THESIS

USING WII™-ASSISTED MOTIVATIONAL INTERVIEWING TO INCREASE THERAPEUTIC ENGAGEMENT AND THERAPEUTIC ALLIANCE WITH AT-RISK ADOLESCENTS

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ABSTRACT

USING WII™-ASSISTED MOTIVATIONAL INTERVIEWING TO INCREASE THERAPEUTIC ENGAGEMENT AND THERAPEUTIC ALLIANCE WITH AT-RISK ADOLESCENTS

Adolescents are a difficult population to form an alliance with and engage in psychotherapy, especially when they do not enter into a therapeutic relationship voluntarily. The present study sought to answer the question of whether using the Nintendo Wii™ videogame console with motivational interviewing therapy will increase therapeutic alliance and therapeutic engagement with adolescent clients more than when using motivational interviewing techniques alone. Justification for focusing on the constructs of therapeutic alliance and therapeutic engagement, and the use of motivational interviewing therapy is presented. An examination of the use of videogames in psychotherapy is also included. Results indicated that no differences exist with regard to therapeutic alliance or therapeutic engagement between treatment groups for the given sample, but support was shown for the theoretical view that engagement (both on the part of the client and the therapist) and alliance are linked constructs. A discussion of the limitations for this study and suggestions for future directions are provided.

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CHAPTER I

INTRODUCTION

The Center for Family and Couple Therapy (CFCT) at Colorado State University (CSU) is a training facility for master's level marriage and family therapy interns, serving various populations in the northern Colorado area. Although couples and families are two of the main groups served by the CFCT, the university also works with a diverse population of adolescents referred by schools, parents, and agencies such as the Larimer County Department of Human Services (DHS) and the Center for Family Outreach (CFO). Many of these adolescent clients are referred to the CFCT for treatment programs as part of a diversion or deferment program, offsetting a portion of a sentence given by the juvenile justice system, and because they are at-risk of possible future offenses. Although such programs prove to help in lowering recidivism rates with first-time and low-level offending adolescents (Dembo et al., 2008), as with most individual adolescent clients, these clients are not voluntarily seeking psychotherapy and therefore can be resistant to participating in the therapy process (Bolton Oetzel & Scherer, 2003; Castonguay, & Boswell, 2007; Zack, Hawley & Garland, 2008).

For therapists working with at-risk adolescent clients—especially those who are mandated to attend therapy—the task of engaging clients is an obstacle that must be overcome before change can happen in clients' lives. Engaging these adolescents in therapy depends on the therapists' abilities to break down stigmas about psychotherapy that lead adolescents to view therapy as intrusive, controlling, and as marking them as a

deviant in the eyes of their peers (Bolton Oetzel & Scherer, 2003). In order to move past these stigmatizing beliefs and increase interest and engagement in the therapeutic process, steps must be taken to increase the therapeutic alliance between the client and therapist (Karver et al., 2008; Zack et al., 2007). Forming an alliance by instituting strategies that help the adolescent client adopt a more favorable view of psychotherapy is something therapists see as primary to the therapy process (Zack et al., 2007).

One strategy used by CFCT therapists to build alliance with adolescent clients was for the therapist and client to play the Nintendo Wii™ videogame console (Wii™) during initial therapy sessions. A small pilot study was conducted in the department of Human Development and Family Studies at CSU. This study sought to answer the question of whether using the Wii™ in therapy along with motivational interviewing therapy techniques would help increase therapeutic alliance in at-risk, first-time and low-level offending adolescents versus the use of motivational interviewing techniques alone.

The current study is being conducted both to continue the work of the pilot study, seeking to gather more information to answer the original research question, as well as to expand the study to examine therapeutic engagement in the original population sample. Therefore, this study examines whether the addition of the Wii™ to traditional motivational interviewing therapy sessions will prove to increase therapeutic alliance and/or engagement in at-risk, first-time and low-level offending adolescents more than when using motivational interviewing techniques alone. It is important in this phase of the pilot study to examine both therapeutic alliance and therapeutic engagement as they relate to adolescents in therapy as both of these constructs, while measured separately, are considered to be inseparable and vital pieces of the therapy process (Hill, 2005).

CHAPTER II

LITERATURE REVIEW

Overarching Theoretical Basis

This study is being conducted with several theories as the basis of how engagement and alliance are brought into being in a therapeutic setting. However, the overarching theory that guides this study is that of social exchange theory. Born out of economics, social exchange theory posits that relationships are continuously weighed with a costs-benefits analysis, where participants in a relationship judge the positive and negative aspects of entering into or maintaining a relationship against reasons for forgoing a current relationship in lieu of an alternate relationship or situation (Smith, Hamon, Ingoldsby, & Miller, 2009). Although much of the research on adolescents using the lens of social exchange theory is focused on situations involving the choosing of romantic relationships or sexual partners (Hand & Furman, 2009; Laursen, & Jensen-Campbell, 1999), social exchange theory has also been used when observing adolescent behavior in other social situations (Guillet, Sarrazin, Carpenter, Trouilloud, & Cury, 2002; Schwarzwald, Moisseiev, & Hoffman, 1986). Although the theory has not been applied to a psychotherapy setting, it should prove to be a helpful lens to use in understanding adolescent views on why or why not to engage in the social setting of therapy.

An example of the application of social exchange theory to adolescent social situations of a nonromantic nature is seen in a study on dropout rates of female

adolescent handball players in France (Guillet et al., 2002). The authors found that enjoyment of the sport was less of a predicting factor for adolescent participants to continue playing than was perceived benefit from staying on the team. Players' commitment to the sport and team were positively correlated to the perceived benefits of continuing to play the sport. Handball players who ceased playing the sport were found to perceive themselves as less competent, less of an asset to the team, given less opportunity to actually participate, and viewed less favorably by their coaches than those players who continued to play handball. With this in mind, if adolescent clients perceive that their input positively contributes to the therapy process, believe that therapy is a situation that they can excel at, and believe that the therapist finds value in them and their participation in therapy, they will see benefits in and become more engaged in therapy sessions and the therapeutic process in general.

In addition to adolescent clients weighing the costs and benefits of engaging in the therapy process, they must also examine the evidence for and against entering into a relationship with the therapist. As Guillet et al. (2002) found significance in perceived support from one's coach in adolescent handball players being one of the determining factors in continuing to play the sport or not, adolescents who enter into psychotherapy must see their therapist as supporting them as individuals in the therapy process. As will be discussed in length later, one aspect of the therapeutic alliance depends on a bond being formed between client and therapist (Bordin, 1979). As with a coach, if adolescents do not perceive their therapist as being trustworthy and creating an environment that facilitates openness, relatedness, competence, and support, they will not readily enter into a working alliance with the therapist (Guillet et al., 2002).

Therapeutic Alliance

Therapeutic alliance is purported to be the key requirement for change to occur in psychotherapy (Bordin, 1979). Finding its roots in psychoanalytic theory, what Bordin (1979) referred to as the theory of *working alliance* is now thought of as generalizable to all psychotherapy modalities. Drawing on psychoanalytic literature, Bordin put forth a definition for working alliance that includes three parts: agreement on goals between the therapist and client, assignment of and agreement on therapeutic tasks, and the development of a bond between the therapist and client. From this definition, Bordin posited that it is the strength of collaboration between the client and therapist that is the driving force behind change rather than the intrinsic facets of any single therapy modality. This belief has gained backing in the field of marriage and family therapy with the concept of common factors as put forth by Sprenkle, Davis, and Lebow (2009). The common factors approach maintains that client-centered therapy, coupled with factors that strengthen the therapist-client bond, is what drives change in therapy rather than the techniques of any particular modality of therapy.

The first part of Bordin's (1979) definition of the working alliance—agreement on goals—actually comes before the goal-making process in therapy, and presupposes that the client and therapist must first agree on the significant stressors, dissatisfactions, and problems that are present in the client's life. The goal of psychotherapy is to lessen the hold that these factors have on a client's ways of thinking and behaving, and it is this goal that the client and therapist must have agreement on before an alliance in therapy can be formed. For a client to move beyond situationally based symptoms of problems and to work toward true change in therapy, the focus and agreed upon goal must be to

work towards creating change within the client rather than with immediate situation dilemmas (Bordin, 1979; Fraser & Solovey, 2007).

The second part of Bordin's (1979) definition involves the assignment of and agreement on therapeutic tasks. The tasks that Bordin includes are not solely those that the client undertakes, but also those that the therapist is responsible for. Although some tasks may differ between therapy modalities (e.g., client free association with the therapist positioned away from the client's view in psychoanalytic therapy; self-examination and honest reporting of thought processes and feeling in behavioral modalities), all therapy types require a basic collaborative understanding between the client and therapist on tasks such as payment for services, and the nature of services that will be provided to the client. Also, in many therapy types, the basic tasks of working toward specific identified behavioral change on the part of the client, and the therapist completing the tasks of empathic listening, reflecting, engaging in self-disclosure when appropriate, etc. are seen as the assigned and agreed upon tasks on which the client and therapist continuously collaborate.

