thoughts that put them at risk for risky behaviour and replace those thoughts with realistic prosocial thoughts).

Although there is a wealth of literature in the criminal justice area supporting the principles of risk, need and responsivity and their relationship with offender outcomes, research on the relationship between measures of alliance and their predictive ability with criminal justice outcomes is limited.

### **Purpose of Present Study**

Given that approximately 80% of the adult correctional population is supervised in the community, it is important to explore "what works" in the way of rehabilitative techniques for offenders on community supervision (Andrews & Bonta, 2006).

Depending on the area of literature that is being consulted, the role and influence of positive relationships on treatment outcomes is vastly different. The main contention of the therapeutic alliance literature is that fostering a positive relationship is the most important factor when treating patients of all kinds, regardless of treatment modality or setting (Bordin, 1979; Elvins & Green, 2008; Frank & Frank, 1991; Martin et al., 2000; Safran & Murrin, 1995).

Some researchers argue that traditional alliance concepts and relationship measures developed on voluntary therapy clients do not apply to clients in mandated treatment settings (e.g., probation) given the differential outcomes of treatment and the

issue of the dual-role (Skeem et al., 2007). This perspective led to the development of the Dual-role Relationship Inventory – Revised, a specialized assessment of relationship quality for treatment with involuntary clients.

The third perspective emerged from the criminal justice literature, stating that in order to effectively achieve the desired outcomes with criminal justice clients (i.e., reduce recidivism, achieve clinical improvement for areas related to offending), evidence-based intervention techniques centred around identified risk/needs, must be used. Furthermore, in order to maximize the effectiveness of these evidence-based techniques, they should be delivered in the context of a positive relationship. However, research in the criminal justice field has indicated that a positive therapeutic relationship alone is *not sufficient* for reducing recidivism (Andrews & Bonta, 2006) but that it is important to focus on structuring, cognitive techniques and behavioural techniques.

### **Exploratory Approach & Hypothesis**

Based on the competing and conflicting evidence from each perspective in support of the predictive ability of each measure (WAI, DRI – R and ECC), the present study will use an exploratory approach to analysing the data. Although there is theoretical support for the DRI – R and ECC, there is limited empirical research upon which to base any hypotheses regarding which measure is most predictive of outcomes for the present offender sample. Alternatively, there is a wealth of research supporting the ability of the WAI to predict outcomes for clients in therapeutic settings; however, this measure has not been validated with criminal justice samples. Therefore, it can only be hypothesized that for each measure, higher scores will be predictive of better outcomes (i.e., fewer

missed appointments, decreases in severity of criminogenic needs and lower odds of recidivism).

### **Research Questions**

The purpose of the present study is to address the discord between these conflicting views by testing the predictive ability of a measure from each of the three perspectives. Given the exploratory nature of the present study, the following are the two main research questions that will be explored:

- 1) Which measure (i.e., WAI, DRI – R, ECC) is most predictive of criminal justice outcomes (i.e., number of missed supervision appointments, changes in severity of criminogenic needs and recidivism) for a sample of offenders on community supervision?
- 2) Which components of each measure (e.g., Bond, Trust, Structure etc.) are most predictive of criminal justice outcomes for offenders on community supervision?

### **Study Overview**

In order to answer the research questions, it was critical to closely examine officer-client interactions. The present research project used an existing data source from a national study conducted by the Department of Public Safety that evaluated a training initiative for probation officers to improve their interactions with clients. This data source provided digitally recorded supervision sessions between probation officers (PO) and their clients. These recorded sessions were critical for this project as they were used to evaluate the officer-client relationship using the three measures (WAI, DRI – R and ECC).

Briefly, the data for this research was selected from a subset of cases from a national study that implemented and examined a strategic training initiative for community supervision (STICS) with a sample of probation officers and probationers. Probation officers from the three Canadian provinces (i.e., British Columbia, Saskatchewan and Prince Edward Island) were informed of the STICS project via email by their managers regarding an opportunity to participate in a three-day research project on effective correctional techniques. Probation officers were informed that their participation would be voluntary, require some data collection and that they would be randomly assigned to the experimental group (i.e., receiving the full three-day STICS training) or the control group (i.e., receiving only a half-day of STICS training). In an effort to minimize attrition and maintain motivation of the control group, they were promised that they would receive the full three-day training if the outcomes of the study showed positive results.

In order to have sufficient power to conduct analyses with the experimental group, random assignment to the experimental and control groups was done using a 60:40 split, respectively. This was done as it was expected that the attrition rate in the experimental group would be greater than in the comparison group. Probation officer motivation was held constant by only recruiting probation officers who volunteered for the project. Although this level of motivation may not be representative of probation officers in general, the element of motivation was a characteristic that the researchers sought to incorporate (i.e., staff who were amenable to training/change). To ensure that the probation officers were willing to adhere to the data collection component of the study, they were asked to submit audiotaped sessions with one client before the

commencement of training. These tapes would also serve as a baseline measure of the PO-client interactions.

Regarding the client sample, probation officers were asked to recruit a total of six new clients (four high-risk and two medium-risk clients) for the purposes of this project. Risk level was determined following validated risk-needs assessments used by each jurisdiction (i.e., Level of Service Inventory – Revised, Community Risk and Needs Assessment, and Primary Risk Assessment). Nearly all of the 143 probationers were assessed as medium (40%;  $n = 57$ ) or high-risk (55%  $n = 79$ ). Due to the assignment procedures used by a couple of probation offices in PEI, a small percentage of low-risk clients were recruited (5%;  $n = 7$ ) for the project.

Cross-jurisdictional adherence to the principles of risk, need and responsivity were assessed using data provided by the probation officers, which allowed the researchers to score 10 items from the Criminal History subscale of the Level of Service Inventory – Revised (LSI-R; Andrews & Bonta, 1995). The researchers gathered demographic and criminal history information on the participating clients multiple times over the course of the project. There were no significant differences found between the experimental and control group clients regarding demographics, risk level, or the Criminal History subsection of the LSI-R.

Probation officers were asked to keep a record of their clients' frequency of reporting by submitting reports to the research team. Probation officers were also asked to rate their clients, in terms of severity, on seven criminogenic needs (i.e., criminal personality, antisocial attitudes, procriminal associates, family/marital, employment/education, substance abuse and leisure/recreation). Assessments of needs

were conducted at intake, three and six months of supervision. Measures of compliance and criminal behaviour, based on officer ratings and reports, were provided at three and six months. To measure recidivism, the evaluation team sought official criminal history records from provincial and national sources. For a full description of the STICS project, see Bourgon, Bonta, Rugge, Scott and Yessine (2009).

## Method

### Sample

The sample for the present study consists of a total of 144 audiotaped supervision sessions between probation officers ( $n = 34$ ) and adult probationers ( $n = 72$ ) from three Canadian provinces. The audiotapes were selected from a pool of audiotapes from a larger research project conducted by the Department of Public Safety that implemented and examined a strategic training initiative for community supervision (STICS) with a sample of probation officers and probationers who volunteered to participate in the study.

The inclusion criterion for the present study required the probation officers to have submitted a minimum of two audiotaped probation sessions for each of his/her clients. Many probation officers in the STICS project only submitted one audiotape out of the three audiotapes that were requested. The criterion of two audiotapes was selected as multiple observations of a construct reduces the amount of error in measurement. The first recording represents a supervision session recorded immediately after client-intake into probation and the second recording represents a session recorded at the third month of supervision.

### Measures

**Working Alliance Inventory (WAI; Horvath & Greenberg, 1986).** The WAI is the most commonly used measure of alliance from the psychotherapy field. It consists of 36 items that are rated on a seven point Likert scale (1 = *never* to 7 = *always*) for which one can derive a total score, as well as three individual subscale scores (i.e., tasks, bonds and goals). In order to capture a number of perspectives, three rater versions of the WAI can be scored from the therapist, patient and/or observer perspective. For the present

study, given that the data is archival, only the observer version of the WAI was used (see Appendix A).

The WAI has been shown to be both reliable and possess moderate predictive validity for general therapeutic outcomes (e.g., well-being) in comparison to other measures of alliance. Depending on the review, the reliability of the WAI ranges from  $r = .85$  to  $r = .93$  (Elvins & Green, 2008; Horvath & Greenberg, 1989; Horvath & Symonds, 1991; Martin et al., 2000). More recently, a shortened version as well as a couple's version WAI has been developed (Symonds & Horvath, 2004).

**Dual-role Relationship Inventory – Revised (DRI – R; Skeem, 2004).** The DRI – R was developed to assess the quality of relationships in mandated treatment settings. The measure consists of a total of 30 items, rated on a seven point Likert scale (1 = *never* to 7 = *always*). Similar to the WAI, the DRI – R has parallel forms for probationers, probation officers and observers. For the present study, only the observer form of the DRI – R could be coded (see Appendix B).

The items of the DRI – R assess two key elements of relationship quality: (1) alliance (includes: bond, partnership and confident commitment) and (2) relational fairness (includes: respect and flexible consistency). It consists of three subscales: Caring-Fairness, Toughness and Trust. Of note, the DRI – R taps into officer empathy and prosocial modeling (Bonta, Wallace-Capretta, & Rooney, 2000; Trotter, 1999).

Regarding reliability of the scales and total scores, the DRI – R has been shown to demonstrate high internal consistency for the three subscales of Caring-Fairness ( $\alpha = .96$ ), Toughness ( $\alpha = .90$ ), and Trust ( $\alpha = .87$ ), as well as for the total scores ( $\alpha = .95$ ). It

has also demonstrated moderate inter-item correlations and strong predictive validity for probation violations and revocations (Skeem, et al., 2007).

**Effective Correctional Counselling (ECC; Bourgon, Bonta, Rugge, Scott & Yessine, 2009).** The ECC coding form was developed for the STICS project to assess the skills, intervention techniques, and behaviours exhibited by the probation officers. The ECC coding form is a 24-item measure, coded on an eight-point Likert scale (0 to 7); higher scores signify higher quality skills/techniques. The coding form is based on the principles of risk, need and responsivity (RNR) and the four main constructs of effective correctional counselling. These constructs include: (1) structuring, (2) relationship-building, (3) behavioural techniques, and (4) cognitive techniques (see Appendix C).

The first construct, structuring skills, includes eight items that assess the quality of the probation officer's ability to structure a session (e.g., check-in, review, discussion of previous homework). The second construct, relationship-building skills, contains five items, which includes items assessing indicators, such as the quality of role clarification and active listening skills. The third construct, behavioural techniques, uses seven items that evaluate techniques such as general modelling and effective reinforcement. Finally, the fourth construct, cognitive techniques, uses four items that evaluate the degree to which probation officers target procriminal attitudes and use cognitive restructuring.

The 24 items of the ECC measure were grouped a priori into the four constructs. Based on results from the STICS projects, inter-rater reliability on a sample of 30 sessions for the 24 items was a mean ICC of .922 ( $SD = .086$ ) with a range of .707 to 1.0. The mean percent agreement +/-1 point on these items was 98.3% ( $SD = 2.20$ ) with a range of 93.3% to 100%. For the five constructs (Structuring Skills, Relationship

Building Skills, Cognitive Techniques, Behavioural Techniques, and Effective Correctional Skills) the mean ICC was .960 ( $SD = .027$ ) with a range of .931 to .990.

The internal consistency was assessed using Cronbach's alpha. Overall, the constructs demonstrated small to moderate internal consistency (Structuring Skills [ $\alpha = .806$ ], Relationship Building Skills [ $\alpha = .702$ ], Cognitive Techniques [ $\alpha = .706$ ], and the Effective Correctional Skills [ $\alpha = .806$ ] and, Behavioural Techniques [ $\alpha = .561$ ]).

**Criminal History Subscale of Level of Service Inventory – Revised (Andrews & Bonta, 1995).** The Criminal History subcomponent is one of the ten subscales of the LSI-R. The LSI-R is one of the most frequently used risk assessments with general offenders. It is a theoretically-derived, third generation risk assessment developed out of the Level of Supervision Inventory (LSI). Currently, it consists of 54-items which primarily measure dynamic (changeable) risk factors. There have been numerous validation studies of LSI-R which have demonstrated its ability to predict future criminal behaviour with a variety of offender types. For general recidivism, the predictive validity of the LSI-R has been shown to be approximately a mean  $AUC = .71$  ( $r = .36$ ); for violent recidivism it has been shown to be approximately  $AUC = .64$  ( $r = .25$ ; Andrews & Bonta, 2006). Compared to other risk assessment instruments (e.g., PCL-R, Wisconsin Scale etc.), numerous studies have shown the LSI-R to possess similar or stronger predictive ability for a variety of offender groups (Kroner & Mills, 2001; Raynor, Kynch, Roberts, & Merrington, 2000).

The Criminal History subscale consists of ten items that measure various aspects of an offender's criminal history (e.g., any prior adult convictions). For the purposes of the STICS project, the Criminal History subscale was coded for each offender, as

information from each of the different risk assessments (i.e., LSI-R, CRNA, and PRA) permitted a full coding of this subcomponent (see Appendix D).

**Officer Assessment of Criminogenic Needs (Bourgon, Bonta, Rugge, Scott and Yessine, 2009).** For the STICS project, the probation officers were asked to assess each of their clients on the severity they presented on each of the seven criminogenic needs (i.e., personality, attitudes, peers, family/marital, employment/education, substance abuse, and leisure/recreation). Severity was determined by the officers based on the offenders' risk assessment and information obtained during supervision sessions. Officers were asked to rate clients, using a seven-point scale (0 = *Very Satisfactory* to 6 = *Very Problematic*), at intake, three months and finally at six months of supervision. The purpose of these assessments was to measure the clients' clinical changes regarding factors related to criminal behaviour. For example, if a client was rated as '*somewhat problematic*' regarding his/her substance abuse issues at intake and then '*somewhat satisfactory*' at the six month assessment, this client has demonstrated clinical improvement regarding substance abuse. For the present study, a total score was calculated for each assessment by summing the severity scores for each of the seven criminogenic needs. Offender changes in criminogenic needs from intake to three months and intake to six months of supervision served as a second criminal justice outcome measure (see Appendix E).

## **Materials**

The audiotaped sessions were stored as digital files on a secure laptop computer. The three measures (i.e., WAI – Observer Version, DRI – R – Observer Form and ECC),

were coded by the author using a paper-and-pencil method. The second coder, who served as interrater followed the same coding procedures.

The probation officer's assessment of client compliance with supervision (i.e., number of missed supervision appointments) and severity of criminogenic needs were coded from reports submitted by the probation officers during the six month supervision period. Recidivism (i.e., any new conviction) was coded from official national criminal history records (CPIC) using a paper-and-pencil method. The data was entered and analyzed using Version 17.0 of the Statistical Package for the Social Sciences (SPSS).

### **Outcome Variables**

In order to explore the research questions, the present study looked at three outcome variables: (1) number of missed supervision appointments; (2) changes in severity of seven criminogenic needs; and, (3) recidivism.

**Client Compliance with Supervision (Number of Missed Appointments).** For the purposes of the present study, the number of missed appointments was examined from the date of the client's first recorded session to six months and from the date of the first tape to twelve months of supervision. This outcome was used as a crude measure of client compliance with supervision. Based on reports from the probation officers, each client received a tally of the number of appointments they failed to attend without permission/valid reason from his/her probation officer.

**Changes in Severity of Criminogenic Needs.** Changes in the severity of the clients' criminogenic needs were used as a second criminal justice outcome measure. The changes in severity of criminogenic needs were captured at two points in time. For the present study, difference scores between the total needs severity score at intake and three

months represent the changes in the severity of needs in the first three months of supervision. Also difference scores between the total needs severity score at intake and six months were calculated to represent changes in severity of needs during the first six months of supervision. The predictive validity of the three measures (i.e., WAI, DRI – R, and ECC) were tested with the two sets of differences scores: changes in needs between intake and three months of supervision, as well as changes in the severity of needs between intake and six months of supervision.

**Recidivism.** Recidivism, defined as any new conviction, was coded as a dichotomous outcome (0 = no recidivism, 1 = recidivism) using national (CPIC) criminal history records. For each case, the following recidivism information was coded: start date of follow up, end date of follow-up, and the date and sanction of first conviction. Recidivism information was obtained for both a one year as well as a two year follow-up.

### **Procedure**

The digitally audiotaped interviews were stored and played from a secure laptop computer. The sessions were transcribed and coded by the author using the Working Alliance Inventory (Observer Version), the Dual-role Relationship Inventory – Revised (Observer Form), and Effective Correctional Counselling measure immediately following listening to each audiotape. To evaluate interrater reliability, a second rater scored the three measures on a random sample of 20 sessions. Prior to scoring these sessions, the second rater was trained on scoring the instruments by practicing and receiving feedback on 5 sessions sampled from the excluded audiotapes of the larger STICS dataset.

Documentation provided by the probation officers (e.g., criminal history records, risk/need assessments, probation order etc.) was reviewed to gather information such as,

client demographics (i.e., age, sex, ethnicity etc.), risk levels (low, medium and high), criminogenic need areas (e.g., substance abuse, family/marital etc.), and number of missed appointments.

### **Data Analysis**

All of the data was entered into an SPSS database and cleaned for quality assurance purposes. Given that each PO-client pairing had two audiotaped sessions, each of the three measures was averaged across the two sessions for each PO-client pairing. An average score was calculated for the individual questions, subscales, and total scores for each of the three measures. Data analyses were conducted on the average level of the scores, as well as on the single-session scores.

### **Sample Description**

Descriptive statistics of the demographic variables of the sample were used to provide basic information on the probationer sample. This included demographic, risk/need information, relationship measure scores and outcome measure information.

### **Relationship Measures**

For the measures (i.e., WAI, DRI – R and ECC), each client had two sets of data, one for the first recorded session (tape 1) and another for the second recorded session (tape 2). Each item was averaged across the two observations for each officer-client pair. These average scores were the focus for all subsequent analyses in order to enhance the reliability of the measures; however, single-session analyses are provided in the appendices for reference.

**Interrater reliability.** Intraclass Correlation Coefficient (ICC) as well as percentage of agreement (within one deviation score) were used to evaluate the interrater reliability/agreement for each of the three measures items, subscales, and total scores.

**Internal Consistency.** Cronbach's alpha was used to evaluate the internal consistency of the scales and subscales. This analysis was done in order to reveal the strength of the internal reliability and the fit of the conceptual frameworks that underlie each measure.

**Convergent Validity.** To assess the convergent validity of the three relationship measures and their respective scales, Pearson's  $r$  coefficients were calculated. The purpose of this analysis was to provide an indication of any overlap between constructs.