Bordin's (1979) third and final piece of the working alliance definition is that a bond must be developed between the client and therapist. In order for a working alliance to be formed, a basic level of trust should be a part of any therapy modality. However, the bond between client and therapist will manifest differently given different therapy modalities. For example, the bond formed based on expected length of treatment will be different when the client is expecting a relationship that will span years versus clients in brief treatment modalities that may only last a few months. Similarly, therapy modalities involving client-driven tasks may not evoke as deep a bond as those involving more self-disclosure and empathic reflecting on the part of the therapist. In general, when the

intensity of problems increases, a deeper bond and a deeper trust must be developed in order for the client to remain open and vulnerable with the therapist.

Working alliance and adolescents. Expanding upon Bordin's (1979) theory of working alliance, Zack et al. (2007) proposed a modification of the theory that better fits adolescent populations. In a discussion of what they term the *youth working alliance*, Zack et al. presented evidence that supports Bordin's requirement for agreement on therapeutic tasks and the necessity for the development of an affective bond between the adolescent client and the therapist. Bordin's third facet of the working alliance—agreement on goals—however, is shown to not be as important of a factor with adolescents as with adult clients. Zack et al. attribute this to developmental differences between adolescents and adults, where adolescents may not be able to conceptualize the need for long-term goals (which may be iterated for them by parents or other authority figures), may not be able to visualize abstract goals as they relate to in-session tasks, and may not be able to think hypothetically and apply what has been worked on in-session to situations outside of the therapy room. Zack et al. did note that their concept of the youth working alliance is in its infancy and that more empirical research needs to be done in the area, especially around the development of a means of measuring alliance with adolescents.

However alliance is measured, research indicates that it remains an important factor in successful therapeutic interventions with adolescents. Establishing a working alliance with adolescents can be a difficult enough task on its own, and as it relates to the population sample in the present study, alliance is even more difficult to form with those clients who exhibit externalizing behaviors, or who have been referred to therapy as part

of diversion or deferment programs for at-risk, first-time or low-level offenses the challenge increases (Dembo et al., 2008, Garcia & Weisz, 2002). The types of low-level offenses, such as petty theft, substance use, and school truancy for which adolescents are often referred to therapy for are generally manifestations of externalizing behaviors that are rooted in defiance, aggression, and other such thought and behavior patterns (Hannah & Hunt, 1999). Garcia and Weisz (2002) found that in cases where adolescent clients drop out of treatment, the factor that accounted for the highest rate of cessation was therapeutic relationship problems. Further, adolescents who were rated higher in externalizing behaviors reported significantly higher rates of therapeutic relationship problems. Relationship problems in the therapy setting included the belief that the therapist was not targeting the right problems with the adolescent clients, the therapist did not understand the treatment process for the client, the therapist was not actually helping the client, or that adolescent clients or their parents simply did not get along well with the therapist. With the frame of the working alliance in mind, especially as applied to adolescents by Zack et al. (2007), the facets necessary for forming a therapeutic alliance (agreement on therapeutic tasks and the development of a bond) are missing from these clients' experience in therapy.

Similarly, Hawley and Garland (2008) looked at level of externalizing and internalizing behavior and use the Working Alliance Inventory (Horvath & Greenberg, 1989) to examine the relationship between behavior and perceived level of alliance on the part of adolescent clients, their parents, and the therapist. For total behavior score and externalizing behavior, both youth and parent report of behavior improvement were significantly related to perceived level alliance for the client and parent. Additionally, for

the adolescent clients, improvement in self-ratings of internalizing behavior was significantly related to therapeutic alliance.

Focusing primarily on the "bond" aspect of Bordin's (1979) and Zack et al.'s (2007) definitions of working alliance, Binder, Holgersen, and Nielsen (2008) conducted a study on therapists experiences of forming an alliance with adolescent clients. Five challenge areas and a variety of therapist suggested solutions emerged that can help with forming and increasing a working alliance with adolescents in therapy. The challenge areas were framing the problem as being able to be worked on together, figuring out what role the therapist needed to play for each client, motivating the client toward engagement in therapy, establishing a common language around meaning, and knowing how to handle client ambivalence. Solutions to these challenges include focusing on the adolescent's personal experience of the situation; maintaining a presence as a benign authority and/or finding the degree of authority needed for each individual client; focusing on the adolescent as the client to be engaged, and the problem that they present rather than other possible therapy participants; use the adolescent's own language to create meaning, and frame professional expertise in this common language; explore ambivalence as a therapeutic issue, and explore motivation for therapy as a therapeutic issue in itself. These solutions help to create a comfortable environment where adolescents will more readily enter into a working alliance with the therapist. Also, as Bolton Oetzel and Scherer (2003) stated, such strategies help the adolescent client cope with and move past stigmatizing beliefs about psychotherapy.

Therapeutic Engagement

Although the concept of therapeutic engagement is a widely referred to topic in the clinical literature, there does not appear to exist a broadly accepted or simply stated conceptual or operational definition of the construct. Likewise, a unified theory of therapeutic engagement has not been alluded to in the literature. Flaskas (1997) wrote about the lack of theoretical grounding on the concept of engagement in systemic therapy, stating that the main repository for theoretical bases on therapeutic engagement is textbook chapters that reduce the concept to a series of tasks that occur only early in the therapeutic relationship. Rather than being content with working to engage a client only at the start of the therapy, Flaskas proposed that the task of eliciting engagement lasts throughout the therapy process.

To illustrate engagement being a process of reciprocation between the client and the therapist, Jackson and Chable (1985) discussed the concept mainly in terms of what the therapist can do to accommodate clients. They provided suggestions for how to increase engagement, including common therapy techniques such as joining, using empathic listening, self-disclosure, etc. Much of the available theoretical literature on therapeutic engagement follows this same line of reasoning: Engagement has to do mainly with methods employed by the therapist rather than the inclusion of clients' reaction to those methods (Billow, 2010a, 2010b; Brimhall & Butler, 2011; Scaturo, 2005). The basic proposition in this set of literature is that the therapist must balance such therapeutic concepts as neutrality, self-disclosure, desire for alliance formation, diplomacy, and integrity in order to bring about engagement on the part of the client.

Looking at therapeutic engagement in terms of the techniques that therapists use to elicit a response from clients is beneficial as it provides a firm foundation from which therapists can draw wisdom for use in their practice, especially in regard to working with specific populations (such as adolescents) that may be difficult to engage. However, limiting engagement to therapist interventions does not provide a means by which the therapist can recognize that clients are indeed engaged in the therapeutic process. It is important for the process of engagement to be examined from both angles: the techniques the therapist employs, and the end result of how engagement can be recognized on the part of the client.

The intersection of therapist and client actions in family therapy leads to what is referred to as *sustained engagement*. Friedlander, Heatherington, Johnson, and Skowron (1994) studied the necessity for the therapist to be taking steps toward eliciting engagement from the client that include the suggestions mentioned earlier. They also attempted to view situations as clients may and, by examining eight sessions with clients, developed a model of moving from disengagement to sustained engagement within the therapy setting. Their model included four steps taken by family members that create sustained engagement within the family during therapy sessions: recognition of personal contribution to disengagement, communicating thoughts and feelings to one another, acknowledgement and validation of these thoughts and feelings, and forming new models of how to approach disengagement with one another. Friedlander et al. postulate that through these steps, motivation for change is recognized, and engagement in therapy is increased and sustained.

Though this model's focus is on engagement between family members in therapy, the model can be applied to individual therapy. Rather than taking steps to engage with family members on a problem topic in therapy, the client instead works with their therapist to move across the steps from personal disengagement to sustained engagement. Clients must first recognize their personal unwillingness to engage in conversations around difficult topics. The client then communicates his or her thoughts and feelings around these topics with their therapist, who provides acknowledgement and validation of the clients' feelings. As individual clients work with the therapist, over time motivation for individual change is recognized, they become more engaged in therapy and construct new methods of engaging problems on their own.

Where Friedlander et al.'s (1994) model of sustained engagement provides an understanding of the internal and observable steps that a client takes toward sustained therapeutic engagement, other studies have sought to examine and measure an observational measure of what engagement in the therapy process looks like (Friedlander, Escudero, Horvath, Heatherington, Cabero, & Martens, 2006; Hall, Meaden, Smith, & Jones, 2001). Hall et al. (2001) recognized the importance of engagement with mental health services, but found that no means had been developed to measure therapeutic engagement. Although they still do not explicitly provide a conceptual definition of therapeutic engagement, Hall et al. developed the Engagement Measure in order to provide clinicians with a means of measuring observed levels of engagement in their clients. From the items included in this measure, a definition of therapeutic engagement begins to emerge. Over six areas of engagement, 11 items are scored on a scale of one to

five while observing the level of engagement in an individual client. These six areas of engagement form the basis for a definition of therapeutic engagement:

1. Appointment keeping: the client comes to therapy sessions, either with or without support in the form of being transported to appointments
2. Client-therapist interaction: quality of relationship with the therapist, and how well the client relates with their therapist, creating a positive environment during therapy sessions.
3. Communication/openness: the extent to which the client discloses personal information, discusses personal problems, feelings, and symptoms in their current situation.
4. Client's perceived usefulness of treatment: how useful the client believes therapy to be based on their interactions with the therapist and adherence to a treatment plan.
5. Collaboration with treatment: how much the client agrees with and is involved with carrying out treatment interventions in session and as homework.
6. Compliance with medication: the client agrees that medication is a necessary part of treatment and freely takes medication.

Although the sixth component (compliance with medication) is not applicable to all therapeutic situations, these conceptual areas provide a sound definition of what therapeutic engagement looks like on a continuum of (using Friedlander et al.'s terms) disengagement to sustained engagement. Using these areas as a definition, as well as employing the Engagement Measure in therapeutic practice, enables the therapist to measure client engagement in the therapeutic process.

Therapeutic engagement and adolescents. Moving beyond the broad scope of general therapeutic engagement, it is important for this study to examine the concept of therapeutic engagement as it relates to adolescent populations. As stated earlier, the majority of adolescent clients do not seek out psychotherapy services voluntarily, instead being referred by parents, schools, or other agencies and may be resistant to participating in the therapy process (Bolton Oetzel & Scherer, 2003; Hawley & Garland, 2008; Zack et al., 2007). Because of this, the therapist must be mindful of the literature that speaks to his or her involvement in the engagement process, and must be familiar with variables that hinder engagement in adolescents, and with techniques that serve to increase engagement in adolescent clients.

As with forming a working alliance with adolescent clients, there are several variables that predict poor engagement in psychotherapy. Smallbone, Crissman, and Rayment-McHugh (2009) used Hall et al.'s (2001) Engagement Measure in a study on methods of improving therapeutic engagement in a population of adolescent sexual offenders. Self-reported externalizing behaviors, as well as impulsive and antisocial behaviors, proved to predict poor engagement in therapy. Dakof, Tejeda, and Liddle (2001) also found that lack of parental involvement and parental downplaying of externalizing behaviors predicted poor engagement in their adolescent's program of treatment. Additionally, as with therapeutic alliance, early problems with the therapeutic relationship between the adolescent client and the therapist, and the perception that the program of treatment is either too demanding or not relevant to the adolescent's problems, can lead to lower levels of engagement in therapy (Chu, Suveg, Creed, & Kendall, 2010).

As for factors that help to increase adolescent engagement in therapy, Dakof et al.'s (2001) findings showed that when parents are more involved in the therapy process and the adolescent's life in general, and when parents are more aware of their child exhibiting externalizing behaviors, adolescent engagement in therapy increases. Smallbone et al. (2009) found several factors that help to increase therapeutic engagement:

- Scheduling therapy sessions at a location and time more convenient to adolescent clients
- Making engagement one of the stated goals of therapy
- Continually using base-level therapy techniques to sustain engagement
- Increasing cultural awareness on the part of the therapist
- Including other individuals that the adolescent identifies as beneficial to their treatment in the therapy process.

In interviews with adolescent girls, Eyrich-Garg (2008) plainly asked clients what therapists can do to help engage them in therapy and build and maintain a therapeutic alliance. Suggestions included themes such as meeting the client on his or her level, using appropriate self-disclosure about one's personal life, making the adolescent client a part of the therapy process by telling him or her what is going on in the process and asking if it is okay to take notes, and actively listening to what the client is saying.

Similarly, especially for adolescents who are unwillingly enrolled in therapy, providing clients with a sense of autonomy and fostering a sense of ability to choose aspects of how therapy will be conducted can help increase engagement (Bolton Oetzel & Scherer, 2003; Church, 1994). Allowing the adolescent client to choose the topics

discussed in therapy, and (while not always a possibility) choose his or her therapist helps to instill a sense of autonomy, providing motivation to become engaged in the therapy process (Bolton Oetzel & Scherer, 2003; Hanna & Hunt, 1999). Also, employing the solutions presented in Binder, Holgersen, and Nielsen's (2008) findings on how to form and strengthen the bond aspect of the working alliance helps the adolescent client view their therapist not as unapproachable, but as someone who is interested in letting the client be a partner in the therapy process rather than a patient.

The Intersect of Alliance and Engagement

Considering the literature on adolescent engagement, it becomes clear that an overlap of the factors and techniques that help to increase both therapeutic engagement and therapeutic alliance exists. This overlap is alluded to in much of the literature on both of these topics as they are often spoken of in tandem, particularly in the engagement literature (Brimhall & Butler, 2011; Chu et al., 2010; Karver et al., 2008). Often, client engagement in therapy is framed as not even being possible without the client first having formed a working alliance with his or her therapist (Bolton Oetzel & Scherer, 2003; Hawley & Weisz, 2005). Therapist use of techniques to increase engagement with adolescent clients and a formed alliance between the client and therapist, however, do not guarantee full or prolonged engagement on the part of the client. These three facets of the therapeutic relationship must be attended to across all stages of therapy so that the client ultimately stays engaged in the therapy process, working toward the ultimate completion of therapeutic goals (Hill, 2005).

Although it may appear from their interrelatedness that therapeutic engagement and the working therapeutic alliance are iterations of a common latent construct, theorists

propose that these concepts are in fact independently observable, and should be considered to be individually important for the therapy process (Hill, 2005; Karver et al., 2008). Hill (2005) posited that not only engagement and alliance on the part of the client, but also that therapist techniques lending to client engagement are essential, independent functions of the therapeutic relationship. She maintained that all three facets are independent yet intertwined, and cannot be separated when examining the therapy process. Further, Karver et al. (2008) stated that in research, each construct needs to be measured independently so as to identify the part each plays in the therapy process and in treatment outcome.

Putting alliance, engagement, and adolescents together. To summarize the concepts of engagement and alliance, and how they influence and are affected by the adolescent client is to reiterate the reasons behind this study. The formation of a working therapeutic alliance and increasing therapeutic engagement with adolescent clients is difficult because participation in psychotherapy is generally not voluntary. The reason for being referred to therapy, and the goals that are desired for the adolescent to work on in therapy, are often set by parents, schools, or other agencies that have referred the adolescent to therapy. In addition, many adolescents have a stigmatizing perception of psychotherapy that causes them to be hesitant to engage in, and enter into a working alliance with a therapist. In order for this population to become increasingly engaged in therapy, therapists must be well versed in techniques that meet the client at their level, help the client not to feel alienated, and break down stigmatizing beliefs about psychotherapy. The therapist must strive to form a working alliance with adolescent

clients so that motivation for change can be realized and the client can become engaged in the therapy process.

Motivational Interviewing

To test the use of the Wii™ as it relates to therapeutic engagement and therapeutic alliance in a therapy setting, a standardized therapy modality must be used as a baseline of treatment. Motivational interviewing is a directive, evidenced-based, client-centered, brief therapy modality that focuses on client motivation for change. Originally developed as a method that proved effective in working with clients struggling with alcohol and other substance use, motivational interviewing has since been shown to work well with other problem behavior areas such as diet and exercise (Burke, Arkowitz, & Menchola, 2003; Miller, 1996). Additionally, research on motivational interviewing has shown that the modality works well with adolescent clients, especially those struggling with substance abuse or other externalizing behaviors (Baer et al., 2008; Britt, Blampied, & Hudson, 2003)

Motivational interviewing focuses on clients' identification of the need for change in some aspect of their life. Using traditional therapy techniques such as warmth and empathy, the therapist also employs specific, directive questions and reflective listening to develop discrepancies in clients' ways of thinking rather than putting forth suggestions for areas of change (Baer et al., 2008; Miller, 1996). If met with opposition, the therapist avoids becoming argumentative and uses client resistance as a springboard for further questions. As clients identify areas of change, the therapist supports clients' inherent strengths that will help to make the changes that they have identified (Miller, 1996). Through each therapy session, the focus is centered on the client's perception of his or

her situation and, as discrepancies in thoughts and behaviors are identified, client-identified need for change.

One factor that makes motivational interviewing an attractive therapy modality, especially when working with adolescents, is that it is considered a brief therapy (Baer et al., 2008; Burke et al., 2003; Miller, 1996). Adolescents referred to therapy as part of a diversion or deferment program are often allotted a limited number of sessions that will be paid for by the referring agency. This time constraint limits the work that can be done with adolescent clients in therapy. In some applications, motivational interviewing has been shown to elicit motivation for change in clients in as little as one session (Britt et al., 2003). For clients resistant to change, therapy can take longer than a single session, but the brief nature of motivational interviewing still makes it not only an attractive modality in general, but an applicable modality to this study on adolescents with a limited number of mandated sessions in therapy.

Activity engagement theory. The theoretical basis driving the view that the integration of the Wii™ into therapy sessions improves therapeutic engagement and alliance is activity engagement theory (Higgins, Lee, Kwon, & Trope, 1995; Higgins, & Trope, 1990). Activity engagement theory separates intrinsic and extrinsic motivational factors as they are related to an individual's engagement in a particular activity and proposes that intrinsic motivation involves individuals having the perception that an activity is itself the end result of a situation rather than a means to end. Additionally, individuals engage in an activity for the reward of feeling competent and believing they have performed well as opposed to seeking an outside reward for merely improving in performance. When combining activities to help increase engagement, the primary

identified activity must be seen as intrinsically motivating, and must be actually viewed as the *primary* activity by a participant. An added secondary activity perceived as more attractive than the primary one, however, causes a participant to infer that engagement in the primary activity is due to a higher attractiveness of the primary rather than the secondary activity. This inference connects the primary activity to the attractiveness of the secondary in later iterations of the primary activity, and enhances engagement due to the relationship between the activities.