**Predictive Validity.** To explore the relationship between the three measures and the three outcomes, correlations and ROCs (for the dichotomous outcomes) were conducted. Preliminary regression (logistic and multiple regression) analyses were conducted on each of the measures and subscales using the forced entry method. Based on the outcomes of the correlations, ROCs and regression analyses, final forward-stepping regression analyses were conducted on the total scores and subscales in order to determine which component of each of the three measures was most predictive of the outcomes. Multiple regression was used for the continuous outcomes (i.e., number of missed appointments and changes in severity of criminogenic needs) and logistic regression was used for the dichotomous outcome (i.e., recidivism).

## Results

A total of 144 audiotaped interviews between probation officers ( $n = 34$ ) and probationers ( $n = 72$ ) were coded using the Working Alliance Inventory (WAI), Dual-role Relationships Inventory – Revised (DRI – R) and Effective Correctional Counseling (ECC) measures. Half of the audiotapes represent probation sessions occurring at the beginning of the client's supervision period (tape 1) and half represent probation sessions occurring three months after the first recording (tape 2). Aggregate level analyses were conducted on the average score of each of the three measures (i.e., WAI, DRI – R and ECC) across tapes 1 and 2. The focus of the present study is on the aggregate level analyses; however, single-session analyses were conducted on each tape separately and have been included as Appendices G and H for reference.

### Descriptive Statistics

General descriptive statistics (e.g., age, gender, risk level) for the sample of probationers are presented in Table 1. The majority of the client sample consists of Caucasian (75%) males (83.3%) with an average age 35.18 ( $SD = 10.66$ ). Most of the clients were on probation for an offence of a violent or sexual nature (65.3%) and have been assessed as posing a high risk to recidivate (51.4%).

The outcome variables of interest for this study were explored at various points in time. In order to assess the relationship between the measures and an indicator of compliance with probation, the number of missed supervision appointments was recorded at six and 12 months following the commencement of supervision for each client. On average, clients missed 2.11 ( $SD = 2.26$ ) appointments by six months and 3.83 ( $SD = 3.72$ ) appointments by 12 months. The second outcome of interest was the change in

severity of the clients' criminogenic needs, as assessed by his/her probation officer at three and six months of supervision. Each of the seven criminogenic needs was rated on a seven-point scale and the clients were given a total score. Difference scores between intake and three month assessments of the clients ( $n = 69$ ) revealed an average *decrease* in severity of criminogenic needs of 5.22 points ( $SD = 5.99$ ; range = -23.00 to 7.00). At six months, the difference scores revealed an average *decrease* in severity of needs of 7.72 points ( $SD = 7.58$ ; range = -27.50 to 7.00). Recidivism information at one and two years following the commencement of supervision was obtained from national CPIC records. For the present sample, the recidivism rate at one year was 13.9% ( $n = 10/72$ ) and 19.6% ( $n = 11/56$ ) at two years. Finally, the average length of the audiotapes for the present study was 29 minutes and 41 seconds ( $SD = 9:53$ ; range = 15:08 to 1:06:28). Descriptive statistics for the mean and standard deviation of scores for each of the measures are provided in Table 2.

Table 1.

*Descriptive Statistics of Probationer Sample.*

Factor/Level		% (n)
Gender		
	Male	83.3 (60)
	Female	16.7 (12)
Risk Level		
	Low	5.6 (4)
	Medium	43.1 (31)
	High	51.4 (37)
Race		
	Caucasian	75.0 (54)
	Aboriginal	22.2 (16)
	Other	2.8 (2)
Employment		
	Unemployed/Pension	51.4 (37)
	Part/Full-time/Student	48.6 (35)
Present Offence Type		
	Violent or Sexual	65.3 (47)
	Property or Driving	34.7 (25)

Table 2.

*Means (M) and Standard Deviations (SD) for Subscale and Total Scores on the WAI, DRI – R and ECC Measures.*

Measure/Subscale		<i>M</i>	<i>SD</i>
WAI			
	Task	46.29	8.80
	Bond	50.71	8.72
	Goal	45.74	8.53
	Total	142.38	25.27
DRI – R			
	Caring-Fairness	87.20	13.35
	Trust	21.74	3.67
	Toughness	28.67	3.79
	Total	137.63	18.61
ECC			
	Structure	13.40	6.05
	Relationship	13.29	2.52
	Behavioural	10.56	3.24
	Cognitive	1.82	3.02
	Total	39.07	11.83

*Note.* Working Alliance Inventory (WAI), Dual-role Relationships Inventory – Revised (DRI – R), Effective Correctional Counseling (ECC).

## Reliability Analysis

In order to assess the internal consistency of each measure, Cronbach's alpha was calculated for the aggregate of the tapes (see Table 3). The WAI and DRI – R subscales and total scores demonstrated excellent internal consistency, all of which were over Cronbach's  $\alpha = .90$ . The internal consistency of the ECC subscales and total score were all higher than the generally acceptable cutoff of Cronbach's  $\alpha = .600$  to  $.700$ , with the exception of the Behavioural Techniques (Cronbach's  $\alpha = .449$ ) and Relationship (Cronbach's  $\alpha = .450$ ) subscales (Nunnally, 1978).

Table 3.

*Reliability Statistics (Internal Consistency) of Measures using Cronbach's Alpha ( $\alpha$ ).*

Measure/Subscales	Cronbach's Alpha $\alpha$	# Items
WAI		
Task	.974	12
Bond	.964	12
Goal	.961	12
Total	.986	36
DRI – R		
Caring-Fairness	.976	20
Trust	.952	5
Toughness	.885	5
Total	.980	30
ECC		
Structure	.787	8
Relationship	.450	5
Behavioural	.449	7
Cognitive	.787	4
Total	.804	24

*Note.* WAI: Working Alliance Inventory. DRI – R: Dual-role Relationships Inventory – Revised. ECC: Effective Correctional Counseling.

### **Convergent Validity**

Pearson's correlation coefficient was calculated to explore the relationships between the measures (see Table 4). Overall, the WAI and DRI – R were significantly correlated on total scores and all subscales. Of note, there was a strong correlation between the Caring-Fairness and Trust subscales of the DRI – R with the Bond subscale of the WAI ( $r = .848$  and  $.888$ , respectively).

The ECC and WAI measures were significantly correlated on all subscales, with the exception of the Cognitive and Behavioural Techniques subscales. The Cognitive Techniques subscale was not significantly related to the Bond and Goal subscales of the WAI. Similarly, the Behavioural Techniques subscale of the ECC was not significantly correlated with any of the WAI subscales or total score. As for the relationship between the ECC and DRI – R measures, the Caring-Fairness and total score for the DRI – R were significantly correlated with all subscales of the ECC. Of note, there was a negative relationship between the Behavioural Techniques subscale of the ECC with the Trust ( $r = -.013, p > .05$ ) and Toughness ( $r = -.044, p > .05$ ) subscales of the DRI – R, however these differences did not reach significance.

Table 4.

*Correlation (r) between Totals and Subscales of WAI, DRI – R and ECC Measures.*

Measures/Subscale	Measures							
	Task	WAI			Total	Caring-Fairness	DRI – R	
	Bond	Goal		Trust			Toughness	
<b>DRI – R</b>								
Caring-Fairness	.702**	.848**	.680**	.773**				
Trust	.764**	.888**	.746**	.837**				
Toughness	.616**	.635**	.612**	.646**				
Total	.779**	.913**	.759**	.850**				
<b>ECC</b>								
Structure	.347**	.301*	.332**	.338**	.481**	.184	.371**	.457**
Relationship	.464**	.369**	.464**	.464**	.563**	.236*	.282*	.507**
Behavioural	.178	.114	.152	.159	.351**	-.013	-.044	.258*
Cognitive	.233*	.223	.201	.234*	.317**	.128	.232	.300*
Total	.385**	.321**	.362**	.375**	.543**	.174	.321**	.489**

*Note.* WAI: Working Alliance Inventory. DRI – R: Dual-role Relationships Inventory – Revised. ECC: Effective Correctional Counseling.

\*  $p < .05$  \*\*  $p < .01$

### **Interrater Reliability**

Interrater reliability was assessed by comparing the ratings of the main author to those of an independent second coder, a research analyst from the Corrections Research Unit of Public Safety Canada. A total of 21 audiotapes were selected using the SPSS random selection procedure. The independent coder was trained by the main author on the three measures using five practice audiotapes sampled from the larger STICS project.

Single measure intraclass correlation coefficients (*ICC*) were used to compare the absolute agreement on the coding of the individual questions, subscales and total scores for each of the measures between the two coders. Given that each question was coded on a seven-point scale, interrater reliability was also examined by calculating the percentage

of agreement within one deviation point between the two coders. ICC's and percentage of agreement at the item level are provided in Appendix F for reference (see Table 17, Appendix F).

Based on the total scores, the *ICCs* for the WAI and DRI – R were very low (*ICC* = 0.355 and 0.256, respectively); however, the interrater reliability on the ECC measure was very high (*ICC* = 0.998). An examination of the percentage of agreement between coders on the WAI, DRI – R and ECC revealed that there was moderate to almost perfect agreement between the coders on the measures within one point (66.01%, 78.11% and 98.59%, respectively). Overall, the ECC showed substantially higher interrater reliability than the other measures, followed by the DRI – R and then the WAI.

Interrater reliability on the scoring of the subscales and total measures was also examined. Given that the subscales and total scores are continuous in nature, Pearson's correlation coefficients were used in addition to *ICCs* in order to explore the relationship between the scores assigned by the raters for each scale (see Table 5). For the WAI, there was a significant interrater relationship for the Bond ( $r = .488, p < .05$ ) and Total score ( $r = .443, p < .05$ ). For the DRI – R, there was a significant correlation between the raters on their coding of the Caring-Fairness ( $r = .480, p < .05$ ) subscale items. Of note, the Toughness subscale of the DRI – R showed the highest interrater correlation of all three measures ( $r = .825, p < .01$ ). For the ECC measure, there was a significant interrater correlation between the coding of the two raters for all subscales and the total score.

Table 5.

*Correlations (r) and Intraclass Correlation Coefficients (ICC) for Totals and Subscales of WAI, DRI – R and ECC Measures.*

Measure/Subscale		<i>r</i>	ICC Single Measure
WAI			
	Task	.337	.287
	Bond	.488*	.320
	Goal	.432	.395
	Total	.443*	.355
DRI – R			
	Caring-Fairness	.480*	.429
	Trust	.057	.043
	Toughness	.825**	.560
	Total	.315	.256
ECC			
	Structure	.770*	.930
	Relationship	.708**	.980
	Behavioural	.527**	.932
	Cognitive	.764**	.976
	Total	.745**	.998

*Note.* WAI: Working Alliance Inventory. DRI – R: Dual-role Relationships Inventory – Revised. ECC: Effective Correctional Counseling.

\*  $p < .05$  \*\*  $p < .01$

### **Test-Retest Reliability**

The relationship between scores for tape one and tape two was examined for test-retest reliability purposes (see Table 6). The results revealed that all of the subscale and total scores from each measure for tapes one and two on were significantly positively correlated, with the exception of the Toughness subscale of the DRI – R ( $r = .121, p > .05$ ).

Table 6.

*Correlation (r) of Measures between Tape 1 and Tape 2.*

Measure/Subscale		<i>r</i>
WAI	Task	.455**
	Bond	.541**
	Goal	.386**
	Total	.467**
DRI – R	Caring-Fairness	.563**
	Trust	.573**
	Toughness	.121
	Total	.583**
ECC	Structure	.524**
	Relationship	.251*
	Behavioural	.272*
	Cognitive	.440**
	Total	.549**

*Note.* WAI: Working Alliance Inventory. DRI – R: Dual-role Relationships Inventory – Revised. ECC: Effective Correctional Counseling.

\*  $p < .05$  \*\*  $p < .01$

### **Preliminary Exploratory Analysis of Predictive Validity**

In order to explore the relationship between the three measures and the three criminal justice outcomes of interest (i.e., number of missed appointments, changes in severity of criminogenic needs, and recidivism), preliminary exploratory analyses were conducted. For all outcomes, univariate correlations between the measures and the outcomes were conducted.

Due to the relatively low base-rate of recidivism at one and two years, a receiver operating characteristic (ROC) analysis was conducted to explore the predictive accuracy of the each measure to predict the dichotomous outcome of recidivism at one and two

years. The use of ROCs when low base rates are present facilitates a more stable comparison between the false-positives and false-negatives as compared to other measures of predictive accuracy (Rice & Harris, 1995). Finally, preliminary logistic and multiple regressions were conducted on the dichotomous (recidivism) and continuous outcomes (missed appointments and changes in severity of needs), respectively.

### **Number of Missed Supervision Appointments**

As a basic indicator of general compliance with supervision, the relationship between the three measures (WAI, DRI – R, and ECC) and the number of missed supervision appointments for each client at six and 12 months following the commencement of the supervision order was explored. The results of the correlational analysis revealed that there was no significant relationship between any of the measures and number of missed appointments at either six or 12 months (see Table 7). The Structure subscale of the ECC was the only measure that approached significance, revealing a negative correlation between the quality of Structure and the number of missed appointments at six months ( $r = -.192, p < .10$ ).

Table 7.

*Correlation ( $r$ ) between Measures (Totals and Subscales) and Number of Missed Appointments at Six and 12 Months.*

Measure/Subscale	Number of Missed Appointments	
	6 months ( $N = 60$ )	12 months ( $N = 60$ )
<b>WAI</b>		
Task	-.057	-.048
Bond	-.059	-.016
Goal	-.118	-.090
Total	-.071	-.043
<b>DRI – R</b>		
Caring-Fairness	-.098	-.016
Trust	.001	-.027
Toughness	.115	.094
Total	-.048	.001
<b>ECC</b>		
Structure	-.192	-.038
Relationship	-.026	.145
Behavioural	-.005	.113
Cognitive	-.110	-.109
Total	-.127	.024

*Note.* WAI: Working Alliance Inventory. DRI – R: Dual-role Relationships Inventory – Revised. ECC: Effective Correctional Counseling.

The data were also analyzed with four separate multiple regression analyses using the enter method. In the first regression, all of the subscales from each of the three measures were entered into the model as predictors, with the number of missed appointments at six months as the outcome measure. In the second regression, all of the total scores from each of the three measures were entered into the model as predictors, with the number of missed appointments at six months as the outcome measure. The results of the regression analyses showed a poor fit of the models to the data and the overall relationship between the measures and number of missed appointments was not

significant for both the subscales ( $R^2 = 19.5\%$ ;  $F_{10,49} = 1.09$ ,  $p > .05$ ) and total scores ( $R^2 = 2.1\%$ ;  $F_{3,56} = .364$ ,  $p > .05$ ) at six months (see Table 8).

The same procedure was used for the outcome measure of number of missed appointments at 12 months for both the subscales and total scores. As was found for the six month outcome, the results of the two regression analyses showed that the models were a poor fit to the data for the subscales ( $R^2 = 17.5\%$ ;  $F_{10,49} = .891$ ,  $p > .05$ ) and total scores ( $R^2 = .6\%$ ;  $F_{3,56} = .105$ ,  $p > .05$ ) at 12 months (see Table 9). Only the Goal subscale of the WAI measure was significantly predictive of the number of missed appointments at six months ( $\beta = -1.230$ ,  $t(52) = -2.02$ ,  $p < .05$ ).

Table 8.

*Preliminary Multiple Regression on Subscales of Measures (WAI, DRI – R, and ECC) and Number of Missed Appointments at Six and 12 Months.*

Measures		Number of Missed Appointments					
		6 Months			12 Months		
		B	SE B	$\beta$	B	SE B	$\beta$
WAI							
	Task	.240	.155	.920	.303	.266	.704
	Bond	.021	.116	.084	.168	.197	.411
	Goal	-.322	.160	-1.230*	-.483	.270	-1.126
DRI – R							
	Caring-Fairness	-.042	.056	-.251	-.078	.095	-.283
	Trust	.105	.206	.173	-.016	.347	-.016
	Toughness	.171	.109	.294	.258	.194	.257
ECC							
	Structure	-.127	.088	-.287	-.100	.149	-.139
	Relationship	.219	.202	.247	.512	.350	.342
	Behavioural	.076	.121	.113	.178	.218	.158
	Cognitive	-.002	.153	-.002	-.159	.266	-.110

*Note.* WAI: Working Alliance Inventory. DRI – R: Dual-role Relationships Inventory – Revised. ECC: Effective Correctional Counseling. Six month missed appointments  $R^2 = .195$ . For 12 month missed appointments,  $R^2 = .175$ .

\*  $p < .05$

Table 9.

*Preliminary Multiple Regression on Total Scores of Measures (WAI, DRI – R, and ECC) and Number of Missed Appointments at Six and 12 Months.*

Measures		Number of Missed Appointments					
		6 Months			12 Months		
		B	SE B	$\beta$	B	SE B	$\beta$
WAI	Total	-.010	.022	-.117	-.019	.036	-.133
DRI – R	Total	.013	.031	.111	.020	.053	.101
ECC	Total	-.029	.033	-.138	.008	.055	.023

*Note.* WAI: Working Alliance Inventory. DRI – R: Dual-role Relationships Inventory – Revised. ECC: Effective Correctional Counseling. Six month missed appointments  $R^2 = .021$ . For 12 month missed appointments,  $R^2 = .006$ .

### **Changes in Severity of Criminogenic Needs**

The second outcome measure of interest was changes in severity of criminogenic needs from intake (commencement of probation) to three months of supervision, as well as from intake to six months of the supervision period. Unfortunately, there was a large amount of missing data for the six month outcome ( $n = 49$ ), representing an attrition rate of 31.94% (23/72). Missing data was random and due to an inability to obtain data from the probation officers (PO) for various reasons (e.g., unable to contact POs, inconsistent record keeping within and across individual POs etc.). Missing data was dealt with by imputing the missing values of the six month assessment with the need change scores from the three month assessment (Tabachnick & Fidell, 2007). Analyses were run both with and without the missing data replacement; the results presented are those obtained from analyses conducted with the imputed data. The results of the analyses conducted

without the missing data replacement were consistent in direction and significance as with those obtained with the missing data replacement. However, the magnitude of the effects was consistently lower using the outcome with missing data replacement; therefore, the analyses reported are those using the more conservative estimate with the missing data replacement.