Support for activity engagement theory has been shown in regards to combining reading and coloring activities. Higgins et al. (1995) were interested in engagement in reading, as this activity was deemed more intrinsically motivating than coloring. Second and third grade participants were studied over two sessions, the first session seeing children randomly assigned to having either reading as the primary activity and coloring as the secondary, or vice versa. At the second session, the participants were again randomly assigned to a reading/coloring primary-secondary situation. Results showed that at the second session, time spent reading was highest when reading was the identified primary activity during both the first and second sessions.

Considering activity engagement theory within the framework of motivational interviewing as the therapy modality for this study, motivation for change will be enhanced with the addition of the Wii™ to the traditional therapy setting. When the primary activity of psychotherapy is coupled with a more attractive secondary activity of playing the Wii™, the addition of the Wii™ will increase engagement in the therapy process and facilitate the identification of areas where the client will want to seek change

in their life. With this, past use of video games in therapy will be discussed at length, and specific reasons for choosing to use the Wii™ will be presented.

Videogames in Therapy

Although the use of videogames in psychotherapy is not a new concept, research is minimal as to how widespread and effective their use in therapy is. Videogames used as a general clinical tool in health care, however, is a widely researched topic. Clinical applications have ranged from psychoeducation around disease management and general health care, to applications in pain management, and even to rehabilitation after traumatic brain injury (Ceranoglu, 2010). As in other clinical settings, what research has been done on the use of videogames in a psychotherapy setting has focused more so on the aspects of their use in psychoeducation about therapeutic topics, and helping the client to learn life skills rather than using the games as a therapy modality (Ceranoglu, 2010; Coyle, Doherty, & Sharry, 2009; Skigen, 2008).

Much of the research around uses of videogames in therapy has focused on playing games with clients and discussing the reactions and choices they made in that game. Games such as the The Sims™ have been used to observe clients in a "social" setting (Skigen, 2008). Much like the use of a sand tray in play therapy modalities, The Sims™ allows players to create a "world" that can be used to demonstrate their perception of *their* world. By designing characters, homes, and situations within the game world, players make choices as to how their "Sim" will interact with other characters. These interactions, and they ways that clients react to the game in the physical world, can give insight to the therapist about how clients make decisions and

think things through in their daily lives, creating discussion points for therapeutic intervention (Skigen, 2008).

Other videogames have been created specifically to teach therapeutic skills to the client, and to (as with The Sims™ or with a sand tray) provide discussion topics in therapy around choices made while playing the game in therapy (Ceranoglu, 2010; Clark & Schoech, 1984; Coyle, Doherty, & Sharry, 2009). Personal Investigator (PI) is a modern-styled, 3D videogame developed to be used as a brief solution focused therapy modality (Coyle et al., 2009). As with The Sims™, the therapist and client sit together as the client engages in game play. With PI, however, the game presents specific issues that help create opportunities for therapeutic discussions. Results from an initial study on the game show that therapists found value in using the game in therapy sessions, rating PI as being "helpful" to "very helpful" in working with most adolescent clients in the study, agreeing that PI had an overall positive impact on therapy sessions where it was used, and stating that they would use PI for therapeutic intervention in the future. Client responses to questions about their experience playing PI in therapy provided such critique as the game being well designed and easy to play, being helpful in solving a personal problem, and that the game provided a better therapy experience than just talking one-on-one with a therapist.

An older game, created early in the time frame of videogames being available in a mass-consumer format, was designed with direct psychoeducation and behavior modification in mind. The Mentor game is intended to increase engagement in adolescent clients by providing support and advice, and to help adolescents learn impulse control (Clark & Schoech, 1984). A text-based game, the "mentor" helps clients explore

an underground cave, coaching the player to make good decisions as they navigate through the game. Clients learn impulse control by being rewarded for making good decisions in the game, and losing points when bad decisions are made. Results from playing the game in therapy sessions showed increased engagement in the therapy process as displayed by clients actively attending sessions, enjoyment of playing the game during sessions, and the desire to keep playing similar games in therapy once The Mentor game was completed. The authors did not measure changes in impulse behavior as a result of playing The Mentor game, but states that the successful engagement of clients in therapy while playing the game demonstrates that when used in therapy videogames can be a useful tool in addressing behavior problems and other therapeutic issues (Clark & Schoech, 1984).

Videogames, alliance, and engagement. Although videogames can be used to teach skills and create discussions about therapeutic topics regarding client choices while playing the games, Gardner (1999) likens the use of non therapy-specific games to the use of traditional board games as a play modality in therapy. Gardner stated that the purpose of play in therapy is to both increase engagement in the therapy process and to promote open expression of feelings and fantasies. Like board games, drawing, storytelling and other play modalities, non-therapy-specific videogames provide a method of taking the pressure off of having to focus solely on one-on-one interaction with the therapist around sensitive subjects (Coyle et al., 2009; Gardner, 1999). With activity engagement theory in mind, this illustrates that adding non therapy-specific videogames to the standard therapy sessions may help with increasing therapeutic alliance and engagement because it creates more of an egalitarian relationship in the therapy room.

Research on videogames in therapy has not specifically focused on therapeutic alliance, but many of the facets necessary for forming an alliance can be brought about by their use. Videogames provide a way to break down barriers in therapy as adolescent clients may be surprised to find that their therapist is able to play video games (Gardener, 1991). This revelation may help remove stigmatizing beliefs held by the client around therapy being boring, not applicable to them, and their therapist as being stuffy or unapproachable (Enfield & Grosser, 2008; Gardner, 1991). The implementation of using videogames in practice, however, may take some initiative on the part of the therapist because many therapists may not be familiar with how to play video games (Enfield & Grosser, 2008).

Playing videogames in therapy may also provide adolescent clients with a sense of autonomy and self-efficacy as they may bring an expert knowledge to the therapy room around a topic in which the therapist is not as well versed (Gardner, 1991). According to surveys completed in 2007 and 2008, 94-97% of adolescents reported that they play video games at least infrequently (Ceranoglu, 2010). If therapists are not familiar with playing videogames, they can use this opportunity to allow the client to teach them, which can help strengthen the bond in therapy and increase therapeutic alliance.

As previously stated, using games specifically designed for a therapy setting increases therapeutic engagement with adolescent clients (Clark & Schoech, 1984). Although generally considered to be a passive leisure activity, when coupled with traditional therapy methods, videogames become active and engaging for clients. Gooch and Living (2004) discussed how participating in active (versus passive) leisure activities

helps increase engagement in occupational therapy settings. The presence of non therapy-specific videogames in the therapy setting also helps to normalize the therapy experience, further reducing the stigma around therapy and making it a more familiar environment where adolescents can become engaged (Gooch & Living, 2004).

Why the Wii™? There are several reasons that the Nintendo Wii™ videogame console may be a useful tool in engaging adolescents in therapy and in aiding the building of a therapeutic alliance. Lenhart et al. (2008) found that 97% of adolescents aged 12 to 17 play videogames on a computer, videogame console, portable gaming device, or on cell phones. The fact that the Wii™ is a modern, not solely therapy-specific videogame system makes it a familiar object that adolescent clients may readily relate to in an possibly otherwise unfamiliar or stigmatized setting like a therapist's office. The possibility of playing the Wii™ in psychotherapy sessions may provide a level of comfort, as there is a high likelihood that adolescent clients are already familiar with videogames. This may also help adolescent clients to view their therapist in a more favorable light, as the therapist appears interested in the same cultural values (such as videogames) that the client is interested in as well (Montgomery, 2007; Smallbone et al., 2009; Zack et al., 2007).

As a non therapy-specific videogame format, the Wii™ offers a variety of games that can be used in a therapy setting to help build a therapeutic alliance and increase therapeutic engagement with adolescents. For adolescents (and therapists alike) who have not played games on the Wii™, instructions for playing games are generally provided as part of the initial game-playing experience. The Wii™ uses a motion-based controller with little need of pushing buttons to play most games, and the movements that

control game play are very similar to doing the actual activity. The Wii™ also allows for turn-taking type games, which allows time between playing to exist for the therapist and adolescent to ask and answer questions while not focusing on actually playing the game.

A third reason that the Wii™ may be a useful tool in therapy with adolescents is that it offers an alternative to a traditional face-to-face therapy setting. Sitting side-by-side in therapy rather than face-to-face can help to reduce self-consciousness that adolescent clients may feel from having to attend therapy sessions (Prochaska & Norcross, 2010). When a client is looking at something other than their therapist during a therapy session, the distraction of a videogame, drawing, painting, or some other activity reduces the immediacy of having to respond to a therapist's questions. This allows clients to process their therapists' questions and observations before answering and allows them to bring up other topics on their own (Ceranoglu, 2010; Takei & Otah, 2002).

Hypotheses

Based on the literature reviewed, this study hopes to fill a gap in the research on methods for engaging adolescent clients in the psychotherapy process and for increasing the therapeutic alliance within this population. Specifically, this study is aimed at observing therapeutic modalities that reach out to adolescent clients on a relatable and familiar level. To this end, five hypotheses are proposed. The first is the hypothesis from the first phase of the pilot study: That using the Wii™ along with motivational interviewing therapy increases the therapeutic alliance with adolescents over the course of therapy more than when motivational interviewing techniques are used alone. Similar to this first hypothesis, the second is that using the Wii™ along with motivational

interviewing therapy increases therapeutic engagement with adolescents over the course of therapy more than when motivational interviewing techniques are used alone. A third hypothesis is that in the initial session with adolescent clients, using the Wii™ along with motivational interviewing therapy results in higher observed levels of therapeutic engagement than when motivational interviewing techniques are used alone. Similarly, the fourth hypothesis is that in the initial session with adolescent clients, using the Wii™ along with motivational interviewing therapy results in higher levels of therapeutic alliance as reported by adolescent clients than when motivational interviewing techniques are used alone. The final hypothesis, which stems from Hall's (2005) and Karver et al.'s (2008) beliefs that alliance and engagement are different but inseparable constructs is that therapeutic alliance and therapeutic engagement, as well as client satisfaction with the therapy process, are positively correlated for both treatment scenarios (motivational interviewing with our without the Wii™).

CHAPTER III

METHOD

Participants

Adolescent study participants were recruited through the Center for Family and Couple Therapy (CFCT) and the Campus Corps Mentoring Program Colorado State University (CSU). The CFCT provides therapy services to youth who are first-time and low-level offending adolescents as part of diversion and deferment sentences who are referred by the probation system and the Center for Family Outreach (CFO) in Larimer County, CO. Clients referred to the CFCT by the CFO or probation are mandated to attend between 8 and 15 therapy sessions as part of their sentence. Additionally, Campus Corps is a one-on-one mentoring program for at-risk adolescents referred from various agencies in Larimer County.

The first phase of this pilot study included participants recruited from these same populations. All clients were given the opportunity to participate in the pilot study when completing CFCT or Campus Corps intake paperwork. Given that the present study includes secondary data analysis on videotaped therapy sessions and data collected from the first phase of the pilot study, these clients are included as participants in this phase of the pilot study as well.

All clients referred to the CFCT by the CFO or probation during the data collection phase of the current study, as well as all Campus Corps participants during the fall 2011 semester, were given the opportunity to participate in the study. Participants

from the Campus Corps population were not mandated to attend therapy as a part of their referral to the Campus Corps program, so Campus Corps participants who choose to participate in this study were provided with three therapy sessions at no charge, with the option of continuing therapy past these sessions billed at the normal CFCT therapy rate.

All participants and their parents were presented with informed consent at the standard intake appointment with the CFCT of Campus Corps. Specifically, they were informed of the requirements of the study, and possible benefits of and risks associated with entering into psychotherapy. Campus Corps participants were informed of the rate at which sessions beyond the three provided by the study would be billed to the family should the participant and/or their family decide to remain in therapy at the CFCT. Participants were alternately assigned to the control or treatment group as they are referred to the CFCT or Campus Corps. For the entire sample, demographic data was collected, as well as data regarding previous experience with therapy, substance use, and the reason(s) they were referred to therapy or to Campus Corps.

Power Analysis and Recruitment Outcomes

Based on small-to-moderate expected effect sizes, in order to reach a statistical power of .80, a total sample of approximately 150 (75 per treatment group) participants was desirable. Given that the first phase of this pilot study saw the recruitment of a nonprobability sample of 21 adolescent clients, the ability to recruit an additional 129 participants was unlikely. Due to time and resource limitations with the present study (as was also encountered during the first phase of the pilot study), a smaller sample size was used for the purposes of testing the stated hypotheses. To aid with recruitment, an incentive of being entered into a drawing to win a $50 gift card was presented at CFCT

and Campus Corps intake sessions. Attrition was not expected in the present study as participants were either mandated to attend therapy sessions, or were to attend therapy during their regularly scheduled Campus Corps nightly activities. During the recruitment period for this phase of the study, however, no referrals were made to the CFCT from either the CFO or Probation. All incoming Campus Corps participants were given the option of participating in the current study. Of these adolescents, 11 initially agreed to participate in the study, and when called upon to attend their three free therapy sessions, only 8 participated in the present study. This provided for a total sample size of 29 at-risk adolescents between the two phases of this study.

Procedure

Participants in each group received three 50-minutes sessions of motivational interviewing therapy over three consecutive weeks. Members of the control group received therapy using traditional motivational interviewing techniques, while members of the treatment group received Wii™-assisted motivational interviewing therapy. Wii™-assisted motivational interviewing therapy consists of playing videogames on the Nintendo Wii™ videogame console while using traditional motivational interviewing techniques. Games played on the Wii™ will consist of easy-to-learn, turn-based, two-player games that are a part of the Wii™ Sports game-disc that comes with the videogame console. Motivational interviewing techniques for both control and treatment groups were manualized, with CFCT therapist interns receiving extensive training in motivational interviewing prior to the beginning of data collection with participants.

All therapy sessions were videotaped for the purposes of observing therapeutic engagement, for ensuring continuity of use of motivational interviewing techniques

between therapists, and for supervision of therapy. Live supervision of therapy was also used to ensure proper use of motivational interviewing techniques and to help therapist interns target specific therapeutic issues with clients. Therapeutic alliance was measured on both the part of the client and the therapist at the end of each therapy session using both the client and therapist versions of the Working Alliance Inventory (WAIC/WAIT; Horvath & Greenberg, 1989). Client satisfaction was measured at the end of the third therapy session, with the client completing the Client Satisfaction Questionnaire (CSQ-8; Attkisson, & Zwick, 1982). When a participant had completed the three therapy sessions, each videotaped session was watched by the primary researcher and two undergraduate research assistants and coded for therapeutic engagement using the Engagement Measure (Hall et al., 2001) and the engagement in the process subscale from the System for Observing Family Therapy Alliances (SOFTA; Friedlander et al., 2006). Inter-rater reliability was assessed by training research assistants in what therapeutic engagement is, how it can be observed, how to use the Engagement Measure and the engagement in the process scale, and by completing test ratings with videos of sample therapy sessions.

For analysis of secondary data, all information collected from client completion of the WAIC/WAIT and the CSQ-8 during the first phase of the pilot study was combined with data from the current study and analyzed to either support or reject the null hypotheses of this study. As with videotaped therapy sessions from this study, videos from the first phase of the pilot study were watched by the primary researcher and two undergraduate research assistants and coded for therapeutic engagement on the part of the adolescent clients, and motivational interviewing compliance on the part of the therapist.

Inter-rater reliability for these videotaped therapy sessions was assessed in the same manner as with coding for therapeutic engagement in videos from the current study.

At the end of the three therapy sessions, participants from the Campus Corps sample were again offered the opportunity to continue therapy sessions with the therapist that conducted the three treatment sessions with them, but will not be required to continue with therapy. If participants from the Campus Corps population chose to continue in therapy, their parent(s) or guardian(s) were contacted to receive permission for their son or daughter to continue in therapy. Parents were reminded at this time of the weekly fee that will be incurred for therapy services.

Measures

The Working Alliance Inventory. Therapeutic alliance was measured at the end of each therapy session using the Working Alliance Inventory (WAI) short form on the part of both clients (WAIC) and therapists (WAIT; Horvath & Greenberg, 1989). The WAIC/WAIT short form consists of 12 statements, rated by clients on a seven-point Likert scale from 1 (Never) to 7 (Always). Horvath and Greenberg (1989) state that the WAI (full-scale) has strong reliability, with an alpha coefficient of .93. The present study supports reliability for the WAIC and WAIT short forms with alpha coefficients of .91 for the WAIC and .87 for the WAIT. The WAI also shows strong convergent validity as client and therapist ratings are moderately to highly correlated (r = .32 to r = .88), and there is support for discriminant validity on two of the three subscales (task and goal), indicating level of agreement on tasks and goals only if agreement actually exists. Construct validity is shown, especially for the composite scale, as it correlates highly with scales used to measure similar traits, as well as for the "bond" subscale as it is

highly correlated with a measure focused specifically on empathy. Predictive validity for the WAI is supported with the WAI composite score, the "task" subscale, and the "goal" subscale, as later client-reported treatment outcomes confirmed alliance in these areas.

Busseri and Tyler (2003) further showed that the WAI short form is highly correlated with the WAI full-scale as the short form has an alpha reliability of .91 and proves to have similar predictive validity as the full-scale. Also, although the WAI was originally intended as a measurement of alliance in adult clients, Hawley and Garland (2008) provided evidence that the short form is valid and reliable with adolescent clients. Hawley and Garland showed that the WAI short form shows moderate correlations between youth and parent (r = .25), and youth and therapist (r = .23) reports on alliance, as well as stability in youth reported alliance over a six-month time period (r = .67).

The Engagement Measure. Therapeutic engagement was measured using the Engagement Measure (Hall et al., 2001), which was developed to measure therapeutic engagement as observed by clinicians in mental health settings. The measure consists of 11 items, rated by clinicians observing therapy sessions using a five-point Likert scale from 1 (Never) to 5 (Always). Using a sample of 64 participants and 13 clinicians, this measure was shown to be both reliable and valid. Test-retest reliability for individual questions ranged from .71 to .84, with an overall scale test-retest reliability of .90. Interrater reliability ranged from .86 to 1.0 for individual items, with a total overall scale score of .95. Using a Mann-Whitney U test, discriminant validity was shown for all but two items on the initial measure (p <. 05), successfully indicating clients who were well or poorly engaged in therapy. These two items were removed in further iterations of the measure.