Table 10 shows the correlations between the three measures and the changes in severity of the criminogenic needs from intake to three and six months of supervision. It was found that all of the WAI and DRI – R totals and subscales had a significant negative relationship with changes in severity of criminogenic needs, with the exception of the Toughness subscale of the DRI – R for both the three ( $r = -.089, p > .05$ ) and six month outcomes ( $r = -.273, p > .05$ ). For the ECC measure, only the Structure subscale was significantly related to changes in severity of needs at the six month assessment ( $r = -.292, p < .05$ ).

Table 10.

*Correlation (r) between Measures (Totals and Subscales) and Change in Severity of Criminogenic Needs at Three and Six Months.*

Measure/Subscale		Change in Severity of Criminogenic Needs	
		3 Months (N = 69)	6 Months (N = 69)
WAI			
	Task	-.288*	-.412**
	Bond	-.301*	-.448**
	Goal	-.284*	-.437**
	Total	-.310**	-.456**
DRI – R			
	Caring-Fairness	-.277*	-.376**
	Trust	-.283*	-.479**
	Toughness	-.089	-.273
	Total	-.272*	-.398**
ECC			
	Structure	-.145	-.292*
	Relationship	-.076	-.173
	Behavioural	-.095	.075
	Cognitive	-.178	-.169
	Total	-.164	-.204

*Note.* WAI: Working Alliance Inventory. DRI – R: Dual-role Relationships Inventory – Revised. ECC: Effective Correctional Counseling.

\*  $p < .05$  \*\*  $p < .01$

As was conducted with the outcome of number of missed appointments, four separate multiple regression analyses were conducted using the subscales and totals of the three measures (WAI, DRI – R and ECC) as predictors of changes in severity of criminogenic needs from intake to three months and from intake to six months of supervision (see Table 11). In the first regression, all of the subscales were entered into the model as predictors, with the changes in severity of needs between intake and three months of supervision as the outcome measure. In the second regression, all of the total scores were entered into the model as predictors, with the changes in severity of

criminogenic needs from intake to six months of supervision entered as the outcome measure. The regression analyses for the subscales and total scores both revealed that the regression was not significant; furthermore, none of the subscales or total scores approached significance (see Table 12).

As was conducted with the three month outcome, two separate multiple regression analyses were conducted on the changes in severity of criminogenic needs scores from intake to six months of supervision. Although the regression models for the subscales ( $R^2 = 20.8\%$ ;  $F_{10, 58} = 1.52$ ,  $p > .05$ ) and total scores ( $R^2 = 9.8\%$ ;  $F_{3, 65} = 2.35$ ,  $p > .05$ ) were not significant, the Toughness subscale of the DRI – R was significantly predictive of changes in the severity of criminogenic needs at the six month assessment ( $\beta = .357$ ,  $t(58) = 2.09$ ,  $p < .05$ ).

Table 11.

*Preliminary Multiple Regression on Subscales of Measures (WAI, DRI – R and ECC) and Changes in Severity of Criminogenic Needs at Three and Six Months.*

Measure/Subscale	Change in Severity of Criminogenic Needs					
	3 Months			6 Months		
	B	SE B	$\beta$	B	SE B	$\beta$
<b>WAI</b>						
Task	.012	.351	.018	.346	.429	.404
Bond	-.003	.295	-.005	.085	.360	.099
Goal	-.166	.360	-.238	-.511	.440	-.579
<b>DRI – R</b>						
Caring-Fairness	-.030	.134	-.066	-.061	.164	-.108
Trust	-.399	.480	-.247	-.908	.587	-.444
Toughness	.400	.274	.258	.700	.336	.357*
<b>ECC</b>						
Structure	-.084	.203	-.084	-.320	.248	-.254
Relationship	.341	.451	.141	.418	.552	.137
Behavioural	-.152	.300	-.080	.200	.368	.083
Cognitive	-.158	.338	-.081	.057	.414	.023

*Note.* WAI: Working Alliance Inventory. DRI – R: Dual-role Relationships Inventory – Revised. ECC: Effective Correctional Counseling. For the three month need change  $R^2 = .153$ . For six month need change  $R^2 = .208$ .

\*  $p < .05$

Table 12.

*Preliminary Multiple Regression on Total Scores of Measures (WAI, DRI – R and ECC) and Changes in Severity of Criminogenic Needs at Three and Six Months.*

Measure/Subscale	Change in Severity of Criminogenic Needs					
	3 Months			6 Months		
	B	SE B	$\beta$	B	SE B	$\beta$
WAI						
Total	-.069	.053	-.292	-.076	.067	-.254
DRI – R						
Total	.001	.076	.004	-.032	.096	-.080
ECC						
Total	-.031	.069	-.061	.022	.087	.034

*Note.* WAI: Working Alliance Inventory. DRI – R: Dual-role Relationships Inventory – Revised. ECC: Effective Correctional Counseling. For the three month need change  $R^2 = .099$ . For six month need change  $R^2 = .098$ .

### Recidivism

The final outcome measure explored was recidivism (0 = no new conviction; 1 = any new conviction) at one and two years following the commencement of supervision. Table 13 shows the univariate correlations between the measures (totals and subscales) and the recidivism outcomes after one and two years. At the subscale level, it appears that the Bond subscale of the WAI and the Caring-Fairness and Trust subscales of the DRI – R were significantly correlated with recidivism at both the one and two year follow-up. At the total scale level, the WAI total ( $r = -.264, p < .05$ ) and the DRI – R total ( $r = -.279, p < .05$ ) were significantly related to recidivism for only year two.

Table 13.

*Correlation (r) between Measures (Totals and Subscales) and Recidivism at One and Two Years.*

Measure/Subscale		Recidivism	
		1 Year (N = 72)	2 Year (N = 58)
<b>WAI</b>			
	Task	-.181	-.167
	Bond	-.239*	-.333*
	Goal	-.194	-.170
	Total	-.205	-.264*
<b>DRI – R</b>			
	Caring-Fairness	-.256*	-.281*
	Trust	-.208	-.338*
	Toughness	.029	-.054
	Total	-.217	-.279*
<b>ECC</b>			
	Structure	.157	.155
	Relationship	.001	-.047
	Behavioural	.036	.065
	Cognitive	-.009	-.133
	Total	.088	.053

*Note.* WAI: Working Alliance Inventory. DRI – R: Dual-role Relationships Inventory – Revised. ECC: Effective Correctional Counseling.

\*  $p < .05$

Upon inspection of the recidivism rates for the study sample, it was found that there was a relatively low base-rate of recidivism at one and two years [13.88% (10/72) and 19.64% (11/56), respectively]. In order to control for the influence of the base rate on the calculation of the predictive accuracy of the measures, ROC's are provided for the dichotomous outcome of recidivism. An ROC of .50 signifies that the predictive accuracy of the measure for the given outcome is equal to the level of prediction expected by chance; therefore, as the ROC value increases from .50 to 1.0, this suggest increasing

levels of predictive accuracy. ROC values greater than .80 are considered “good”; values ranging from .70 to .80 are considered “moderate”; values ranging from .60 to .70 are considered “poor”; finally, ROC values less than .60 indicate “failure” for prediction of outcomes (Metz, 1978).

The analyses revealed that only the Bond (ROC = .745) and Trust (ROC = .721) subscales were accurately predicting two year recidivism. As for the total scores, the WAI (ROC = .721) and DRI – R (ROC = .704) totals were significantly predictive of two-year recidivism. None of the subscales or totals was significantly predictive of one-year recidivism outcomes (see Table 14). The average ROC for the ECC was approximately .470, suggesting that the predictive accuracy of the ECC measure for recidivism was lower than the accuracy expected by chance. Conversely, the average ROC for both the WAI and DRI – R measures was above .50 for predicting both one and two year recidivism.

Table 14.

*Predictive Accuracy (ROC) and 95% Confidence Intervals (CI) of Measures (WAI, DRI – R and ECC) Recidivism at One and Two Years.*

Measure/Subscale	Recidivism					
	1 Year ROC	Lower CI	Upper CI	2 Year ROC	Lower CI	Upper CI
<b>WAI</b>						
Task	.644	.477	.811	.612	.435	.790
Bond	.687	.526	.848	.745*	.586	.905
Goal	.659	.496	.822	.623	.450	.796
Total	.673	.518	.827	.721*	.559	.884
<b>DRI – R</b>						
Caring-Fairness	.669	.510	.828	.671	.500	.841
Trust	.666	.499	.833	.726*	.553	.899
Toughness	.568	.360	.775	.645	.452	.839
Total	.682	.523	.841	.704*	.535	.874
<b>ECC</b>						
Structure	.394	.207	.580	.357	.205	.508
Relationship	.491	.284	.698	.533	.340	.727
Behavioural	.450	.253	.647	.425	.254	.596
Cognitive	.573	.389	.758	.588	.410	.766
Total	.455	.262	.648	.459	.292	.625

*Note.* WAI: Working Alliance Inventory. DRI – R: Dual-role Relationships Inventory – Revised. ECC: Effective Correctional Counseling.

\*  $p < .05$

Given that the outcome of recidivism is dichotomous (i.e., recidivism vs. non-recidivism), four separate preliminary logistic regression analyses were conducted using the enter method. First, a logistic regression was conducted by entering all of the subscales of each measure into the model as predictor variables and one-year recidivism as the outcome measure (see Table 15). Second, a logistic regression was conducted by entering all of the total scores of each measure into the regression model with the one-

year recidivism as the outcome variable (see Table 16). The test of the full model was not significant for either the subscale total scores. The Wald test of significance revealed that only the Structure subscale of the ECC measure was significantly predicting increases in the odds of recidivism at one year ( $\beta = .322$ , Wald = 5.248,  $p < .05$ ).

Two logistic regression analyses were conducted separately on the subscale and total scores with the outcome of two year recidivism (see Tables 15 and 16). A test of the full model was significant  $\chi^2 (10, N = 58) = 19.06$ ,  $p < .05$ , and the Wald test revealed that only the Structure subscale of the ECC measure was significantly predictive of increases in the odds of recidivism at two years ( $\beta = .308$ , Wald = 5.470,  $p < .05$ ). The odds ratio for one and two year recidivism indicates that with every unit increase in scores on the Structure subscale items of the ECC measure, the expected odds of recidivism increases by a multiplicative factor of approximately 1.4 (see Table 16).

Table 15.

*Preliminary Logistic Regression on Subscales of Measures (WAI, DRI – R and ECC) and Recidivism at One and Two Years.*

Measures/Subscales	1 Year Recidivism (N = 72)				2 Year Recidivism (N = 58)			
	$\beta$	SE	Wald	OR	$\beta$	SE	Wald	OR
WAI								
Task	.119	.212	.313	1.126	.102	.234	.189	1.107
Bond	.053	.159	.110	1.054	-.212	.173	1.503	.809
Goal	-.263	.242	1.186	.768	.014	.238	.003	1.014
DRI – R								
Caring-Fairness	-.149	.104	2.031	.154	.000	.097	.000	1.000
Trust	.029	.266	.012	.913	-.134	.307	.190	.875
Toughness	.138	.251	.300	.584	.076	.189	.160	1.078
ECC								
Structure	.322	.140	5.248*	1.380	.308	.132	5.470*	1.361
Relationship	.091	.288	.100	1.096	-.306	.259	1.403	.736
Behavioural	-.041	.207	.040	.959	.065	.187	.123	1.068
Cognitive	-.331	.213	2.428	.718	-.422	.249	2.869	.656

*Note.* WAI: Working Alliance Inventory. DRI – R: Dual-role Relationships Inventory – Revised. ECC: Effective Correctional Counseling. For one year recidivism, Cox & Snell  $R^2 = .207$ . For two year recidivism, Cox & Snell  $R^2 = .288$ .

\*  $p < .05$

Table 16.

*Preliminary Logistic Regression on Total Score of Measures (WAI, DRI – R and ECC) and Recidivism at One and Two Years.*

Measures/Subscales	1 Year Recidivism (N = 72)				2 Year Recidivism (N = 58)			
	$\beta$	SE	Wald	OR	$\beta$	SE	Wald	OR
WAI								
Total	-.008	.027	.079	.992	-.010	.028	.132	.990
DRI – R								
Total	-.049	.038	1.686	.952	-.052	.041	1.650	.949
ECC								
Total	.064	.034	3.456	1.066	.070	.039	3.190	1.072

*Note.* WAI: Working Alliance Inventory. DRI – R: Dual-role Relationships Inventory – Revised. ECC: Effective Correctional Counseling. For one year recidivism, Cox & Snell  $R^2 = .095$ . For two year recidivism, Cox & Snell  $R^2 = .135$ .

### Forward-Stepping Regression Analysis

Based on the outcomes of the correlations, ROCs, and regression (multiple and logistic) analyses, the subscales and total scores of each measure that were significantly predictive of each outcome measure were entered into a forward-stepping multiple regression (for number of missed appointments and changes in severity of criminogenic needs) and logistic regression (for recidivism).

**Number of Missed Supervision Appointments.** An examination of the relationship between the WAI, DRI – R and ECC subscales and totals with the outcome measure of number of missed supervision appointments, only the Goal subscale of the WAI showed a predictive relationship with number of missed appointments at six months of supervision. None of the measures demonstrated a relationship with number of missed appointments at 12 months. A forward-stepping multiple regression revealed that none of

the subscales or total scores were significantly predictive of number of missed appointments at six or 12 months of supervision.

**Changes in Severity of Criminogenic Needs.** Correlation and multiple regression analyses revealed that the following subscale and total scores were significantly related to changes in severity of criminogenic needs at three months of supervision: Task, Bond, Goal, WAI Total, Caring-Fairness, Trust and DRI – R Total. At the total score level, the forward-stepping regression model was significant ( $R^2 = 9.60\%$ ;  $F_{1,68} = 7.138, p < .01$ ) and the WAI total score was the only significant predictor of changes in severity of criminogenic needs from intake to three months ( $\beta = -3.10, t(68) = -2.672, p < .01$ ). None of the subscales were predictive of changes in severity of needs from intake to three months of supervision.

For changes in severity of needs from intake to the six month assessment, the same subscales and total scores that were predictive of changes in needs at three months were also related to changes at six months. Additionally, the Toughness subscale of the DRI – R and the Structure and total score for the ECC measure were also included in the model. At the total score level, none of the measures were significantly predictive of changes in severity of needs at six months. At the subscale level, the forward-stepping multiple regression resulted in a significant overall model ( $R^2 = 11.1\%$ ;  $F_{1,68} = 8.354, p < .01$ ). The Trust subscale of the DRI – R was the only subscale in the model, significantly predicting decreases in severity of needs at six months of supervision ( $\beta = -.681, t(68) = -2.89, p < .01$ ).

**Recidivism.** For one year recidivism, only subscales demonstrated a relationship to this outcome. The Bond subscale of the WAI, Caring-Fairness subscale of the DRI – R

and Structure subscale of the ECC measure were entered into a forward-stepping logistic regression. The Hosmer-Lemeshow test revealed a good fit of the model to the data  $\chi^2 (8, N = 72) = 9.67, p > .05$ . The overall model was significant  $\chi^2 (2, N = 72) = 11.70, p < .01$  and the second step of the regression model resulted in two subscales showing a significant predictive relationship to recidivism at one year; the Structure subscale of the ECC measure ( $\beta = .177, \text{Wald} = 6.27, p < .05$ ) predicting increases in the odds of recidivism and the Caring-Fairness subscale of the DRI – R ( $\beta = -.108, \text{Wald} = 5.84, p < .05$ ) predicting decreases in the odds of recidivism at year one.

For two year recidivism, at the subscale level, Bond, Caring-Fairness, Trust and Structure were entered into a forward-stepping logistic regression. The Hosmer-Lemeshow test showed the model was a good fit for the data,  $\chi^2 (7, N = 58) = 4.934, p > .05$  and the omnibus test of the model was significant  $\chi^2 (2, N = 58) = 10.643, p < .05$ . The only predictor that was included in the model was the Trust subscale of the DRI – R; the Trust subscale was found to be significantly predictive of decreases in the odds of recidivism after a two year follow-up ( $\beta = -.341, \text{Wald} = 6.88, p < .01$ ). The Structure subscale of the ECC measure approached significance, predicting increases in the odds of recidivism after two years ( $\beta = .138, \text{Wald} = 3.57, p = .059$ ). At the total score level, the WAI total score and the DRI – R total score were entered into a forward-stepping logistic regression. The Hosmer-Lemeshow test showed the model was a good fit to the data,  $\chi^2 (7, N = 58) = 7.522, p > .05$  and the omnibus test of the model was significant  $\chi^2 (2, N = 58) = 4.575, p < .05$ . It was found that the DRI – R total score predictive of recidivism after a two year follow-up ( $\beta = -.040, \text{Wald} = 4.000, p < .05$ ).

## Supplementary Analysis

**Risk and the DRI – R.** Risk has been thoroughly established in the research literature as a major predictor of criminal justice outcomes with offenders. Previous research however has not explored the predictive ability of the WAI, DRI-R or ECC with criminal justice outcomes while controlling for risk. Recidivism is generally considered the outcome of primary interest in the criminal justice literature. Therefore, the predictive validity of the DRI – R total score and Trust subscale with two-year recidivism (while controlling for risk) was explored. These predictor and outcome sets were chosen as the DRI – R total and Trust subscale were found to be the best predictors, at the total and subscale level, of recidivism after two years compared to the total and subscale scores of the three measures. The results of the forward-stepping logistic regressions revealed that the DRI – R total score and Trust subscale score were significantly predictive of decreases in the odds of recidivism after two years. To explore whether the DRI – R total score and Trust subscale score were significantly predictive of recidivism after a two year follow-up while controlling for risk score, correlations and a logistic regressions were conducted.

Consistent with the literature, univariate correlational analyses revealed a significant positive relationship between risk (as assessed by the Criminal History subscale of the Level of Service Inventory – Revised) and recidivism at two years ( $r = .441, p < .01$ ). A significant negative correlation was found between the DRI – R total score ( $r = -.279, p < .05$ ) as well as the DRI – R Trust subscale ( $r = -.338, p < .05$ ) and recidivism after two years.

Following the outcomes of the univariate correlations, the DRI – R Trust subscale and risk score were entered as predictors into a logistic regression analysis using the enter method. The results of the regression revealed that only risk was significantly predictive of two year recidivism ( $\beta = .498$ , Wald = 5.313,  $p < .05$ ); however, the DRI – R Trust subscale was not ( $\beta = -.150$ , Wald = 1.581,  $p = .209$ ). Similar results were found with the DRI – R total score. When the DRI – R total score and risk score were entered as predictors into a logistic regression, the results revealed that only risk was significantly predictive of two year recidivism ( $\beta = .525$ , Wald = 6.311,  $p < .05$ ) and the predictive ability DRI – R total score was no longer significant ( $\beta = -.027$ , Wald = 1.498,  $p > .10$ ).