Smallbone et al. (2009) used the Hall et al. (2001) Engagement Measure to assess improvement in therapeutic engagement with adolescent sexual offenders in Australia. For their study, two items on the Engagement Measure were deemed not related to the population: appointment keeping without support (as all clients needed transportation to therapy sessions), and compliance with medication (as this was not a study involving medicinal treatment). These items were removed from the measure, and the modified nine-item measure was tested on an initial sample of 105 participants. Internal consistency was still found to have an alpha coefficient of .95. No other specific psychometric information is provided for the shortened measure, but Smallbone et al. (2009) reported that the modified measure was successfully used to rate increase in adolescent engagement in therapy over time. Given that members of the population in the current study require transportation to therapy sessions, and as this study does not involve medicinal treatment, this shorter, nine-item measure will be used for observing therapeutic engagement.

The present study supported inter-rater reliability for the use of the nine-item version of the Engagement Measure as used by Smallbone et al. (2009). Results of correlational analysis showed that Pearson product-moment correlation coefficients ranged from $r(19) = .90$, $p < .001$ to $r(26) = .96$, $p < .001$ between raters for the three individual therapy sessions. This means that each rater's score for observed client therapeutic engagement on the Engagement Measure was significantly positively correlated with each of the other two rater's scores for each therapy session, indicating that there is a high degree of inter-rater reliability for the nine-item Engagement Measure.

System for Observing Family Therapy Alliances. A second measure for observing therapeutic engagement with clients that was used in this study was the System for Observing Family Therapy Alliances (SOFTA; Friedlander et al., 2006). The SOFTA consists of four scales that measure different dimensions of client involvement in the therapy process: Engagement in the therapeutic process, emotional connection to the therapist, safety within the therapeutic system, and shared sense of purpose within the family. These four scales were originally designed as tools for observing alliances and engagement in family therapy settings, but Friedlander et al. state that the first three scales can be used with individual clients as well. For the purposes and logistical considerations (i.e., not having other family members involved in the therapy process) of this study the first scale (engagement in the therapeutic process) will be used to measure observed engagement in the therapeutic process with adolescent clients while watching videotaped therapy sessions. This scale consists of 11 areas that raters use to mark frequency of behaviors or topics of discussion brought up and considered by clients during therapy sessions. After viewing the therapy session, raters give an overall score for engagement in the session that ranges from +3 (extremely strong) to -3 (extremely problematic) based on frequency of observed engagement-type behavior.

Each of the SOFTA scales proved to be psychometrically sound with individual scale interrater reliability ratings of .67 to .95 across five studies, and Cohen's kappas of .81 for the English version and .71 for the Spanish version of the overall SOFTA measure (Friedlander et al., 2006). The engagement in the therapeutic process scale showed inter-rater reliability ratings ranging from .69 to .92 across five studies, as well as overall single-factor loadings for internal reliability of .81. The engagement in the therapeutic

process scale also showed concurrent validity with the WAI (Horvath & Greenberg, 1989) with a correlation of $r = .92$. This is believed to be indicative of how the constructs of engagement and alliance in a therapeutic setting are independent constructs, but influence one another and cannot be viewed as mutually exclusive (Hill, 2005).

As with the Engagement Measure (Hall et al., 2001), the present study supported inter-rater reliability for the SOFTA. Results of correlational analysis showed that Pearson product-moment correlation coefficients ranged from $r(19) = .91$, $p < .001$ to $r(26) = .97$, $p < .001$ between raters for the three individual therapy sessions. This means that each rater's score for observed client therapeutic engagement on the SOFTA was significantly positively correlated with each of the other two rater's scores for each therapy session, indicating that there is a high degree of inter-rater reliability for the SOFTA engagement in the process scale.

Validity of the Engagement Measure and the SOFTA. As a review of the literature suggests that the Engagement Measure (Hall et al., 2001) and the SOFTA engagement in the process scale (Friedlander et al., 2006) had not been used concurrently in a study of therapeutic engagement, a correlational analysis was performed in order to determine the convergent validity between these two measures. Results of the analysis showed that average observed client therapeutic engagement across the three therapy sessions as measured by the Engagement Measure was associated with the same as measured by the SOFTA with a Pearson product-moment correlation coefficient of $r(74) = .96$, $p < .001$. Further, individual session rating correlations between the Engagement Measure and the SOFTA were $r(25) = .95$, $p < .001$ for the first therapy session, $r(26) = .98$, $p < .001$ for the second session, and $r(19) = .97$, $p < .001$ for the third session. This

means that the Engagement Measure and the SOFTA engagement in the process scale were significantly positively correlated with one another, indicating that the two scales have a high degree of convergent validity with one another.

The Client Satisfaction Questionnaire. Client satisfaction was measured at the end of the third therapy session using the Client Satisfaction Questionnaire (CSQ-8; Attkisson & Zwick, 1982). Another scale originally developed for use with adult clients but shown to be valid and reliable for use with adolescent clients (Perkins & Scarlett, 2008), the CSQ-8 consists of eight items, rated by clients using a five-point Likert scale from 1 (Low rating) to 5 (High rating). The CSQ-8 has been shown to have good internal reliability, with an alpha coefficient of .93. The present study showed smaller, but still acceptable internal reliability with an alpha coefficient of .80. Inter-item correlations on the CSQ-8 range from $r = .59$ to $r = .87$. Also, the CSQ-8 shows good construct validity when compared to other satisfaction measures with *r*'s ranging from .60 to .80 (Attkisson & Greenfield, 2004). No other specific psychometric properties in regards to validity of the measure are provided, other than the statement that CSQ-8 scores are positively correlated with client ratings of symptom reduction (Attkisson & Zwick, 1982).

CHAPTER IV

RESULTS

Data were collected at the end of each of three therapy sessions for client (via the WAIC) and therapist (via the WAIT) rated therapeutic alliance, and at the end of the third therapy session for client overall rating of satisfaction with their therapy experience (CSQ-8). Data were also collected at after all therapy session were completed by coding the sessions for observed client therapeutic engagement via the use of the Engagement Measure and the SOFTA while watching videotapes of each therapy session. Table 1 compares the means and standard deviations at each of the therapy sessions for each measure by the type of treatment (Wii™-assisted motivational interviewing or traditional motivational interviewing) and for the overall group. Note that sample N's may not reflect direct relationships with degrees of freedom from other statistical analyses as not all study participants completed all measures, nor all therapy sessions.

Hypothesis 1

To test the hypothesis that Wii™-assisted motivational interviewing increases therapeutic alliance over the course of therapy more than when traditional motivational interviewing techniques are used alone, a 2 (Group) x 3 (Time) repeated measures analysis of variance (ANOVA) was performed. For client rating of therapeutic alliance, neither the between-subjects main effect of treatment group, $F(1, 19) = .80$, $p = .383$, $\eta^2_p = .04$, the within-subjects main effect of time, $F(2, 38) = .03$, $p = .974$, $\eta^2_p = .001$, nor the interaction between time and treatment group, $F(2, 38) = 1.12$, $p = .336$, $\eta^2_p = ..06$, were

Table 1

Means and Standard Deviations for Measures Between Treatment Groups

Measure	Traditional Motivational Interviewing			Wii™-assisted Motivational Interviewing			Overall Group		
	N	Mean	SD	N	Mean	SD	N	Mean	SD
WAIC									
Session 1	14	65.36	12.83	11	63.45	12.41	25	64.52	12.42
Session 2	14	66.71	17.07	12	62.92	13.93	26	64.96	15.51
Session 3	12	68.83	13.78	13	61.54	12.04	25	65.04	13.16
WAIT									
Session 1	15	54.80	12.85	13	56.62	8.73	28	55.64	10.97
Session 2	13	61.00	8.93	13	64.31	6.28	26	62.65	7.75
Session 3	11	66.00	5.80	12	67.83	8.34	23	66.96	7.14
Engagement Measure									
Session 1	13	35.97	7.01	14	33.00	8.62	27	34.43	7.88
Session 2	15	36.44	9.96	13	36.67	5.17	28	36.55	7.96
Session 3	11	37.52	7.67	10	35.50	5.52	21	36.56	6.65
SOFTA									
Session 1	14	1.50	1.89	14	1.50	1.53	28	1.50	1.69
Session 2	15	1.71	2.07	13	1.85	0.82	28	1.77	1.59
Session 3	11	2.03	1.57	10	1.80	0.95	21	1.92	1.29
CSQ									
Session 3	11	28.45	2.464	13	26.08	3.968	24	27.17	3.51

significant at an alpha level of .05. This means that there was no statistically significant difference between Wii™-assisted and traditional motivational interviewing in terms of client report of alliance at any time point, nor was there any statistically significant change in overall client reported alliance over time, or interaction between treatment group and session number.

Additionally, for therapist rating of therapeutic alliance, a 2 (Group) x 3 (Time) repeated measures ANOVA was performed. Mauchly's test of sphericity was found to be significant, $W = .50$, $\chi^2 = 12.53$, $p = .002$, indicating that the assumption of equality of variances and covariances was violated. To adjust for this, a Greenhouse-Geisser correction was used. The analysis yielded a significant within-subjects main effect of time, $F(1.33, 25.31) = 13.62$, $p < .001$, $\eta^2_p = .42$. This indicates that there was a significant change in overall therapist report of therapeutic alliance over time. Neither the between-subjects main effect of treatment group, $F(1, 19) = .50$, $p = .489$, $\eta^2_p = .03$, nor the interaction between time and treatment group, $F(1.33, 25.31) = .89$, $p = .384$, $\eta^2_p = .05$, were significant at an alpha level of .05. This means that there was no statistically significant difference between Wii™-assisted and traditional motivational interviewing in terms of therapist report of alliance at any time point, nor was there any statistically significant interaction between treatment group and session number.

As a follow-up analysis to the 2 (Group) x 3 (Time) repeated measures ANOVAs for both client and therapist report of therapeutic alliance, a 2 (Group) x 2 (Time) repeated measures ANOVA was performed for both client and therapist report of therapeutic alliance using only therapy sessions one and two, and again using only therapy sessions two and three to determine whether there were any effects of treatment group or time within these smaller time/session intervals. No statistical significance was found between sessions one and two, nor between sessions two and three in regards to a difference between Wii™-assisted and traditional motivational interviewing therapy in terms of client or therapist report of alliance, nor was there any statistically significant

change in overall client or therapist reported alliance over either of the two sessions, or interaction between treatment group and session number.

Hypothesis 2

To test the hypotheses that Wii™-assisted motivational interviewing increases therapeutic engagement over the course of therapy more than when motivational interviewing techniques are used alone, a 2 (Group) x 3 (Time) repeated measures ANOVA was performed. This analysis was first performed for the use of the Engagement Measure (Hall et al., 2001), and then for the use of the System for Observing Family Therapy Alliances engagement in the therapeutic process scale (SOFTA; Friedlander et al., 2006).

With the ANOVA for the Engagement Measure (Hall et al., 2001), Mauchly's test of sphericity was found to be significant, $W = .67$, $\chi^2 = 6.42$, $p = .040$, indicating that the assumption of equality of variances and covariances was violated. To adjust for this, a Huynh-Feldt correction was used. Analysis indicated that neither the between-subjects main effect of treatment group, $F(1, 17) = .29$, $p = .596$, $\eta^2_p = .02$, the within-subjects main effect of time, $F(1.71, 29.14) = 1.44$, $p = ..253$, $\eta^2_p = .08$, nor the interaction between time and treatment group, $F(1.71, 29.14) = .26$, $p = .737$, $\eta^2_p = ..02$, were significant at an alpha level of .05. This means that, as measured by the Engagement Measure, there was no statistically significant difference between Wii™-assisted and traditional motivational interviewing in terms of client engagement in the therapeutic process at any time point, nor was there any statistically significant change in overall client engagement over time, or interaction between treatment group and session number.

Analysis of the ANOVA for the SOFTA (Friedlander et al., 2006) indicated that neither the between-subjects main effect of treatment group, $F(1, 17) = .02$, $p = .892$, $\eta^2_p = .001$, the within-subjects main effect of time, $F(2, 34) = .19$, $p = .825$, $\eta^2_p = .01$, nor the interaction between time and treatment group, $F(2, 34) = .13$, $p = .882$, $\eta^2_p = .01$, were significant at an alpha level of .05. This means that, as measured by the SOFTA, there was no statistically significant difference between Wii™-assisted and traditional motivational interviewing in terms of client engagement in the therapeutic process at any time point, nor was there any statistically significant change in overall client engagement over time, or interaction between treatment group and session number.

As with the analyses for hypothesis one, as a follow-up analysis to the 2 (Group) x 3 (Time) repeated measures ANOVA for client therapeutic engagement, a 2 (Group) x 2 (Time) repeated measures ANOVA was performed for both the Engagement Measure and the SOFTA using only therapy sessions one and two, and again using only therapy sessions two and three to determine whether there were any effects of treatment group or time within these smaller time/session intervals. For the SOFTA, no statistical significance was found between sessions one and two, nor between sessions two and three in regards to a difference between Wii™-assisted and traditional motivational interviewing therapy in terms of client therapeutic engagement, nor was there any statistically significant change in overall client therapeutic engagement over either of the two sessions, or interaction between treatment group and session number.

For the Engagement Measure, however, analysis of client engagement from session one to session two yielded a significant within-subjects main effect of time, $F(1, 23) = 7.02$, $p = .014$, $\eta^2_p = .23$. This means that there was a significant change in overall

client engagement from session one to session two. No other statistical significance was found between sessions one and two, or between sessions two and three for the Engagement Measure. This means that while there was a significant change in overall client engagement from session one to session two, there was no statistically significant change in engagement from session two to session three, nor were the any statistically significant changes in client engagement between Wii™-assisted and traditional motivational interviewing groups.

Hypothesis 3

To test the hypothesis that in an initial therapy session therapeutic alliance, as rated by the client, is greater when using Wii™-assisted motivational interviewing therapy than with motivational interviewing techniques alone, an independent samples *t* test was performed for treatment group and client report of therapeutic alliance. Examination of the Levene's test for equality of variances showed that the homogeneity of variance assumption was met. The result of the *t* test indicated that there was not a significant difference in the mean level of client report of therapeutic alliance between the two treatment groups, $t(22) = .29$, $p = .774$.

Hypothesis 4

To test the hypothesis that in an initial therapy session observed client therapeutic engagement is greater when using Wii™-assisted motivational interviewing therapy than with motivational interviewing techniques alone, an independent samples *t* test was performed for treatment group and client report of therapeutic alliance for both the Engagement Measure and the SOFTA. For the Engagement Measure, examination of the Levene's test for equality of variances showed that the homogeneity of variance

assumption was met. The result of the *t* test indicated that there was not a significant difference in the mean level of observed client therapeutic engagement via the Engagement Measure between the two treatment groups, $t(24) = .96$, $p = .347$. For the SOFTA, examination of the Levene's test for equality of variances also showed that the homogeneity of variance assumption was met. The result of the *t* test indicated that there was not a significant difference in the mean level of observed client therapeutic engagement via the SOFTA between the two treatment groups, $t(25) = -.02$, $p = .985$.

Client Satisfaction

Although not stated as a hypothesis, an independent *t* test was performed to determine whether there were significant mean level differences between Wii™-assisted and traditional motivational interviewing groups with regard to overall client satisfaction at the end of the three therapy sessions. Examination of the Levene's test for equality of variances showed that the homogeneity of variance assumption was met. The result of the *t* test indicated that there was not a significant difference in the mean level of client satisfaction between the two treatment groups, $t(21) = 1.47$, $p = .099$.

Hypothesis 5

To test the hypothesis that client reported therapeutic alliance, therapeutic engagement, and client satisfaction with the therapy process are positively correlated for both treatment scenarios, a correlational analysis was performed for each variable at each therapy time point. The results of this analysis are displayed in Table 2. Results of the correlational analysis showed a significant positive correlation between client reported therapeutic alliance and observed client therapeutic engagement at sessions two and three on both the Engagement Measure and the SOFTA. Additionally, the results of this

analysis showed that final client satisfaction was significantly positively correlated with client reported therapeutic alliance at each time point.

Table 2

Correlations Among Ratings of Client Reported Alliance, Observed Therapeutic Engagement, and Final Client Satisfaction

Measure	WAIC		
	Session 1	Session 2	Session 3
Engagement Measure			
Session 1	.12	-	-
Session 2	-	.39*	-
Session 3	-	-	.54*
SOFTA			
Session 1	.25	-	-
Session 2	-	.37*	-
Session 3	-	-	.57**
CSQ-8			
Session 3	.48*	.65**	.73**

**. Correlation is significant at the 0.01 level (1-tailed).
*. Correlation is significant at the 0.05 level (1-tailed).

Finally, the results of this analysis showed that no significance was found for the association between the variables of client satisfaction at the end of the third therapy session and observed client therapeutic engagement at any time point for both the Engagement Measure and the SOFTA.

CHAPTER V

DISCUSSION

Significant Findings

Statistical analyses showed support for the fifth hypothesis—client reported therapeutic alliance, therapeutic engagement, and client satisfaction with the therapy process are positively correlated. These results provide support for Hill's (2005) and Karver et al.'s (2008) posit that therapeutic alliance and therapeutic engagement are separate, but intertwined constructs. Average observed client therapeutic engagement and average client reported therapeutic alliance at the second and third therapy sessions were positively correlated with one another. This lends credibility to Hill and Karver et al.'s beliefs that these separate constructs coincide with one another within the therapeutic process. The results of this study show that even though there were not significant differences in the mean level of therapeutic alliance and therapeutic engagement between the two treatment groups, the constructs of alliance and client engagement are positively linked together.

Further, while not part of a stated hypothesis, this study helped to further validate the measurement of therapeutic engagement by employing the use of two measures that had previously not been used concurrently to assess engagement in the therapy process. Both the Engagement Measure (Hall et al., 2001) and the SOFTA engagement in the process scale (Friedlander et al., 2006) were used in the present study to assess observed client therapeutic engagement. This study showed that these two measures were highly

positively correlated with one another, indicating convergent validity between these scales for their use in assessing observed client therapeutic engagement.