## Discussion

The primary purpose of the present study was to explore which measure, the Working Alliance Inventory (WAI), Dual-role Relationships Inventory – Revised (DRI – R) or the Effective Correctional Counseling (ECC) measure, is most predictive of criminal justice outcomes (i.e., number of missed supervision appointments, changes in severity of criminogenic needs and recidivism) for a sample of offenders on community supervision. The secondary purpose of the present study was to explore which subscales of each measure (e.g., Bond, Caring-Fairness and Cognitive Techniques) appear to be most predictive of criminal justice outcomes.

Given that there was insufficient empirical evidence to suggest that one measure would be more predictive of outcomes than the others, exploratory analyses were conducted in order to answer the main research questions. However, based on the literature, it was hypothesized that higher scores on each of the measures would be related to better outcomes (i.e., fewer missed appointments, decreases in the severity of criminogenic needs and lower odds of recidivism). Following an overview of the psychometric properties of the measures, the results of the predictive validity analyses will be discussed in relation to the research questions and hypothesis.

### Psychometric Properties of the Measures

The internal consistency analysis revealed strong reliability for the WAI and DRI – R, indicating that the items within each subscale, which aim to measure various indicators of relationship a construct (e.g., Bond, Trust), are consistently producing similar scores. Although the ECC's individual subscales had lower internal consistency compared to the other two measures, the Cronbach's alpha level for the ECC total score

( $\alpha = .804$ ) was within the acceptable range ( $\alpha = .600$  to  $.700$ ). When interpreting internal consistency, it is important to note that when extremely high alphas are present, this may be indicative of redundancies of items within a measure. Therefore, it is possible that subscales within measures may not be adding any unique information above and beyond the other subscales (Cortina, 1993).

The results of the analysis of convergent validity showed that the WAI and DRI – R were highly correlated with each other, particularly the Caring-Fairness and Trust subscales of the DRI – R with the Bond subscale of the WAI. This statistical relationship parallels what is theoretically expected, as these domains conceptually overlap. Similarly, although the Toughness subscale of the DRI – R was significantly correlated with all of the subscales of the WAI, it showed the weakest correlation compared to the Caring-Fairness and Trust subscales, which is reasonably expected, as the concept of Toughness in therapeutic relationships is one that is not explicitly explored in the WAI.

Overall, the ECC measure showed a relationship with the other measures in a theoretically consistent fashion. The Relationship subscale was most strongly related to the Caring-Fairness subscale of the DRI – R. When compared to the WAI, the Structure subscale of the ECC measure, which focuses on measuring the PO's ability to guide a session and keep the client on focused on tasks, was most related to the Task subscale. Finally, the Behavioural and Cognitive Techniques subscales of the ECC showed a very weak relationship with most of the subscales of the WAI and DRI – R. This should be expected given these are concepts that are not measured by the WAI and DRI – R.

Interrater reliability was conducted on a random sampling of 21 audiotapes. Overall, the *ICC* between coders was extremely low for the WAI and DRI – R measures

(*ICC* = .355, .256 respectively). However, when interrater reliability was examined comparing the two raters on percentage of agreement within one deviation score, the interrater agreement on the DRI – R was moderate (78.11%) and the agreement on the WAI was still low (66.01%). Interrater reliability and agreement on the ECC measure was excellent (*ICC* = 0.998; agreement = 98.59%).

A possible explanation for these results could be that the WAI and DRI – R do not make use of specific coding instructions for each question and require that raters code items “quickly” in order to go with his/her first impressions. On the other hand, the ECC measure has an extremely detailed coding manual that raters must follow in order to make precise coding decisions. Therefore, percentage of agreement between coders may be a more appropriate value for the WAI and DRI – R measures, whereas the *ICC* may be a more appropriate measure of interrater reliability for the ECC measure.

### **Relationship between Total Scores and Outcomes**

The primary research question of the present study asked: which measure is most predictive of outcomes? Although there was insufficient research to hypothesize which measure would be the most predictive of outcomes, it was hypothesized that higher total scores would be related to positive outcomes (e.g., decreases in the severity of criminogenic needs). This hypothesis was only partially supported. Correlational analyses demonstrated that although none of the measures were significantly related to the number of missed supervision appointments at six or 12 months following the commencement of supervision, the general trend showed that as scores on each of the three measures increased, the number of missed appointments decreased. The correlations also revealed that higher total scores on the WAI and DRI – R were related to decreases in the severity

of criminogenic needs, as assessed by the clients' probation officers, following assessments conducted at three month and six months following the commencement of supervision. Lastly, it was found that both the WAI and DRI – R were related to decreases in recidivism after a two-year follow up. As was hypothesized, higher scores on each of these measures was related to better outcomes. For the ECC measure, a similar pattern emerged for the changes in severity of criminogenic needs at three and six months; however, the results did not reach significance. Surprisingly, for the recidivism outcome it was found that higher scores on the ECC total were weakly related to *increases* in recidivism. The results of the ROC analysis with the dichotomous outcome of recidivism showed similar findings. The WAI and DRI – R total scores were significantly predictive of two year recidivism (ROC = .721, .704,  $p < .05$ , respectively), whereas the predictive accuracy of ECC total score for both one (ROC = .455,  $p > .05$ ) and two year recidivism was less than what can be expected based on chance alone (ROC = .459,  $p > .05$ ).

Following the univariate analyses of the relationship between the total scores of the three measures and the three outcomes, preliminary regression analyses using the entry method were conducted to determine the predictive validity of each measure when controlling for the effects of the other total scores. The results were consistent for each of the three outcome measures. For number of missed appointments, similar to the results of the correlations, none of the total scores were significantly predictive of this outcome at either six or 12 months. Interestingly, for the outcome of changes in severity of criminogenic needs, although the correlations showed a significant relationship between the WAI and DRI – R total scores and this outcome, the multiple regression did not show

a predictive relationship between the total scores of the WAI, DRI – R or the ECC measures with changes in severity of needs at either three or six months. In fact, the regressions did not even approach significance. Finally, despite the significant univariate relationship between the WAI and DRI – R with recidivism after a two-year follow-up period, as evidenced by the correlations and ROC analyses, the logistic regression showed that none of the three total scores were significantly predictive of recidivism at either one or two years.

For the final stage of analysis, in order to determine which total score was the best predictor of outcomes; forward-stepping regressions were conducted with each of the total scores and outcomes. Firstly, it was found that the WAI total score was the most predictive out of the three measures for the outcome of changes in severity of criminogenic needs from intake to three months of supervision. Secondly, it was found that the DRI – R total score was significantly predictive of recidivism after a two year follow-up period. None of the total scores were predictive of number of missed appointments at six or 12 months, changes in severity of needs at six months, or recidivism at after a one year follow up.

### **Relationship between Subscales and Outcomes**

The secondary research question asked: which subscales are most predictive of outcomes with the present sample? As was hypothesized with the total scores of the measures, it was expected that higher scores on subscales would be related to better outcomes (e.g., fewer missed supervision appointments). Similar to what was found with the total scores, this hypothesis was only partially supported. The correlation analyses demonstrated that although none of the measures were significantly related to number of

missed appointments, the general trend showed that higher scores were related to fewer missed appointments. For changes in severity of criminogenic needs, it was found that all of the WAI subscales (i.e., Task, Goal and Bond) had a significant negative relationship with changes in severity of needs at three and six months. For the DRI – R, all of the subscales with the exception of Toughness had a significant negative correlation with changes in severity of needs at three and six months. Finally, for the ECC measure, only the Structure subscale was significantly related to changes in severity of needs at six months, in the hypothesized direction.

For one-year recidivism, it was found that only the Bond subscale of the WAI and the Caring-Fairness of the DRI – R had a significant correlation with this outcome, which was found to be in the expected direction ( $r = -.239, -.259, p < .05$ , respectively). For two-year recidivism, the Bond subscale of the WAI as well as the Caring-Fairness and Trust subscales of the DRI – R were the only subscales significantly related to this outcome. None of the subscales of the ECC measure were related to one or two year recidivism. The results of the ROC analysis revealed that of the ten subscales, only the Bond subscale of WAI (ROC = .745,  $p > .05$ ) and the Trust subscale of the DRI – R were significantly predictive of two year recidivism (ROC = .726,  $p > .05$ ). Of note, the Structure subscale of the ECC measure was predicting recidivism substantially worse than chance for one and two year recidivism (ROC = .394, .357,  $p > .05$ , respectively), as evidenced by the upper bounds of the 95% confidence intervals, which barely approached ROC = .50.

Following the univariate analyses between the subscales and the three outcome measures, preliminary regression analyses were conducted using the enter method. For

the outcome of number of missed appointments, although none of the subscales showed a significant relationship in the correlational analysis, the Goal subscale of the WAI showed a significant negative relationship with number of missed appointments at six months. None of the subscales were significantly related to number of missed appointments at 12 months. Regarding the outcome of changes in severity of criminogenic needs, only the Toughness subscale was significantly predictive of changes in severity of needs at six months, however higher scores on this subscale were significantly predicting *increases* in the severity of needs ( $\beta = .357, t(69) = 2.09, p < .05$ ). The results of the preliminary logistic regression with the dichotomous outcome of recidivism showed that only the Structure subscale of the ECC measure was significantly related to recidivism after one and two years following the commencement of supervision; however, higher scores were significantly predicting *increases* in the odds of recidivism.

For the final stage of analyses, based on the outcomes of the correlations, ROCs and preliminary regression analyses, forward-stepping regressions were conducted with the subscale scores to determine which subscales were the best at predicting each of the three outcomes. The results of the first forward-stepping multiple regression revealed that none of the subscales were predictive of number of missed appointments at six or 12 months. For changes in severity of criminogenic needs, it was found that although none of the subscales were predictive of the three month outcome, the Trust subscale of the DRI – R was significantly related to decreases in severity of criminogenic needs from intake to six months ( $\beta = -.681, t(68) = -2.89, p < .01$ ). For the outcome of recidivism, a forward-stepping logistic regression revealed that the Caring-Fairness subscale of the

DRI – R was most predictive of decreases in the odds of recidivism ( $\beta = -.108$ , Wald = 5.84,  $p < .05$ ) and the Structure subscale was significantly predicting increases in the odds of recidivism after a one-year follow-up period ( $\beta = .177$ , Wald = 6.27,  $p < .05$ ). Finally, only the Trust subscale of the DRI – R was significantly related to recidivism after a two-year follow-up, predicting decreases in the odds of recidivism ( $\beta = -.341$ , Wald = 6.88,  $p < .01$ ).

### **Summary and Implications of Predictive Analyses**

Overall, based on the univariate and multivariate analyses, it appears that the DRI – R total measure and two of its three subscales (i.e., Caring-Fairness and Trust) were most consistently predictive of outcomes with the present sample of offenders. The overall results are consistent with Skeem et al.'s (2007) findings that the DRI – R compared to WAI is better at predicting recidivistic outcomes. Alternatively to what was found for the present study, Skeem and colleagues determined that the observer ratings of the DRI – R Trust subscale and total score were not predictive recidivism (i.e., new arrests). They found that the probation officers' ratings on the Trust subscale were consistently predictive of client outcomes (e.g., failure to report, violence/new arrests). Skeem's study found poor cross-informant reliability for both the DRI – R as well as the WAI, which may in part account for the discrepant findings. Also the disparity between the findings of the present study and Skeem's findings could be due to the differences in samples, as their sample consisted of specialty mental health probationers diagnosed with serious mental disorders. In an effort to investigate the disparity between the results of the two studies, the author of the present study attempted to obtain the mean and standard

deviation of the scores on the DRI – R and WAI from Skeem and colleagues, however, this information could not be obtained.

The consistent finding between the two studies however was the unique predictive ability of the Trust subscale of the DRI – R. Interestingly, the Trust subscale was the best predictor of the long-term outcomes for the present study (i.e., changes in the severity of needs from intake to six months and recidivism after two years). In other words, higher quality scores on indicators of mutual Trust (as measured by the DRI – R) between the probation officers and their clients were predictive of decreases in the severity of criminogenic needs of clients at six months of supervision and lower odds of recidivism at the two year follow-up point. These results suggest that there may be a unique approach to the manner in which the DRI – R is measuring Trust that explains a significant proportion of the variance in the two long-term outcome variables of interest.

A possible explanation as to why the Trust subscale is the most predictive subscale within the DRI – R could be due to the manner in which the questions within this subscale are constructed versus the way the questions are structured for the Caring-Fairness and Toughness subscales. For example, one of the questions within the Trust subscale requires raters to code the degree to which: “The PO trusts the probationer to be honest with him/her”. The counterpart to this question within the subscale asks the raters to code the degree to which: “The probationer feels safe enough to be open and honest with the PO”. Compared to structure of the question for the Caring-Fairness and Toughness subscales, the focus of questions in the Trust subscale are balanced between interpreting the probationer as well as the PO’s unique perspective on the element of Trust. On the other hand, the questions for Caring-Fairness and Toughness are more

focused on coding the PO's behaviour and responses to the client's behaviour. Therefore, it is possible that the manner in which the Trust subscale is capturing a more balanced measure of the construct of Trust is increasing its ability to predict outcomes in a more valid way, as shown Skeem's study as well as the present study.

Compared to the WAI and ECC, a similar comparison can be made. The ECC measure overall is constructed to measure the PO's behaviour and responses to the client's behaviour. For the WAI, the rater is forced to amalgamate his/her interpretations of the client and PO's behaviour for a given question and assign a single score. For example, a rater is asked to code the following: "There is a mutual liking between the client and therapist". In this situation, the rater is required to consider the perspective of both the client and PO and assign one score that captures the interaction, rather than the perspective of each the client and PO. The implications for constructing the questions in this manner results in a score of the "dynamic", rather than a representation of each of the client and PO's experience. The rater is in turn forced to assign a score to the outcome of the interaction rather than capture the behaviour of the client and PO separately.

An interesting finding revealed that the Structure subscale was the only subscale of the ECC measure that was consistently related to the outcomes based on both the univariate and multivariate analyses. Furthermore, as was found with the correlational analysis and logistic regression analysis, the Structure subscale was significantly related to *increases* in the odds of recidivism at one year and approached significance for the two year recidivism follow-up. In other words, counter to what was expected, higher scores on the Structure subscale questions were significantly predictive of increased odds of recidivism.

A possible explanation for these findings is that the Structure subscale of the ECC measure looks at the quality of a probation officers' ability to keep a session focused, assigning tasks for the client to work on (e.g., homework) and targeting the most important/acute criminogenic needs. It is possible that although the ECC measure requires assigning high quality scores to probation officers who are using effective structuring techniques (e.g., assigning and reviewing homework, check in on use of community resources), it does not sufficiently take into account the client's "buy-in" or behaviour; rather, it focuses on scoring how the probation officer *responds* to the client's behaviour. Beyond the measure itself, it is also possible that the elements of the ECC measures themselves (e.g., structure, behavioural techniques) may not be factors that are predictive of outcomes.

Overall, the difference between the ECC measure and the two relationship measures (WAI and DRI – R) is that the ECC measure was structured to focus on the behaviour of the probation officer; whereas the scoring of the WAI and DRI – R observer versions are based on observations of both the therapist/probation officer and the client. Therefore, it is possible that although the ECC items are measuring skills and techniques that have been shown in research to be effective intervention strategies, and may be effectively measuring the behaviour of the probation officers, it may not be sufficiently taking into account the behaviour of the client. This in turn may be reducing the ability of the ECC measure to predict client outcomes. Future research should aim to modify the ECC measure by incorporating more of the elements of the client's behaviours/observations as well as how the dyad interacts.

Given that the two relationship measures, the WAI and DRI – R, were significantly predicting outcomes in the expected direction, this begs the question: why didn't the Relationship subscale of the ECC measure predict any outcomes? The fact that the Relationship subscale was not related to any of the outcomes also suggests that the measure itself is not accurately capturing a crucial part of the relationship; potentially the contribution of the client's perspective of the relationship. Similar to the manner in which the questions are structured for the other three subscales of the ECC (i.e., Structure, Behavioural Techniques and Cognitive Techniques), the questions within the Relationship subscale are focused on measuring the PO's demonstration of indicators of a positive relationship (e.g., warmth, respect, active listening skills). Therefore, this may be resulting in a misrepresentation of the quality of the relationship between the client and PO. This further speaks to the importance, both in terms of conception and construction, of the measure to adequately assess the quality of the relationship in an accurate and balanced manner, including the perspectives of both the service provider (e.g., probation officer) and the client.

### **Risk and Measures of Alliance**

The relationship between risk and recidivism is well established in the criminal justice literature, as is the relationship between alliance and clinical outcomes (e.g., increases in measures of well-being) in the psychotherapeutic literature. Therefore, supplementary to the predictive validity analyses conducted with the WAI, DRI – R and ECC, univariate correlations and logistic regressions were conducted with the two best predictors of recidivism after two years (i.e., DRI – R total score and Trust subscale), while controlling for risk. Given the small sample size of the present study ( $N = 72$ ),

incremental validity analyses were not possible. In order to have sufficient power (approaching .80) to meaningfully interpret the results of an analysis of incremental validity, the sample size would have to be more than double the current sample size (e.g., Anastasi & Urbina, 1997; Hunsley & Meyer, 2003). The results of the supplementary analyses were consistent with the results from the criminal justice field; risk (as measured by the Criminal History Subscale of the Level of Service Inventory – Revised) was more predictive of two-year recidivism compared to the DRI – R total score and Trust subscale. Future research with larger samples should investigate the predictive ability of measures of alliance above and beyond risk in terms of incremental validity.

### **Limitations**

Some researchers argue that observer ratings of relationship do not capture the motivational or attitudinal components of alliance that are otherwise captured by patient and therapist ratings (Elvins & Green, 2008). Therefore, a limitation of the present study is that only observer ratings of relationship were captured. Given that the probation audiotaped sessions were conducted approximately two years ago, probationer and probation officer ratings could not be obtained. Despite this limitation, poor cross-informant agreement across rater types has been demonstrated for both the WAI and the DRI – R. The results of Skeem et al., (2007) revealed that only observer ratings were highly correlated with the probation officer's ratings of the probationers Trust. Also, the observer's ratings of the probation officer's Toughness were highly correlated with the probationer's ratings, but not with the probation officer's ratings of his/her own Toughness. Therefore, the present study was conducted using only observer ratings.

Despite potentially providing a more stable measure of relationship than a single observation, this study only made use of two observations for each PO-client pairing. These two observations only represent supervision sessions between the PO's and the clients at intake (i.e., commencement of supervision) and after three months of supervision. The average length of the community supervision orders was 15.7 ( $SD = 7.1$ ) months; therefore, it is possible that this study did not capture the unique elements of the relationship that became present later on in the supervision period. Although the probation officers were asked to submit recordings with their clients at intake, three months and six months of supervision, there was not a sufficient number of PO's who complied with this request to use three recordings as the inclusion criterion for the present study.

Another possible limitation of the present study is the limits to the generalizability of the findings due to a relatively unique sample of probation officers and clients. First, the present sample of probation officers volunteered for the STICS project and therefore may possess higher motivational levels than probation officers in general. Furthermore, 67.6% ( $n = 23$ ) of the probation officers received the three-day training on best practices, which potentially makes them more skilled than POs in general. Regarding the client sample, although over 50% of the clients were assessed as high-risk to recidivate, the base-rate of recidivism was only 14%. These issues suggest that the results of this study must be replicated with a larger sample of POs and clients drawn from the general community supervision population.

Unfortunately, although the total number of audiotapes for the present study was moderate ( $N = 144$ ) this represents a small sample of clients ( $N = 72$ ). The small sample

size has implications for the findings and interpretation of the results. It is possible that the discrepancy between the results of the univariate and multivariate analyses is due to the small sample size. Similarly, with such a small sample of clients, the substantial amounts of missing data for the outcome of changes in severity of needs from intake to six months may have implications for the interpretability of the results for this outcome. In an effort to account for the influence of this missing data, the missing values for the six month outcome were imputed by replacing the missing cells with the difference score resulting from the changes in severity of needs from the intake assessment to the three month assessment. Given that the data was missing at random and there was more than 10% missing data for this outcome, imputation was chosen as the most appropriate method of handling the missing data over case deletion and mean replacement (Tabachnick and Fidell, 2007).

### **Conclusion**

Overall, the psychometric properties of the WAI and DRI – R were very strong with regards to internal consistency and convergent validity, which is consistent with what has been shown in previous research; however, the interrater reliability was low. The ECC measure had moderate internal consistency and moderate convergent validity; however, the interrater reliability, as assessed by intraclass correlation coefficients, was quite high.

The results of the predictive validity analysis revealed that the DRI – R total and subscales (i.e., Trust and Caring-Fairness) were most consistently predictive of criminal justice outcomes for the present sample of offenders. It was found that the DRI – R total score was the most predictive measure of decreases in the odds of recidivism after a two-

year follow-up period. The results also revealed that the Caring-Fairness subscale of the DRI – R was most predictive of changes in the severity of needs from intake to the six month assessment, showing higher scores predicting decreases in the severity of needs from intake to six months. The most consistent pattern of results showed that the Trust subscale of the DRI – R was the most predictive component of the three measures for predicting the longer-term outcomes (i.e., decrease in the severity of criminogenic needs at six months and lower odds of recidivism at two years). A possible explanation for these findings may be that the DRI – R, specifically the Trust subscale, captures a more balanced and accurate measure of the relationship between the probation officers and their clients. The results may also be speaking to relative importance and value of establishing a positive dual-role relationship (as measured by the DRI – R) with involuntary criminal justice clients in order to obtain the desired client outcomes (e.g., lower odds of recidivism). This harkens back to the concepts of “relational fairness” and “procedural justice” as being important elements and determinants of the outcome of a relationship when a power imbalance is present (Skeem, et al., 2003).

In an effort to answer the two research questions, it appears that the DRI – R is the most predictive measure for the primary criminal justice outcome of interest (i.e., recidivism after two years) compared to the WAI and ECC; however, the WAI proved to be the most predictive of short-term changes in the severity of needs from intake to three months of supervision. At the subscale level, it appears that the Trust subscale of the DRI – R is the most predictive of outcomes, as it was the most predictive of changes in the severity of needs at the six month assessment as well as predicting decreases in the odds of recidivism after two years.

Overall, the results suggest that valid and reliable measures of relationship, such as those conceptualized and measured by the WAI and DRI – R can significantly predict outcomes for criminal justice clients. Furthermore, there appears to be something unique about the DRI – R total and subscales, specifically the Trust subscale, that are capturing changes in the criminal justice outcome measures that are not being captured by the WAI and ECC. This primarily speaks to the manner in which the DRI – R measure is constructed (e.g., a more balanced approach to coding the relationship), but also lends credence to the importance of considering the element of the dual-role when predicting client outcomes in mandated treatment/supervision settings, as argued by Skeem and colleagues. Although the supplementary analyses showed that risk was more related to recidivism after two years than the DRI – R total and Trust subscale, future research with larger samples should look to replicate these analyses.

If measures assessing the quality of relationships are significantly predicting outcomes, it may be worth investigating the concept of “how much relationship is enough” to produce the desired outcomes when one can control for other factors such as risk/need. This speaks to the practical and clinical utility of having valid measures that predict truly dependent outcomes. Also, if the reliability of these measures are enhanced by increasing the specificity of coding instructions and incorporating a more balanced measure of the relationship (i.e., both the PO and client perspectives), this may enhance the predictive validity of these measures beyond their current abilities. This in turn can help inform service providers of the elements of a relationship (e.g., Trust in the DRI – R) that have been shown to be related to changes in the outcomes of their clients.

Although the results of the present study cannot speak to whether therapeutic alliance is the “quintessential integrative variable of therapy”, the results of this study lend support to the predictive validity of the DRI – R for predicting outcomes with involuntary clients. Furthermore, the results lend empirical support to the concepts of positive therapeutic relationships and the element of the dual-role relationship as significant predictors of therapeutic outcomes for clients in a criminal justice setting.

## References

- Anastasi, A., & Urbina, S. (1997). *Principles of psychological testing* (5<sup>th</sup> ed.). New York: MacMillan.
- Andrews, D. A. (2000). Principles of Effective Correctional Programs. *Compendium 2000 on Effective Correctional Programming*. Ottawa, ON: Correctional Service of Canada.
- Andrews, D. A., & Bonta, J. (1995) *The Level of Service Inventory - Revised*. Toronto: Multi-Health Systems.
- Andrews, D. A. & Bonta, J. (2006). *Psychology of Criminal Conduct*. 4<sup>th</sup> Edition. Newark, NJ: LexisNexis.
- Andrews, D.A. & Dowden, C. (2006). Risk principle of case classification in correctional treatment: A meta-analytic investigation. *International Journal of Offender Therapy and Comparative Criminology*, 50, 88-100.
- Andrews, D. A., Bonta, J. & Hoge, R. D. (1990). Classification for effective rehabilitation: Rediscovering psychology. *Criminal Justice and Behaviour*, 17, 19-52.
- Andrews, D. A., Zinger, I., Hoge, R. D., & Bonta, J. (1996). Does correctional treatment work? A clinically relevant and psychologically informed meta-analysis. In D. F. Greenberg (Eds.), *Criminal careers* (pp. 437–472). Brookfield, VT: Dartmouth.
- Bonta, J. (1995). “The Responsivity Principle and Offender Rehabilitation.” *Forum on Corrections Research*, 7, 34-37.

- Bonta, J., Parkinson, R., Pang, B., Barkwell, L., & Wallace-Capretta, S. (1994). *The Revised Manitoba Classification System*. Ottawa, Ontario: Solicitor General Canada.
- Bonta, J., Wallace-Capretta, S. & Rooney, R. (2000). A quasi-experimental evaluation of an intensive rehabilitation supervision program. *Criminal Justice and Behavior*, 27, 312-329.
- Bordin, E. S. (1975, August). The working alliance: Basis for a general theory of psychotherapy. Paper presented at a symposium of the American Psychological Association, Washington, DC.
- Bordin, E. S. (1976). The generalizability of the psychoanalytic concept of the working alliance. *Psychotherapy: Theory, Research and Practice*, 16, 252-260.
- Bordin, E. S. (1979). The generalizability of the psychoanalytic concept of the working alliance. *Psychotherapy: Theory, Research, and Practice*, 16, 252-260.
- Bourgon, G., Bonta, J., Rugge, T., Scott, T-L., & Yessine, A. (2009). *Translating "What Works" into Sustainable Everyday Practice: Program Design, Implementation and Evaluation*. Ottawa, Ontario: Public Safety Canada.
- British Columbia Public Safety and Solicitor General. (2004). *Female and Male Community Risk Needs Assessment: Data from Aboriginal Offenders Assessed in 1998*. British Columbia: Corrections Branch. Unpublished report.
- Bush, J. (1995). "Teaching Self-Risk Management to Violent Offenders." In J. McGuire (ed.), *What Works: Effective Methods to Reduce Re-offending* (pp. 139-154). Sussex, England: Wiley.

- Connors, G. J., Carroll, K. M., DiClemente, C. C., Longabaugh, R. & Donovan, D. M. (1997). The Therapeutic Alliance and Its Relationship to Alcoholism Treatment Participation and Outcome. *Journal of Consulting and Clinical Psychology*, 65, 388-598.
- Cortina, J. M. (1993). What is coefficient alpha? An examination of theory and applications. *Journal of Applied Psychology*, 78, 98–104.
- Crits-Christoph, P. & Connolly, M. B. (1999). Alliance and technique in short-term dynamic therapy. *Clinical Psychology View*, 19, 687-704.
- Eames, V. & Roth, A. (2000). Patient attachment orientation and the early working alliance: A study of patient and therapist reports of alliance quality and ruptures. *Psychotherapy Research*, 10, 421-434.
- Eldridge, H. & Wyre, R. (1998). The Lucy Faithfull Foundation residential program for sexual offenders. In Marshall, W. L., Fernandez, Y. M., Hudson, S. M., & Ward, T. (Eds.), *Sourcebook of treatment programs for sexual offenders* (pp.79- 92); New York, NY: Plenum Press.
- Elvins, R. & Green, J. (2008). The conceptualization and measurement of therapeutic alliance: An empirical review. *Clinical Psychology Review*, 28, 1167-1187.
- Frank, J. D. & Frank, J. B. (1991). *Persuasion and Healing: A comparative study of psychotherapy* (3<sup>rd</sup> Ed) Baltimore: Johns Hopkins University Press.
- Freud, S., (1912). The Dynamics of Transference. In Strachey, J., (Ed.), *The Standard Edition of the Complete Psychological Works of Sigmund Freud*, Volume XII. Hogarth, London.

- Gaston, L. (1990). The concept of the alliance and its role in psychotherapy: Theoretical and empirical considerations. *Psychotherapy, 27*, 143-153.
- Green, J. (2006). Annotation: the therapeutic alliance – a significant but neglected variable in child mental health studies. *Journal of Child Psychology and Psychiatry, 47* (5), 425-435.
- Greenson, R. R. (1967). *Technique and practice of psychoanalysis*. New York: International Universities Press.
- Hall, J. A., Horgan, T. G., Stein, T. S., & Roter, D. L. (2002). Liking in the physician–patient relationship. *Patient Education and Counseling, 48*, 68–77.
- Horvath, A. O. (1994). Empirical validation of Bordin's pantheoretical model of the alliance: The Working Alliance Inventory perspective. In A. O. Horvath & L. S. Greenberg's (Eds.), *The working alliance: Theory, research, and practice* (pp. 109–128). New York: Wiley.
- Horvath, A., & Greenberg, L. (1986). The development of the Working Alliance Inventory. In L. Greenberg & W. Pinsof (Eds.), *The psychotherapeutic process: A research handbook* (pp. 529–556). New York: Guilford Press.
- Horvath, A., & Symonds, B. (1991). The role of the therapeutic alliance in psychotherapy. *Journal of Consulting and Clinical Psychology, 38*, 139–149.
- Horvath, A. O. (1981). *An exploratory study of the working alliance: Its measurement and relationship to outcome*. Unpublished doctoral dissertation, University of British Columbia, Vancouver, British Columbia, Canada.
- Horvath, A. & Greenberg, L. (1989). Development and Validation of the Working Alliance Inventory. *Journal of Counseling Psychology, 36*, 222-233.

- Hougaard, E. (1994). The therapeutic alliance: A conceptual analysis. *Scandinavian Journal of Psychology, 35*, 67-85.
- Howell, S. D. (2006). Evidence Based Practice in Community Corrections: The British Columbia Experience. In, *An Overview of Community Corrections in China and Canada*. International Centre for Criminal Law Reform and Criminal Justice Policy, Vancouver, British Columbia, Canada.
- Hunsley, J., & Meyer, G. J. (2003). The incremental validity of psychological testing and assessment: Conceptual, methodological, and statistical issues. *Psychological Assessment, 15*, 446–455.
- Kim, S.C., Boren, D.M., & Solem, S.L. (2001). The Kim Alliance Scale: Development and Preliminary Testing. *Clinical Nursing Research, 10* (3), 314-331.
- Kroner, D. G., & J. F., Mills, (2001). The Accuracy of Five Risk Appraisal Instruments in Predicting Institutional Misconducts and New Convictions. *Criminal Justice and Behaviour, 28*, 471-489.
- Krupnick, J., Sotsky, S., Simmens, S., Moyer, J., Elkin, I., Watkins, J., & Pilkonis, P. (1996). The role of the therapeutic alliance in psychotherapy and pharmacotherapy outcome: Findings in the National Institute of Mental Health Treatment of Depression Collaborative Research Program. *Journal of Consulting and Clinical Psychology, 64*, 532–539.
- Lidz, C. W., Hoge, S. K., Gardner, W., Bennett, N. S. (1995). Perceived coercion in mental hospital admission: Pressures and process. *Archives of General Psychiatry, 52*, 1034-1039.

- Luborsky, L. (1976) Helping alliances in psychotherapy: The groundwork for a study of their relationship to its outcome. In, J.L. Claghorn (Ed.), *Successful Psychotherapy* (pp. 92-116). New York: Brunner/Mazel.
- Luborsky, L. (1984). *Principles of psychodynamic psychotherapy*. New York: Basic Books.
- MacCoun, R. J. (2005). Voice, control, and belonging: The double-edged sword of procedural fairness. *Annual Review of Law and Social Science, 1*, 171–201.
- Marshall, W. L. & Serran, G. A. (2004). The role of the therapist in offender treatment. *Psychology, Crime & Law, 10*, 309-320.
- Mallinckrodt, B. (2000). Attachment, social competencies, social support and interpersonal process in psychotherapy. *Psychotherapy Research, 10*, 239-266.
- Martin, D., Garske, J., & Davis, M. (2000). Relation of the therapeutic alliance with outcome and other variables: A meta-analytic review. *Journal of Consulting and Clinical Psychology, 68*, 438–450.
- Metz CE. (1978). Basic principles of ROC analysis. *Semin nucl med, 8*, 283-298.
- Motiuk, L. L., & Porporino, F. J. (1989). *Offender Risk/Needs Assessment: A Study of Conditional Releases, Research Report # 1*. Research and Statistics Branch. Ottawa: Correction Service of Canada.
- Nunnally, J. (1978). *Psychometric theory*. New York: McGraw-Hill.
- Orlinsky, D. E., & Howard, K. I. (1975). *Varieties of psychotherapeutic experience*. New York: Teachers College Press.

- Pearson, F. S., Lipton, D. S., Cleland, C. M., & Yee, D. S. (2002). The effects of behavioural/cognitive-behavioral programs on recidivism. *Crime & Delinquency*, 48(3) 476-496.
- Raynor, P., Kynch, J., Roberts, C., & Merrington, S. (2000). *Risk and need assessment in probation services: an evaluation*. Home Office Research Study No. 211. London, England: Home Office.
- Rice, M.E. & Harris, G.T. (1995). Violent recidivism: Assessing predictive validity. *Journal of Consulting and Clinical Psychology*, 63 (5), 737-748.
- Rogers, C. R. (1951). *Client-centered therapy*. Cambridge, MA: Riverside Press.
- Rogers, C. R. (1957). The necessary and sufficient conditions of therapeutic personality change. *Journal of Consulting Psychology*, 22, 95-103.
- Rogers, R. C. (1965). *Client centered therapy*. Boston, MA: Houghton Mifflin.
- Ross, E., Polaschek D. L. & Ward, T. (2008). The therapeutic *alliance*: A theoretical revision for offender rehabilitation. *Aggression and Violent Behavior*, 13, 462-480.
- Safran, J. D., & Muran, J. C. (Eds.). (1995).The therapeutic alliance. *In Session: Psychotherapy in Practice*, 1(1).
- Saunders, S. M., Howard, K. I., & Orlinsky, D. E. (1989). The Therapeutic Bond Scales: Psychometric characteristics and relationship to treatment effectiveness. *Psychological Assessment*, 1, 323-330.
- Skeem, J. L. (2004). *The Dual-role Relationship Inventory – Revised (Observer Form)*.

- Skeem, J. L., Emke-Francis, P., & Eno Louden, J. (2006). Probation, mental health, and mandated treatment: A national survey. *Criminal Justice and Behavior*, *33*, 158–184.
- Skeem, J. L., Encandela, J., & Eno Louden, J. (2003). Perspectives on probation and mandated mental health treatment in specialized and traditional probation departments. *Behavioral Sciences & the Law*, *21*, 429–458.
- Skeem, J. L., Eno Louden, J., Polaschek, D. & Camp, J. (2007). Assessing Relationship Quality in Mandated Community Treatment: Blending Care with Control. *Psychological Assessment*, *19*, 397–410.
- Sterba, R. F. (1934). The fate of the ego in analytic therapy. *International Journal of Psychoanalysis*, *115*, 117-126.
- Strong, S. R. (1968). Counseling: An interpersonal influence process. *Journal of Counseling Psychology*, *15*, 215-224.
- Symonds, D., & Horvath, A. O. (2004). Optimizing the alliance in couple therapy. *Family Process*, *43*(4), 443-455.
- Tabachnick, B.G. & Fidell, L.S. (2007). Chapter 4: Cleaning up your act. Screening data prior to analysis. In B.G. Tabachnick & L.S. Fidell (Eds.), *Using Multivariate Statistics*, Fifth Edition (pp. 60-116). Boston: Pearson Education, Inc.
- Taft, C. T., Murphy, C. M., King, D. W., Musser, P. H., & DeDeyn, J. M. (2003). Process and treatment adherence factors in group cognitive-behavioral therapy for partner violence men. *Journal of Consulting and Clinical Psychology*, *71*, 812–820.
- Trotter, C. (1999). *Working with involuntary clients: A guide to practice*. Thousand Oaks, CA: Sage.