Nonsignificant Findings

Statistical analyses failed to support four of the five stated hypotheses. The first two hypotheses (which stated that Wii™ -assisted motivational interviewing increases therapeutic alliance and therapeutic engagement over the course of therapy more than when motivational interviewing techniques are used alone) were unsupported by the statistical analyses. No significant difference between the Wii™-assisted and traditional motivational interviewing technique groups was observed with regard to change in client reported therapeutic alliance or observed therapeutic engagement. Therapeutic alliance as reported by the therapist and observed client therapeutic engagement as measured by the Engagement Measure were found to significantly increase over the course of therapy sessions, but there was no difference for these variables between treatment groups. Also, for the increase in overall observed client therapeutic engagement, significance was found only between therapy sessions one and two, with no significant change in engagement measured between therapy sessions two and three.

Similarly to the findings for the first two hypotheses, the third and fourth hypotheses (which stated that in an initial therapy session, therapeutic alliance as rated by the client or observed therapeutic engagement is greater when using Wii™-assisted motivational interviewing therapy than with motivational interviewing techniques alone) were also unsupported by the statistical analyses.

Individual client factors. The nonsignificant findings from this study are believed to most likely result from a small sample size, and it is believed that a larger

sample size would have helped to show differences between treatment groups. However, another contributing factor may be individual differences between adolescent clients. It is possible that particular individual client factors inherent to adolescents may contribute to the degree to which change occurs in the formation of alliances and engagement in the therapeutic process over the course of therapy. One of these factors is individual client personality and/or predisposition to be open to talking with others in a psychotherapy setting. Some adolescents may just be more open to and comfortable with talking to a therapist than others. The use of the Wii™ in therapy may work best for increasing therapeutic alliance and therapeutic engagement with those clients who are not readily open to talking in a psychotherapy setting. In support of this, examples from several therapy sessions from this study are offered. Several clients who were mandated to attend therapy sessions were rated as having demonstrated moderate-to-high levels of observed therapeutic engagement on the Engagement Measure and the SOFTA while the Wii™ was being used during the first three sessions of therapy. Follow up discussions between the therapists who facilitated these therapy sessions and the therapeutic team revealed that once the Wii™ was removed from the therapy sessions, these adolescent clients "shut down," or did not readily engage in the therapeutic process to the degree that they did when the Wii™ was present. These clients ceased to respond openly to open-ended questions, did not continue to readily offer up information about their current problems and behaviors, and did not continue to appear as though they had maintained an alliance with the therapist(s).

Another example that may demonstrate the effectiveness of the Wii™ helping to increase observed client therapeutic engagement was seen with one particular client

where Wii™ would not operate correctly during the second therapy session. During the first and third sessions with this client, the Wii™ functioned properly, and the client was rated as being moderately-to-highly engaged in the therapeutic process on the Engagement Measure and the SOFTA. In the therapy session between these two sessions, however, where the Wii™ would not function property and its use was disbanded so that the therapy session could continue, the client was observed to offer up less information, raise fewer questions and insights to the therapist, and responded more frequently to therapist prompts with "yes" or "no" answers rather than with open-ended responses as the client did while playing the Wii™ in other sessions. Additionally, this client was observed to seem more "bored" in this non-Wii™ session than in sessions where the Wii™ was being played. As such, this client was rated lower for observed therapeutic engagement on the Engagement Measure and the SOFTA for the second therapy session.

Another individual client factor that may impact the amount of change that occurs in therapy with regard to formation of alliance and engagement in the process, and one which was not measured or considered for the current study is the *type* of behavior that the client either demonstrates in daily life, or was referred to therapy for. With this, "type" of behavior is identified as internalizing versus externalizing types of behavior. Though it would increase both the time requirements and number of measures that participants must complete, this information could be easily gathered through a standardized assessment such as the Youth Self Report (YSR; Achenbach & Rescorla, 2001; Ebesutani, Bernstein, Martinez, Chorptia, & Weisz, 2011). The YSR is a self-report assessment that details not only the degree to which an adolescent exhibits

behaviors that are of the internalizing or externalizing type (as compared to standardized scores based on population means), but also specific behaviors under each of those umbrellas, as well as behaviors that may classify individuals as meeting certain DSM-IV-TR criteria for diagnostic reasons. While *base* level type of behavior that the adolescent has engaged in could be found either by parent, caseworker, or verbal self-report from clients, the use of the YSR would enable more detailed classification of what possible behavior *types*, as well as specific behaviors adolescent clients may exhibit where the use of the Wii™ may help in the formation of therapeutic alliance and in increasing client therapeutic engagement.

Study Limitations

The main limitation for this study was the issue of recruitment and a resulting small sample size. Though there were plans to recruit study participants from several referring agencies, unforeseen changes with client referral sources limited the number of participants available for this study. Prior to the start of this study, the Colorado State University Center for Family and Couple Therapy (CFCT) had been receiving referrals from the local Center for Family Outreach (CFO) and Probation agencies for at-risk adolescents to receive mandatory courses of therapy. When recruitment for participants for the study finally began, referrals from both of these agencies ceased.

Additionally, although all incoming adolescents who were participating in the Campus Corps program (approximately 130 adolescents) were offered the option of participating in this study, only 11 Campus Corps participants volunteered to participate in the study, and only 8 Campus Corps participants agreed to participate once called upon. Some Campus Corps participants, when offered the option to participate in the

current study, made statements such as, “I’ve already done therapy; I don’t want to do that again,” and, “I don’t need therapy.” These statements help to reaffirm the stigmatized view that many adolescents, at-risk or not, have regarding psychotherapy. Campus Corps participants who originally volunteered to take part in the study but later declined to participate made similar remarks to those who declined participation from the outset, with additional remarks such as, “No, I’d rather do my Campus Corps activity.” This indicates that these adolescents would rather engage in an activity in which they feel some assurance in as being “fun” as opposed to only having the *possibility* of playing the Wii™ in therapy.

Possible Future Directions

Although little significance was observed in terms of difference in level of therapeutic alliance and therapeutic engagement between the two treatment groups over the course of this study, as individual clients were still observed to benefit from the use of the Wii™ in the course of therapy, the use of the Wii™ as a therapy tool, as well as those clients for whom its use may most benefit warrants further research. One option for future research is to screen clients for individual personality factors, openness to talking, and behavior types (internalizing versus externalizing) prior to enrolling them in the study so that those individual client factors that the Wii™ may best be suited to working with can be better understood. Future studies could then target certain adolescent clients who exhibit personalities and/or behaviors that would better identify them as being more averse to engaging in the therapeutic process.

Another possible future direction for research on this subject includes the retailoring of the study design to observe the impact of the Wii™ with at-risk adolescent

clients in a different manner. The use of the Wii™ for three sessions in a row may have not been the optimal implementation of the modality for all, or any of the study participants. The use of multiple baselines with individual clients—where alliance and engagement are measured both without and with the Wii™ over the course of several therapy sessions conducted under each modality—would provide for a more in-depth look into how individual clients are affected by the use of the Wii™ in therapy. This, coupled with the gathering of information on individual client factors would further inform researchers and therapists of not only the types of adolescent clients that the Wii™ may benefit as a therapy tool, but at what point(s) during the therapeutic process that the Wii™ may best be used at in order to increase therapeutic alliance and therapeutic engagement.

This lends to a third option for a possible future direction for research on this subject. It is possible that the Wii™ itself is not something that should be thought of as a "go to" therapy *modality*, but rather a *tool* that may help with the formation of therapeutic alliance and/or therapeutic engagement at times where the therapist and client feel "stuck" with moving forward in the therapeutic process. If a simple way of measuring both alliance and engagement could be implemented into each normal therapy session with *all* adolescent clients seen at the CFCT (or at another clinical/research facility), then the general level of alliance and engagement could easily be known throughout the therapy process. At points where the therapy process with adolescent clients seems to get "stuck," and alliance and engagement suffer, the therapist could employ the use of the Wii™ for a session (or several sessions) and the change in level of therapeutic alliance and engagement could continue to be observed in relation to the use of the Wii™. This

option for research would, however, necessitate the ongoing collection of data over a longer period of time in order to gather enough data to make any findings generalizable to a larger population.

Conclusion

The lack of statistically significant findings with regard to the outcomes between the Wii™-assisted and traditional motivational interviewing therapy groups does not negate the possibility of the Nintendo Wii™ as being a useful tool for helping to increase both client reported therapeutic alliance and observed client therapeutic engagement with at-risk adolescents. Although not all adolescent clients benefit from the use of the Wii™ in therapy sessions, it is still believed that the Wii™ may act as a tool that can help with certain clients in increasing therapeutic alliance and therapeutic engagement. As Hill (2005) put forth, therapist techniques lending to client engagement are essential, independent functions of the therapeutic relationship. The Wii™ may be a tool that therapists can use to create a more comfortable atmosphere in the therapy setting, reduce perceived stigma that adolescent clients may have about psychotherapy, and provide a space where adolescent clients do not feel pressured to talk face-to-face, but rather side-by-side with a therapist. What is important is to continue to research the use of the Wii™ as a therapeutic tool with regard to what types of individuals it may most benefit and at what point(s) during the therapeutic process its use may best be employed.

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