Wolfe, B., & Goldfried, M. (1988). Research on psychotherapy integration:

Recommendations and conclusions from an NIMH workshop. *Journal of Consulting and Clinical Psychology, 56*, 448–451.

Wormith, J.S., Althouse, R., Simpson, M., Reitzel, L.R., Fagan, T.J. & Morgan, R.D.

(2007). The rehabilitation and reintegration of offenders: The current landscape and some future directions for correctional psychology. *Criminal Justice and Behaviour, 34*, 879-892.

Zetzel, E. R. (1956). Current concepts of transference. *International Journal of*

*Psychoanalysis, 37*, 369-376.

Appendix A

Working Alliance Inventory – Observer Version (WAI – O)  
Horvath & Greenberg, 1986

**Working Alliance Inventory**

Form O

**Instructions**

On the following pages there are sentences that describe some of the different ways a therapist/client dyad may interact in therapy. If a statement describes the way you always (consistently) perceive the dyad, circle the number 7; if it never applies to the dyad, circle the number 1. Use the numbers in between to describe the variations between these extremes.

This questionnaire is CONFIDENTIAL; neither the therapist, client, nor the agency will see your answers.

Work fast, your first impressions are the ones we would like to see. (PLEASE DON'T FORGET TO RESPOND TO EVERY ITEM.)

Thank you for your cooperation.

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1. There is a sense of discomfort in the relationship.

1	2	3	4	5	6	7
Never	Rarely	Occasionally	Sometimes	Often	Very Often	Always

2. There is agreement about the steps taken to help improve the client's situation.

1	2	3	4	5	6	7
Never	Rarely	Occasionally	Sometimes	Often	Very Often	Always

3. There is concern about the outcome of the sessions.

1	2	3	4	5	6	7
Never	Rarely	Occasionally	Sometimes	Often	Very Often	Always

4. There is agreement about the usefulness of the current activity in therapy (i.e., the client is seeing new ways to look at his/her problem).

1	2	3	4	5	6	7
Never	Rarely	Occasionally	Sometimes	Often	Very Often	Always

5. There is good understanding between the client and therapist.

1	2	3	4	5	6	7
Never	Rarely	Occasionally	Sometimes	Often	Very Often	Always

6. There is a shared perception of the client's goals in therapy.

1	2	3	4	5	6	7
Never	Rarely	Occasionally	Sometimes	Often	Very Often	Always

7. There is a sense of confusion between the client and therapist about what they are doing in therapy.

1	2	3	4	5	6	7
Never	Rarely	Occasionally	Sometimes	Often	Very Often	Always

8. There is a mutual liking between the client and therapist.

1	2	3	4	5	6	7
Never	Rarely	Occasionally	Sometimes	Often	Very Often	Always

9. There is a need to clarify the purpose of the sessions.

1	2	3	4	5	6	7
Never	Rarely	Occasionally	Sometimes	Often	Very Often	Always

10. There is disagreement about the goals of the session.

1	2	3	4	5	6	7
Never	Rarely	Occasionally	Sometimes	Often	Very Often	Always

11. There is a perception that the time spent in therapy is not spent efficiently.

1	2	3	4	5	6	7
Never	Rarely	Occasionally	Sometimes	Often	Very Often	Always

12. There are doubts or a lack of understanding about what participants are trying to accomplish in therapy.

1	2	3	4	5	6	7
Never	Rarely	Occasionally	Sometimes	Often	Very Often	Always

13. There is agreement about what client's responsibilities are in therapy.

1	2	3	4	5	6	7
Never	Rarely	Occasionally	Sometimes	Often	Very Often	Always

14. There is a mutual perception that the goals of the sessions are important for the client.

1	2	3	4	5	6	7
Never	Rarely	Occasionally	Sometimes	Often	Very Often	Always

15. There is the perception that what the therapist and client are doing in therapy is unrelated to the client's current concerns.

1	2	3	4	5	6	7
Never	Rarely	Occasionally	Sometimes	Often	Very Often	Always

16. There is agreement that what the client and therapist are doing in therapy will help the client to accomplish the changes he/she wants.

1	2	3	4	5	6	7
Never	Rarely	Occasionally	Sometimes	Often	Very Often	Always

17. The client is aware that the therapist is genuinely concerned for his/her welfare.

1	2	3	4	5	6	7
Never	Rarely	Occasionally	Sometimes	Often	Very Often	Always

18. There is clarity about what the therapist wants the client to do.

1	2	3	4	5	6	7
Never	Rarely	Occasionally	Sometimes	Often	Very Often	Always

19. The client and the therapist respect each other.

1	2	3	4	5	6	7
Never	Rarely	Occasionally	Sometimes	Often	Very Often	Always

20. The client feels that the therapist is not totally honest about his/her feelings toward her/him.

1	2	3	4	5	6	7
Never	Rarely	Occasionally	Sometimes	Often	Very Often	Always

21. The client feels confident in the therapist's ability to help the client.

1	2	3	4	5	6	7
Never	Rarely	Occasionally	Sometimes	Often	Very Often	Always

22. The client and therapist are working on mutually agreed upon goals.

1	2	3	4	5	6	7
Never	Rarely	Occasionally	Sometimes	Often	Very Often	Always

23. The client feels that the therapist appreciates him/her as a person.

1	2	3	4	5	6	7
Never	Rarely	Occasionally	Sometimes	Often	Very Often	Always

24. There is agreement on what is important for the client to work on.

1	2	3	4	5	6	7
Never	Rarely	Occasionally	Sometimes	Often	Very Often	Always

25. As a result of these sessions there is clarity about how the client might be able to change.

1	2	3	4	5	6	7
Never	Rarely	Occasionally	Sometimes	Often	Very Often	Always

26. There is mutual trust between the client and therapist.

1	2	3	4	5	6	7
Never	Rarely	Occasionally	Sometimes	Often	Very Often	Always

27. The client and therapist have different ideas about what the client's real problems are.

1	2	3	4	5	6	7
Never	Rarely	Occasionally	Sometimes	Often	Very Often	Always

28. Both the client and therapist see their relationship as important to the client.

1	2	3	4	5	6	7
Never	Rarely	Occasionally	Sometimes	Often	Very Often	Always

29. The client fears that if he/she says or does the wrong things, the therapist will stop working with him/her.

1	2	3	4	5	6	7
Never	Rarely	Occasionally	Sometimes	Often	Very Often	Always

30. The client and therapist collaborated on setting the goals for the session.

1	2	3	4	5	6	7
Never	Rarely	Occasionally	Sometimes	Often	Very Often	Always

31. The client is frustrated with what he/she is being asked to do in the therapy.

1	2	3	4	5	6	7
Never	Rarely	Occasionally	Sometimes	Often	Very Often	Always

32. The client and therapist have established a good understanding of the changes that would be good for the client.

1	2	3	4	5	6	7
Never	Rarely	Occasionally	Sometimes	Often	Very Often	Always

33. The therapy process does not make sense to the client.

1	2	3	4	5	6	7
Never	Rarely	Occasionally	Sometimes	Often	Very Often	Always

34. The client doesn't know what to expect as the result of therapy.

1	2	3	4	5	6	7
Never	Rarely	Occasionally	Sometimes	Often	Very Often	Always

35. The client believes that the way they are working with his/her problem is correct.

1	2	3	4	5	6	7
Never	Rarely	Occasionally	Sometimes	Often	Very Often	Always

36. The client feels that the therapist respects and cares about the client, even when the client does things the therapist does not approve of.

1	2	3	4	5	6	7
Never	Rarely	Occasionally	Sometimes	Often	Very Often	Always

Appendix B

Dual Role Relationship Inventory - Revised  
Observer Form (DRI – RO)  
Skeem, 2004

**Dual Role Relationship Inventory: Revised**

Observer Form

**Instructions**

On the following pages are some statements describing some of the different ways a PO and probationer can relate to one another. Below each statement inside there is a seven point scale:

1	2	3	4	5	6	7
Never	Rarely	Occasionally	Sometimes	Often	Very Often	Always

Based on the taped interview, if the statement **always** applies to the way you perceive the PO and probationer relating, circle the number 7; if it **never** applies to the way you perceive the PO and probationer relating circle the number 1. Use the numbers in between to describe the variations between these extremes.

Note that your first impressions often are the most accurate.  
(PLEASE DON'T FORGET TO RESPOND TO **EVERY ITEM.**)

1. The PO cares about the probationer as a person.

1	2	3	4	5	6	7
Never	Rarely	Occasionally	Sometimes	Often	Very Often	Always

2. The probationer feels free to discuss the things that worry him/her with the PO.

1	2	3	4	5	6	7
Never	Rarely	Occasionally	Sometimes	Often	Very Often	Always

3. The PO explains what the probationer is supposed to do/why it would be good to do it.

1	2	3	4	5	6	7
Never	Rarely	Occasionally	Sometimes	Often	Very Often	Always

4. The PO tries very hard to do the right thing by the probationer.

1	2	3	4	5	6	7
Never	Rarely	Occasionally	Sometimes	Often	Very Often	Always

5. When the probationer has trouble doing what is required, the PO talks with him/her and listens to what he/she has to say.

1	2	3	4	5	6	7
Never	Rarely	Occasionally	Sometimes	Often	Very Often	Always

6. If the probationer breaks the rules, the PO calmly explains what has to be done and why.

1	2	3	4	5	6	7
Never	Rarely	Occasionally	Sometimes	Often	Very Often	Always

7. The PO is enthusiastic and optimistic with the probationer.

1	2	3	4	5	6	7
Never	Rarely	Occasionally	Sometimes	Often	Very Often	Always

8. The probationer feels safe enough to be open and honest with the PO.

1	2	3	4	5	6	7
Never	Rarely	Occasionally	Sometimes	Often	Very Often	Always

9. The PO talks down to the probationer.

1	2	3	4	5	6	7
Never	Rarely	Occasionally	Sometimes	Often	Very Often	Always

10. The PO encourages the probationer to work together with him/her.

1	2	3	4	5	6	7
Never	Rarely	Occasionally	Sometimes	Often	Very Often	Always

11. The PO trusts the probationer to be honest with him/her.

1	2	3	4	5	6	7
Never	Rarely	Occasionally	Sometimes	Often	Very Often	Always

12. The PO really considers the probationer's situation when deciding what she/he is supposed to do.

1	2	3	4	5	6	7
Never	Rarely	Occasionally	Sometimes	Often	Very Often	Always

13. The PO seems devoted to helping the probationer overcome his/her problems.

1	2	3	4	5	6	7
Never	Rarely	Occasionally	Sometimes	Often	Very Often	Always

14. The PO puts the probationer down when he/she has done something wrong.

1	2	3	4	5	6	7
Never	Rarely	Occasionally	Sometimes	Often	Very Often	Always

15. The PO is warm and friendly with the probationer.

1	2	3	4	5	6	7
Never	Rarely	Occasionally	Sometimes	Often	Very Often	Always

16. The PO treats the probationer fairly.

1	2	3	4	5	6	7
Never	Rarely	Occasionally	Sometimes	Often	Very Often	Always

17. The PO really cares about the probationer's concerns.

1	2	3	4	5	6	7
Never	Rarely	Occasionally	Sometimes	Often	Very Often	Always

18. The PO praises the probationer for the good things he/she does.

1	2	3	4	5	6	7
Never	Rarely	Occasionally	Sometimes	Often	Very Often	Always

19. If the probationer is going in a bad direction, the PO will talk with him/her before doing anything drastic.

1	2	3	4	5	6	7
Never	Rarely	Occasionally	Sometimes	Often	Very Often	Always

20. The PO truly wants to help the probationer.

1	2	3	4	5	6	7
Never	Rarely	Occasionally	Sometimes	Often	Very Often	Always

21. The PO considers the probationer's views.

1	2	3	4	5	6	7
Never	Rarely	Occasionally	Sometimes	Often	Very Often	Always

22. The probationer feels that the PO is looking to punish him/her.

1	2	3	4	5	6	7
Never	Rarely	Occasionally	Sometimes	Often	Very Often	Always

23. The PO gives the probationer enough of a chance to say what he/she wants to say.

1	2	3	4	5	6	7
Never	Rarely	Occasionally	Sometimes	Often	Very Often	Always

24. The PO makes unreasonable demands of the probationer.

1	2	3	4	5	6	7
Never	Rarely	Occasionally	Sometimes	Often	Very Often	Always

25. The PO expects the probationer to do all the work alone and doesn't provide enough help.

1	2	3	4	5	6	7
Never	Rarely	Occasionally	Sometimes	Often	Very Often	Always

26. The PO knows that he/she can trust the probationer.

1	2	3	4	5	6	7
Never	Rarely	Occasionally	Sometimes	Often	Very Often	Always

27. The probationer feels that his/her PO is someone he/she can trust.

1	2	3	4	5	6	7
Never	Rarely	Occasionally	Sometimes	Often	Very Often	Always

28. The PO takes enough time to understand the probationer.

1	2	3	4	5	6	7
Never	Rarely	Occasionally	Sometimes	Often	Very Often	Always

29. The PO takes the probationer's needs into account.

1	2	3	4	5	6	7
Never	Rarely	Occasionally	Sometimes	Often	Very Often	Always

30. The PO shows the probationer respect in absolutely all his/her dealings with him/her.

1	2	3	4	5	6	7
Never	Rarely	Occasionally	Sometimes	Often	Very Often	Always

Appendix C

Effective Correctional Counseling (ECC)  
Bourgon, Bonta, Rugge, Scott & Yessine, 2009

Available upon request.

## Appendix D

Level of Service Inventory – Revised (LSI-R)  
 Criminal History Subcomponent  
 Andrews & Bonta, 1995

**Criminal History**

No	Yes	1. Any prior adult convictions? Number: _____
No	Yes	2. Two or more prior convictions?
No	Yes	3. Three or more prior convictions?
No	Yes	4. Three or more present offenses? Number: _____
No	Yes	5. Arrested under age 16?
No	Yes	6. Ever incarcerated upon conviction?
No	Yes	7. Escape history from a correctional facility?
No	Yes	8. Ever punished for institutional misconduct? Number: _____
No	Yes	9. Charge laid or probation/parole suspended during prior community supervision?
No	Yes	10. Official record of assault/violence?

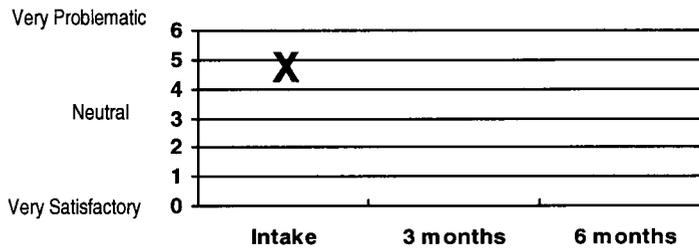
Appendix E

Probation Officer Assessment  
of Severity of Client Criminogenic Needs  
Bourgon, Bonta, Rugge, Scott & Yessine, 2009

**Needs Monitoring**

At three distinct time periods (i.e., intake, 3 months, 6 months), you are asked to rate eight needs in terms of the level or severity of that need being a problem, on a scale of 0 (Very Satisfactory) to 6 (Very Problematic). Rating the needs on the graphs below using an "X" for the given time period will help you visually observe changes over time on these needs. Your ratings should be based on all available information including your risk/need assessment, file information, and all contacts.

**E.g., Procriminal Attitudes**



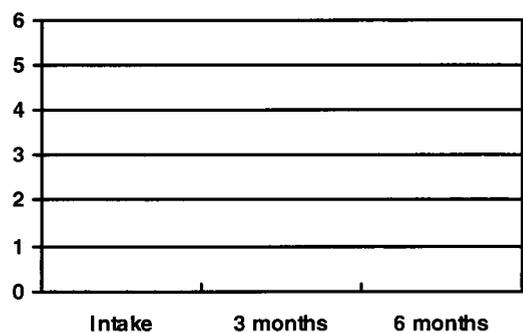
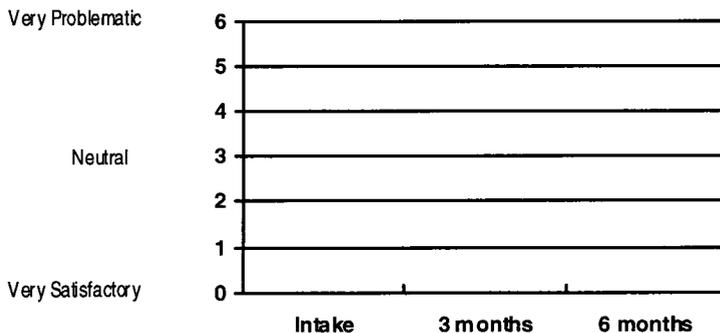
Please rate the degree to which the following needs are a problem at this time (i.e., at intake). Indicate the severity by placing an "X" on the line that best represents the client's current situation. The scale ranges from 0 (Very Satisfactory) to 6 (Very Problematic).

**1. Procriminal Attitudes**

Refers to attitudes, values, and beliefs that promote criminal and other related behaviours (e.g., non-compliance).

**2. Procriminal Personality Pattern**

Refers to problems with impulsiveness, self-control, self-management, aggression, and violence (general, domestic, and sexual).

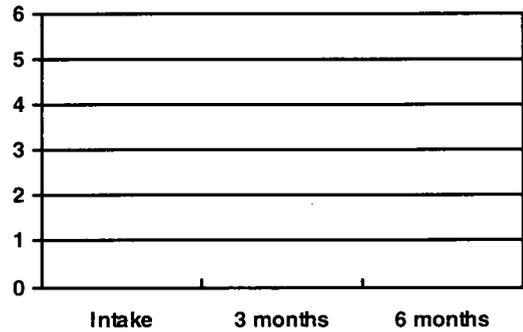
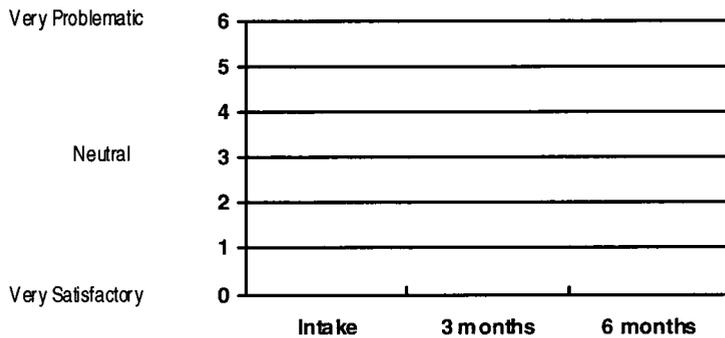


**3. Family and Marital Relations**

Refers to the instability and procriminal influence of interpersonal relationships with family of origin, marital relationship, and/or a significant other.

**4. Associates and Peer Group**

Refers to the degree to which friends and associates are a procriminal influence (i.e., they hold and reinforce procriminal attitudes and behaviours).

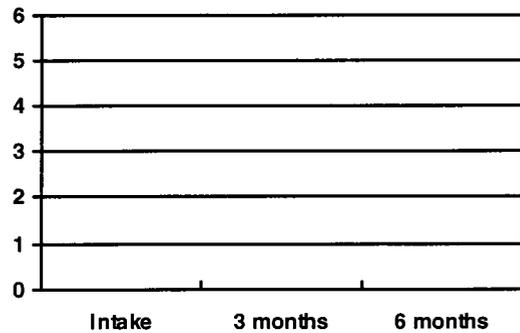
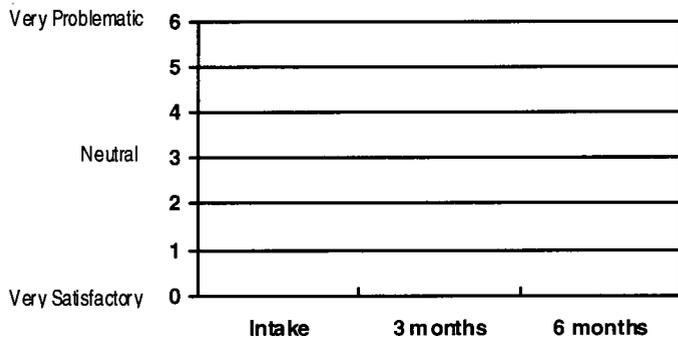


**5. Substance Abuse Problems**

Refers to the use/misuse of alcohol and/or drugs and related problems.

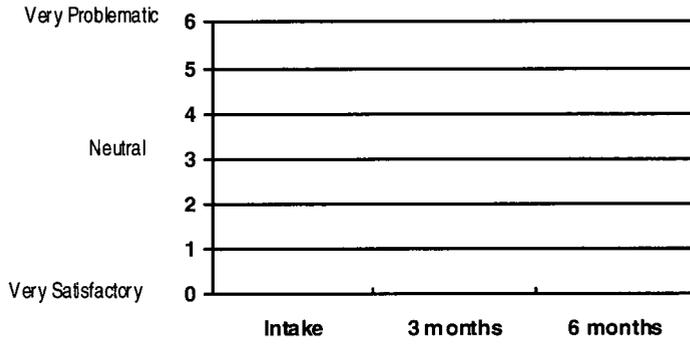
**6. School/Employment Problems**

Refers to instability and poor performance in employment, lack of vocational skills, and/or poor academic performance.



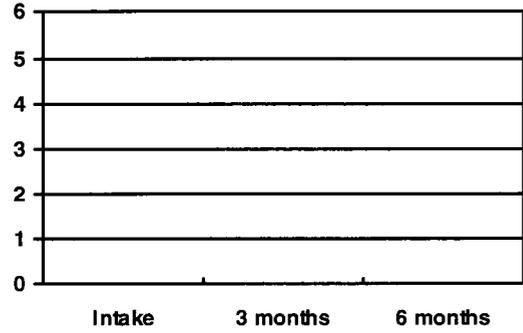
**7. Housing, Financial, and Leisure Problems**

Refers to instability and difficulties with housing, finances, and/or poor use of leisure and recreation time.



**8. Other – Specify:**

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## Appendix F

## Interrater Reliability at Item Level

Table 17.

*Intraclass Correlation Coefficients (ICC), Mean (M) Deviation Scores, and Percent Agreement within One Point for Measure Items.*

Measure/Item	ICC Single Measure	Deviation Score		% ≤ 1 Dev
		M	SD	
WAI				
WAI 1	.356	.714	.784	81.0
WAI 2	.154	1.191	.814	66.7
WAI 3	.125	1.143	.910	61.9
WAI 4	.181	.952	.973	76.2
WAI 5	.286	1.000	.707	76.2
WAI 6	.123	1.429	.926	47.6
WAI 7	.025	1.486	1.030	47.6
WAI 8	.000	1.238	1.091	57.1
WAI 9	.015	1.429	.926	71.4
WAI 10	.137	1.476	1.123	57.1
WAI 11	.081	1.810	1.327	47.6
WAI 12	.000	1.571	1.028	57.1
WAI 13	.139	1.095	.831	71.4
WAI 14	.389	1.143	.854	66.7
WAI 15	.096	1.905	1.136	38.1
WAI 16	.021	1.619	.865	42.9
WAI 17	.297	.762	.995	81.0
WAI 18	.335	.905	.768	85.7
WAI 19	.226	.952	.901	71.4
WAI 20	.133	1.191	.873	61.9
WAI 21	.284	.810	.750	81.0
WAI 22	.252	1.238	1.044	52.4
WAI 23	.274	.905	.831	81.0
WAI 24	.126	1.095	.831	81.0
WAI 25	.076	1.238	.768	66.7
WAI 26	.312	1.095	.889	66.7
WAI 27	.291	1.000	1.000	71.4
WAI 28	.271	.952	.498	90.5
WAI 29	.020	2.143	1.015	33.3
WAI 30	.363	1.476	.814	61.9
WAI 31	.000	1.429	1.076	47.6
WAI 32	.286	1.000	.548	85.7
WAI 33	.321	1.048	.921	76.2
WAI 34	.225	1.143	1.014	61.9

Table 17 Cont'

	WAI 35	.315	1.048	.590	81.0
	WAI 36	.194	1.095	1.091	71.4
DRI - R	DRI - R 1	.296	.905	.889	76.2
	DRI - R 2	.478	1.048	.805	66.7
	DRI - R 3	.471	.810	.750	90.5
	DRI - R 4	.180	1.000	.837	76.2
	DRI - R 5	.154	.809	.680	85.7
	DRI - R 6	.198	.619	.669	90.5
	DRI - R 7	.429	1.048	.865	71.4
	DRI - R 8	.264	1.095	.768	66.7
	DRI - R 9	.089	1.000	.949	76.2
	DRI - R 10	.507	.809	.814	76.2
	DRI - R 11	.109	.952	.805	81.0
	DRI - R 12	.050	1.381	.669	52.4
	DRI - R 13	.330	1.000	.707	76.2
	DRI - R 14	.964	1.100	.889	76.2
	DRI - R 15	.515	.952	.740	76.2
	DRI - R 16	.495	.571	.676	90.5
	DRI - R 17	.282	.857	.792	76.2
	DRI - R 18	.311	.905	.831	81.0
	DRI - R 19	.025	.714	.784	90.5
	DRI - R 20	.216	1.000	.775	81.0
	DRI - R 21	.161	.810	.750	81.0
	DRI - R 22	.127	1.000	.775	81.0
	DRI - R 23	.181	.524	.680	90.5
	DRI - R 24	.231	.905	.539	90.5
	DRI - R 25	.196	1.333	1.155	71.4
	DRI - R 26	.101	.905	.831	81.0
	DRI - R 27	.256	1.143	.655	71.4
	DRI - R 28	.231	.714	.644	90.5
	DRI - R 29	.135	1.286	.717	57.1
	DRI - R 30	.125	.952	1.02	71.4
ECC	ECC 1	.909	.367	.556	96.7
	ECC 2	.977	.033	.183	100
	ECC 3	1.0	0	0	100
	ECC 4	.985	.067	.254	100
	ECC 5	1.0	0	0	100
	ECC 6	.961	.233	.430	100
	ECC 7	.828	.133	.434	96.7
	ECC 8	.985	.100	.305	100
	ECC 9	1.0	0	0	100

Table 17 Cont'

ECC 10	.871	.200	.805	96.7
ECC 11	.707	.200	.731	93.3
ECC 12	.909	.500	.675	96.7
ECC 13	.842	.400	.430	100
ECC 14	.910	.233	.484	96.7
ECC 15	1.0	.200	0	100
ECC 16	.991	0	.183	100
ECC 17	1.0	.033	0	100
ECC 18	.734	0	.466	100
ECC 19	.975	.300	.379	100
ECC 20	.872	.167	.563	96.7
ECC 21	.937	.400	.403	96.7
ECC 22	.934	.100	.403	96.7
ECC 23	.812	.100	.718	93.3
ECC 24	1.0	.367	0	100
ECC 25	.985	0	.305	100
ECC 26	.893	.100	.855	93.3
ECC 27	.843	.400	.183	100
ECC 28	1.0	.033	0	100
ECC 29	.973	0	.254	100
ECC 30	.908	.067	.346	100
ECC 31	.889	.133	.346	100
ECC 32	.893	.133	.254	100
ECC 33	.945	.067	.305	100

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*Note.* WAI: Working Alliance Inventory. DRI – R: Dual-role Relationships Inventory – Revised.  
ECC: Effective Correctional Counseling.

## Appendix G

## Tape 1 Tables

Table 18.

*Means (M) and Standard Deviations (SD) for Tape 1.*

Measure/Subscale		<i>M</i>	<i>SD</i>
WAI	Task	46.74	9.91
	Bond	51.10	9.39
	Goal	46.31	9.78
	Total	143.43	28.63
DRI – R	Caring-Fairness	87.60	13.26
	Trust	21.60	3.80
	Toughness	28.82	3.88
	Total	138.04	19.64
ECC	Structure	14.29	7.56
	Relationship	13.96	3.51
	Behavioural	11.03	3.64
	Cognitive	1.90	3.64
	Total	41.18	14.05

*Note.* WAI: Working Alliance Inventory. DRI – R: Dual-role Relationships Inventory – Revised. ECC: Effective Correctional Counseling.

Table 19.

*Reliability Statistics of Measures using Chronbach's Alpha ( $\alpha$ ) for Tape 1.*

Measure/Subscales	Cronbach's Alpha $\alpha$	# Items
WAI		
Task	.955	12
Bond	.949	12
Goal	.945	12
Total	.980	36
DRI – R		
Caring-Fairness	.963	20
Trust	.914	5
Toughness	.855	5
Total	.972	30
ECC		
Structure	.755	8
Relationship	.292	5
Behavioural	.466	7
Cognitive	.739	4
Total	.846	24

*Note.* WAI: Working Alliance Inventory. DRI – R: Dual-role Relationships Inventory – Revised. ECC: Effective Correctional Counseling.

Table 20.

*Correlation (r) of measures (WAI, DRI – R and ECC) for Tape 1.*

	WAI				DRI – R			
	Task	Bond	Goal	Total	Caring-Fairness	Trust	Toughness	Total
<b>DRI – R</b>								
Caring-Fairness	.717**	.776**	.694**	.774**				
Trust	.734**	.891**	.702**	.823**				
Toughness	.615**	.757**	.627**	.694**				
Total	.746**	.844**	.726**	.817**				
<b>ECC</b>								
Structure	.253*	.186	.264*	.233*	.415**	.097	.214	.341**
Relationship	.307**	.223	.329**	.320**	.385**	.148	.250*	.336*
Behavioural	.147	.095	.167	.150	.357**	-.046	.108	.252*
Cognitive	.111	.065	.104	.108	.167	-.022	.109	.131
Total	.288*	.203	.305**	.282*	.477**	.069	.240*	.382**

*Note.* WAI: Working Alliance Inventory. DRI – R: Dual-role Relationships Inventory – Revised. ECC: Effective Correctional Counseling.

\*  $p < .05$  \*\*  $p < .01$

Table 21.

*Correlation (r) between Measures (Totals and Subscales) and Number of Missed Appointments for Tape 1.*

Measure/Subscale	Number of Missed Appointments	
	6 months	12 months
WAI		
Task	-.122	-.107
Bond	-.166	-.114
Goal	-.182	.137
Total	-.119	.212
DRI – R		
Caring-Fairness	-.052	.019
Trust	-.098	-.124
Toughness	-.046	-.067
Total	-.064	-.026
ECC		
Structure	-.156	.007
Relationship	.016	.237
Behavioural	.275*	.018
Cognitive	-.077	-.081
Total	-.091	.113

*Note.* WAI: Working Alliance Inventory. DRI – R: Dual-role Relationships Inventory – Revised. ECC: Effective Correctional Counseling.

\*  $p < .05$

Table 22.

*Preliminary Multiple Regression on Tape 1 Subscale Scores of Measures Predicting Number of Missed Appointments at Six and 12 months.*

Measures/Subscale	Number of Missed Appointments					
	6 Month			12 Month		
	B	SE B	$\beta$	B	SE B	$\beta$
<b>WAI</b>						
Task	.227	.106	.982*	.268	.174	.713
Bond	-.052	.092	-.221	.070	.151	.181
Goal	-.258	.109	-1.123*	-.377	.180	-.998*
<b>DRI – R</b>						
Caring-Fairness	.013	.062	.072	.074	.111	.251
Trust	.016	.211	.027	-.201	.353	-.213
Toughness	.076	.151	.132	-.137	.295	-.132
<b>ECC</b>						
Structure	-.043	.058	-.132	-.027	.101	-.050
Relationship	.063	.113	.100	.269	.187	.257
Behavioural	.026	.089	.054	.043	.153	.052
Cognitive	-.022	.121	-.029	-.086	.201	-.072

*Note.* WAI: Working Alliance Inventory. DRI – R: Dual-role Relationships Inventory – Revised. ECC: Effective Correctional Counseling. Missed Appointments at six months  $R^2 = .188$ . Missed Appointments at 12 months  $R^2 = .200$ .

\*  $p < .05$

Table 23.

*Preliminary Multiple Regression on Tape 1 Total Scores of Measures Predicting Number of Missed Appointments at Six and 12 months.*

Measures/Subscale	Number of Missed Appointments					
	6 Month			12 Month		
	B	SE B	$\beta$	B	SE B	$\beta$
WAI						
Total	-.023	.017	-.292	-.031	.029	-.244
DRI – R						
Total	.023	.027	.196	.025	.045	.126
ECC						
Total	-.015	.025	-.088	.036	.042	.126

*Note.* WAI: Working Alliance Inventory. DRI – R: Dual-role Relationships Inventory – Revised. ECC: Effective Correctional Counseling. Missed Appointments at six months  $R^2 = .042$ . Missed Appointments at 12 months  $R^2 = .040$ .

\*  $p < .05$

Table 24.

*Correlation (r) between Measures (totals and subscales) and Changes in Severity of Criminogenic Needs at Three and Six months for Tape 1.*

Measure/Subscale		Changes in Severity of Criminogenic Needs	
		3 Months	6 Months
WAI			
	Task	-.162	-.311*
	Bond	-.174	-.338*
	Goal	-.134	-.289*
	Total	-.177	-.339*
DRI – R			
	Caring-Fairness	-.181	-.289*
	Trust	-.224	-.446**
	Toughness	.038	-.184
	Total	-.158	-.316*
ECC			
	Structure	-.136	-.237
	Relationship	.053	-.028
	Behavioural	-.048	.178
	Cognitive	-.097	-.064
	Total	-.101	-.090

*Note.* WAI: Working Alliance Inventory. DRI – R: Dual-role Relationships Inventory – Revised. ECC: Effective Correctional Counseling.

\*  $p < .05$  \*\*  $p < .01$

Table 25.

*Preliminary Multiple Regression for Tape 1 Subscale Scores Predicting Changes in Severity of Criminogenic Needs at Three and Six Months.*

Measures/Subscale	Changes in Severity of Criminogenic Needs					
	3 Months			6 Months		
	B	SE B	$\beta$	B	SE B	$\beta$
<b>WAI</b>						
Task	.054	.244	.090	.207	.297	.274
Bond	.063	.220	.101	.158	.268	.199
Goal	-.029	.249	-.048	-.217	.303	-.284
<b>DRI – R</b>						
Caring-Fairness	-.208	.134	-.458	-.158	.163	-.275
Trust	-.891	.485	-.571	-1.530	.590	-.776
Toughness	1.121	.345	.740**	1.281	.420	.668
<b>ECC</b>						
Structure	-.049	.134	-.062	-.237	.163	-.238
Relationship	.193	.238	.115	.209	.290	.098
Behavioural	-.041	.205	-.031	.199	.249	.119
Cognitive	-.126	.247	-.078	.049	.300	.024

*Note.* WAI: Working Alliance Inventory. DRI – R: Dual-role Relationships Inventory – Revised. ECC: Effective Correctional Counseling. Needs Change at three months  $R^2 = .236$ . Needs Change at six months  $R^2 = .293$ .

\*\*  $p < .01$

Table 26.

*Preliminary Multiple Regression for Tape 1 Total Scores Predicting Changes in Severity of Criminogenic Needs at Three and Six Months.*

Measures	Changes in Severity of Criminogenic Needs					
	3 Month			6 Month		
	B	SE B	$\beta$	B	SE B	$\beta$
WAI						
Total	-.031	.044	-.150	-.056	.055	-.215
DRI – R						
Total	-.004	.067	-.014	-.007	.085	-.018
ECC						
Total	-.023	.056	-.054	.013	.070	.024

*Note.* WAI: Working Alliance Inventory. DRI – R: Dual-role Relationships Inventory – Revised. ECC: Effective Correctional Counseling. Needs Change at three months  $R^2 = .034$ . Needs Change at six months  $R^2 = .050$ .

Table 27.

*Forward-Stepping Multiple Regression for Tape 1 Subscale Scores Predicting Changes in Severity of Criminogenic Needs at Three and Six Months.*

Measures/Subscale	Changes in Severity of Criminogenic Needs					
	3 Month			6 Month		
	B	SE B	$\beta$	B	SE B	$\beta$
WAI						
	Task					
	Bond					
	Goal					
DRI – R						
	Caring-Fairness					
	Trust			-.627	.228	-.318**
	Toughness					
ECC						
	Structure					
	Relationship					
	Behavioural					
	Cognitive					

*Note.* WAI: Working Alliance Inventory. DRI – R: Dual-role Relationships Inventory – Revised. ECC: Effective Correctional Counseling. Needs Change at six months  $R^2 = .120$ .

\*\*  $p < .01$

Table 28.

*Correlation (r) between Measures (Totals and Subscales) and Recidivism (One and Two years) for Tape 1.*

Measure/Subscale	Recidivism	
	1 Year	2 Year
<b>WAI</b>		
Task	-.181	-.222
Bond	-.181	-.364**
Goal	-.186	-.249
Total	-.176	-.340*
<b>DRI – R</b>		
Caring-Fairness	-.149	-.178
Trust	-.202	-.327*
Toughness	-.106	-.228
Total	-.157	-.223
<b>ECC</b>		
Structure	.161	.235
Relationship	.028	-.026
Behavioural	.087	.044
Cognitive	.022	-.069
Total	.127	.117

*Note.* WAI: Working Alliance Inventory. DRI – R: Dual-role Relationships Inventory – Revised. ECC: Effective Correctional Counseling.

\*  $p < .05$

Table 29.

*Predictive Accuracy (ROC) of Measures for Predicting 1 and 2 Year Recidivism (Tape 1).*

Measure/Subscale	1 Year Recidivism	2 Year Recidivism
	ROC	ROC
<b>WAI</b>		
Task	.665	.669
Bond	.651	.770*
Goal	.656	.694*
Total	.651	.760*
<b>DRI – R</b>		
Caring-Fairness	.656	.660
Trust	.667	.726*
Toughness	.613	.699*
Total	.649	.685
<b>ECC</b>		
Structure	.394	.308*
Relationship	.459	.494
Behavioural	.434	.472
Cognitive	.542	.544
Total	.417	.415

*Note.* WAI: Working Alliance Inventory. DRI – R: Dual-role Relationships Inventory – Revised.  
ECC: Effective Correctional Counseling.

\*  $p < .05$

Table 30.

*Preliminary Logistic Regression on Subscale of Measures (WAI, DRI – R and ECC) and Recidivism at One and Two Years for Tape 1.*

Measures/Subscale	1 Year Recidivism				2 Year Recidivism			
	$\beta$	SE	Wald	OR	$\beta$	SE	Wald	OR
WAI								
Task	.097	.150	.418	1.102	.099	.173	.324	1.104
Bond	.018	.122	.022	1.018	-.479	.207	5.359	.619*
Goal	-.158	.150	1.098	.854	-.029	.167	.031	.971
DRI – R								
Caring-Fairness	-.157	.088	3.211	.855	.029	.107	.073	1.029
Trust	-.039	.269	.021	.962	.389	.347	1.261	1.476
Toughness	.307	.226	1.849	1.360	.118	.264	.199	1.125
ECC								
Structure	.200	.087	5.218	1.221	.307	.121	6.374	1.359*
Relationship	.023	.124	.034	1.023	-.111	.131	.715	.895
Behavioural	.076	.108	.489	1.078	-.037	.130	.081	.964
Cognitive	-.191	.140	1.881	.826	-.335	.223	2.246	.716

*Note.* WAI: Working Alliance Inventory. DRI – R: Dual-role Relationships Inventory – Revised. ECC: Effective Correctional Counseling. Recidivism at One Year Cox & Snell  $R^2 = .147$ . Recidivism at Two Years Cox & Snell  $R^2 = .326$ .

\* $p < .05$

Table 31.

*Preliminary Logistic Regression on Measure Total Scores (WAI, DRI – R and ECC) and Recidivism at One and Two Years for Tape 1.*

Measures		1 Year Recidivism				2 Year Recidivism			
		$\beta$	<i>SE</i>	Wald	OR	$\beta$	<i>SE</i>	Wald	OR
WAI									
	Total	-.013	.021	.389	.987	-.049	.024	4.330	.952*
DRI – R									
	Total	-.021	.030	.493	.979	.009	.031	.084	1.009
ECC									
	Total	.044	.027	2.664	1.045	.061	.038	2.566	1.063

*Note.* WAI: Working Alliance Inventory. DRI – R: Dual-role Relationships Inventory – Revised. ECC: Effective Correctional Counseling. Recidivism at One Year Cox & Snell  $R^2 = .068$ . Recidivism at Two Years Cox & Snell  $R^2 = .176$ .

\* $p < .05$

## Appendix H

## Tape 2 Tables

Table 32.

*Means (M) and Standard Deviations (SD) for Tape 2.*

Measure/Subscale		<i>M</i>	<i>SD</i>
WAI			
	Task	45.85	10.71
	Bond	50.32	10.47
	Goal	45.17	10.73
	Total	141.33	30.37
DRI – R			
	Caring-Fairness	86.81	16.88
	Trust	21.88	4.47
	Toughness	28.53	6.06
	Total	137.21	22.16
ECC			
	Structure	12.50	6.28
	Relationship	12.63	2.85
	Behavioural	10.10	3.60
	Cognitive	1.74	3.48
	Total	36.96	12.82

*Note.* WAI: Working Alliance Inventory. DRI – R: Dual-role Relationships Inventory – Revised. ECC: Effective Correctional Counseling.

Table 33.

*Reliability of Measures using Chronbach's Alpha ( $\alpha$ ) Tape 2.*

Measure/Subscales	Cronbach's Alpha $\alpha$	# Items
WAI		
Task	.965	12
Bond	.956	12
Goal	.956	12
Total	.983	36
DRI – R		
Caring-Fairness	.971	20
Trust	.939	5
Toughness	.885	5
Total	.977	30
ECC		
Structure	.688	8
Relationship	.470	5
Behavioural	.326	7
Cognitive	.726	4
Total	.849	24

*Note.* WAI: Working Alliance Inventory. DRI – R: Dual-role Relationships Inventory – Revised. ECC: Effective Correctional Counseling.

Table 34.

*Correlation (r) of Measures (WAI, DRI – R and ECC) for Tape 2.*

	WAI				DRI – R			
	Task	Bond	Goal	Total	Caring-Fairness	Trust	Toughness	Total
<b>DRI – R</b>								
Caring-Fairness	.593**	.810**	.552**	.683**				
Trust	.692**	.805**	.684**	.762**				
Toughness	.500**	.487**	.542**	.536**				
Total	.728**	.912**	.706**	.820**				
<b>ECC</b>								
Structure	.409**	.359**	.389**	.405**	.438**	.232*	.293*	.461**
Relationship	.473**	.353**	.449**	.447**	.434**	.231	.278*	.453**
Behavioural	.229	.278*	.246*	.263*	.340**	.137	.129	.322**
Cognitive	.301*	.276*	.242*	.287*	.303**	.243*	.201	.335**
Total	.451**	.407**	.425**	.449**	.488**	.269*	.296*	.507**

*Note.* WAI: Working Alliance Inventory. DRI – R: Dual-role Relationships Inventory – Revised.  
 ECC: Effective Correctional Counseling.

\*  $p < .05$  \*\*  $p < .01$

Table 35.

*Correlation (r) between Measures (Totals and Subscales) and Number of Missed Appointments for Tape 2.*

Measure/Subscale		Number of Missed Appointments	
		6 months	12 months
WAI			
	Task	.019	.022
	Bond	.048	.073
	Goal	.019	.020
	Total	.030	.041
DRI – R			
	Caring-Fairness	-.113	-.038
	Trust	.083	.062
	Toughness	.165	.142
	Total	-.025	.024
ECC			
	Structure	-.163	-.083
	Relationship	-.070	-.045
	Behavioural	-.032	-.024
	Cognitive	-.112	-.107
	Total	-.132	-.084

*Note.* WAI: Working Alliance Inventory. DRI – R: Dual-role Relationships Inventory – Revised. ECC: Effective Correctional Counseling.

Table 36.

*Preliminary Multiple Regression on Subscales of Measures and Number of Missed Appointments at Six and 12 Months for Tape 2.*

Measures	Number of Missed Appointments					
	B	6 Months SE B	$\beta$	B	12 Months SE B	$\beta$
WAI						
Task	.049	.116	.233	.074	.216	.213
Bond	.123	.094	.602	.168	.161	.504
Goal	-.093	.116	-.462	-.144	.217	-.441
DRI – R						
Caring-Fairness	-.057	.045	-.444	-.047	.077	-.226
Trust	.013	.131	.025	-.074	.225	-.091
Toughness	.032	.080	.092	.085	.138	.150
ECC						
Structure	-.108	.085	-.259	-.090	.148	-.129
Relationship	.074	.169	.089	.036	.299	.026
Behavioural	.129	.118	.211	.140	.207	.141
Cognitive	-.133	.133	-.166	-.228	.234	-.176

*Note.* WAI: Working Alliance Inventory. DRI – R: Dual-role Relationships Inventory – Revised. ECC: Effective Correctional Counseling. Missed Appointments at six months  $R^2 = .140$ . Missed Appointments at 12 months  $R^2 = .082$ .

Table 37.

*Preliminary Multiple Regression on Measure Total Scores and Number of Missed Appointments at Six and 12 Months for Tape 2.*

Measures	Number of Missed Appointments						
	6 Months			12 Months			
	B	SE B	$\beta$	B	SE B	$\beta$	
WAI							
	Total	.012	.017	.163	.009	.028	.073
DRI – R							
	Total	-.008	.024	-.078	.003	.040	.020
ECC							
	Total	-.032	.031	-.164	-.040	.052	-.123

*Note.* WAI: Working Alliance Inventory. DRI – R: Dual-role Relationships Inventory – Revised. ECC: Effective Correctional Counseling. Missed Appointments at six months  $R^2 = .029$ . Missed Appointments at 12 months  $R^2 = .014$ .

Table 38.

*Correlation (r) between Measures and Changes in Severity of Criminogenic Needs at Three and Six Months for Tape 2.*

Measure/Subscale	Changes in Severity of Criminogenic Needs		
	3 Months	6 Months	
WAI			
	Task	-.331**	-.408**
	Bond	-.347**	-.440**
	Goal	-.344**	-.453**
	Total	-.357**	-.449**
DRI – R			
	Caring-Fairness	-.295*	-.379**
	Trust	-.274*	-.421**
	Toughness	-.135	-.278
	Total	-.318**	-.394**
ECC			
	Structure	-.118	-.281
	Relationship	-.215	-.288*
	Behavioural	-.111	-.091
	Cognitive	-.207	-.209
	Total	-.195	-.280

*Note.* WAI: Working Alliance Inventory. DRI – R: Dual-role Relationships Inventory – Revised. ECC: Effective Correctional Counseling.

\*  $p < .05$  \*\*  $p < .01$

Table 39.

*Preliminary Multiple Regression for Tape 2 Subscale Scores Predicting Changes in Severity of Criminogenic Needs at 3 and 6 months.*

Measures/Subscales	Changes in Severity of Criminogenic Needs					
	3 Months			6 Months		
	B	SE B	$\beta$	B	SE B	$\beta$
WAI						
Task	.167	.265	.292	.498	.336	.688
Bond	-.111	.222	-.196	-.079	.281	-.109
Goal	-.257	.279	-.442	-.566	.354	-.769
DRI – R						
Caring-Fairness	-.004	.102	-.010	-.039	.130	-.088
Trust	-.032	.299	-.024	-.232	.378	-.138
Toughness	.113	.187	.117	.210	.237	.171
ECC						
Structure	.149	.176	.150	.135	.223	.107
Relationship	-.415	.375	-.182	-.519	.476	-.180
Behavioural	.074	.253	.043	.229	.321	.104
Cognitive	-.329	.266	-.194	-.335	.337	-.156

*Note.* WAI: Working Alliance Inventory. DRI – R: Dual-role Relationships Inventory – Revised. ECC: Effective Correctional Counseling. Needs Change at three months  $R^2 = .174$ . Needs Change at six months  $R^2 = .171$ .

Table 40.

*Preliminary Multiple Regression for Tape 2 Subscale Scores Predicting Changes in Severity of Criminogenic Needs at 3 and 6 months.*

Measures	Changes in Severity of Criminogenic Needs					
	3 Months			6 Months		
	B	SE B	$\beta$	B	SE B	$\beta$
WAI						
Total	-.060	.041	-.297	-.048	.052	-.187
DRI – R						
Total	-.013	.057	-.049	-.056	.074	-.164
ECC						
Total	-.024	.065	-.049	.016	.084	.027

*Note.* WAI: Working Alliance Inventory. DRI – R: Dual-role Relationships Inventory – Revised. ECC: Effective Correctional Counseling. Needs Change at three months  $R^2 = .131$ . Needs Change at six months  $R^2 = .105$ .

Table 41.

*Forward-Stepping Multiple Regression for Tape 2 Subscale Scores Predicting Changes in Severity of Criminogenic Needs at 3 and 6 months.*

Measures/Subscales		Changes in Severity of Criminogenic Needs					
		3 Months			6 Months		
		B	SE B	$\beta$	B	SE B	$\beta$
WAI							
	Task						
	Bond	-.197	.065	-.347**	-.231	.083	-.322**
	Goal						
DRI – R							
	Caring-Fairness						
	Trust						
	Toughness						
ECC							
	Structure						
	Relationship						
	Behavioural						
	Cognitive						

*Note.* WAI: Working Alliance Inventory. DRI – R: Dual-role Relationships Inventory – Revised. ECC: Effective Correctional Counseling. Needs Change at three months  $R^2 = .120$ . Needs Change at six months  $R^2 = .104$ .

\*\*  $p < .01$

Table 42.

*Forward-Stepping Multiple Regression for Tape 2 Total Scores Predicting Changes in Severity of Criminogenic Needs at 3 and 6 months.*

Measures	Changes in Severity of Criminogenic Needs						
	3 Months			6 Months			
	B	SE B	$\beta$	B	SE B	$\beta$	
WAI							
	Total	-.072	.023	-.357**	-.079	.029	-.311**
DRI – R							
	Total						
ECC							
	Total						

*Note.* WAI: Working Alliance Inventory. DRI – R: Dual-role Relationships Inventory – Revised. ECC: Effective Correctional Counseling. Needs Change at three months  $R^2 = .128$ . Needs Change at six months  $R^2 = .097$ .

\*\*  $p < .01$

Table 43.

*Correlation (r) between Measures (WAI, DRI – R and ECC) and Recidivism at One and Two Years for Tape 2.*

Measure/Subscale		Recidivism	
		1 Year	2 Year
WAI			
	Task	-.130	-.068
	Bond	-.236*	-.232
	Goal	-.138	-.040
	Total	-.176	-.118
DRI – R			
	Caring-Fairness	-.288*	-.302*
	Trust	-.170	-.268*
	Toughness	.105	.077
	Total	-.225	-.265*
ECC			
	Structure	.109	.024
	Relationship	-.032	-.050
	Behavioural	-.045	.064
	Cognitive	-.039	-.150
	Total	.023	-.021

*Note.* WAI: Working Alliance Inventory. DRI – R: Dual-role Relationships Inventory – Revised. ECC: Effective Correctional Counseling.

\*  $p < .05$

Table 44.

*Predictive Accuracy (ROC) of Measures for Predicting 1 and 2 Year Recidivism (Tape 2).*

Measure/Subscale	1 Year Recidivism ROC	2 Year Recidivism ROC
<b>WAI</b>		
Task	.593	.552
Bond	.694	.710*
Goal	.612	.534
Total	.635	.597
<b>DRI – R</b>		
Caring-Fairness	.684	.677
Trust	.606	.656
Toughness	.562	.606
Total	.681	.693*
<b>ECC</b>		
Structure	.441	.470
Relationship	.523	.549
Behavioural	.518	.430
Cognitive	.581	.603
Total	.492	.491

*Note.* WAI: Working Alliance Inventory. DRI – R: Dual-role Relationships Inventory – Revised.  
ECC: Effective Correctional Counseling.

\*  $p < .05$

Table 45.

*Preliminary Logistic Regression on Subscales Scores of Measures (WAI, DRI – R and ECC) and Recidivism at One and Two Years for Tape 2.*

Measures/Subscales	1 Year Recidivism				2 Year Recidivism			
	$\beta$	SE	Wald	OR	$\beta$	SE	Wald	OR
WAI								
Task	.097	.150	.418	1.102	.085	.158	.291	1.089
Bond	.018	.122	.022	1.018	-.076	.113	.454	.926
Goal	-.158	.150	1.098	.854	.076	.162	.219	1.079
DRI – R								
Caring-Fairness	-.157	.088	3.211	.855	-.020	.056	.124	.981
Trust	-.039	.269	.021	.962	-.308	.191	2.597	.735
Toughness	.307	.226	1.849	1.360	.082	.111	.545	1.085
ECC								
Structure	.200	.087	5.218	1.221*	.175	.150	1.360	1.191
Relationship	.023	.124	.034	1.023	-.479	.304	2.485	.619
Behavioural	.076	.108	.489	1.078	.148	.125	1.386	1.159
Cognitive	-.191	.140	1.881	.826	-.310	.259	1.433	.734

*Note.* WAI: Working Alliance Inventory. DRI – R: Dual-role Relationships Inventory – Revised. ECC: Effective Correctional Counseling. Recidivism at One Year Cox & Snell  $R^2 = .165$ . Recidivism at Two Years Cox & Snell  $R^2 = .247$ .

\* $p < .05$

Table 46.

*Preliminary Logistic Regression on Measure Total Scores (WAI, DRI – R and ECC) and Recidivism at One and Two Years for Tape 2.*

Measures		1 Year Recidivism				2 Year Recidivism			
		$\beta$	SE	Wald	OR	$\beta$	SE	Wald	OR
WAI									
	Total	-.013	.021	.389	.987	.030	.022	1.967	1.031
DRI – R									
	Total	-.021	.030	.493	.979	-.077	.033	5.456	.926*
ECC									
	Total	.044	.027	2.664	1.045	.029	.031	.854	1.029

*Note.* WAI: Working Alliance Inventory. DRI – R: Dual-role Relationships Inventory – Revised. ECC: Effective Correctional Counseling. Recidivism at One Year Cox & Snell  $R^2 = .075$ . Recidivism at Two Years Cox & Snell  $R^2 = .123$ .

\* $p < .05$

Table 47.

*Forward-Stepping Logistic Regression on Subscale Scores of Measures (WAI, DRI – R and ECC) and Recidivism at One and Two Years for Tape 2.*

Measures/Subscales	1 Year Recidivism				2 Year Recidivism			
	$\beta$	SE	Wald	OR	$\beta$	SE	Wald	OR
WAI								
Task								
Bond								
Goal								
DRI – R								
Caring-Fairness	-.046	.022	4.417	.955*	-.043	.022	3.928	.958*
Trust								
Toughness								
ECC								
Structure								
Relationship								
Behavioural								
Cognitive								

*Note.* WAI: Working Alliance Inventory. DRI – R: Dual-role Relationships Inventory – Revised. ECC: Effective Correctional Counseling. Recidivism at One Year Cox & Snell  $R^2 = .072$ . Recidivism at Two Years Cox & Snell  $R^2 = .085$ .

\*  $p < .05$