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Table of Contents

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PUBLISHER'S STATEMENT

The International Journal of Behavioral Consultation and Therapy (IJBCT), is published quarterly by Joseph Cautilli. IJBCT is an online, electronic publication of general circulation to the scientific community. IJBCT's mission is to provide a focused view of behavioral consultation and therapy for the general behavioral intervention community.

Additionally, IJBCT hopes to highlight the importance of conducting clinical research from a strong theoretical base. IJBCT areas of interest include, but are not limited to: Clinical Behavior Analysis, Behavioral Therapy, Behavioral Consultation, Organizational Behavior Management, Human Performance Technology, and Cognitive Behavior Therapy. IJBCT is an independent publication and is in no way affiliated with any other publications.

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Mission Statement

The behavioral psychologies are major forces that influence many areas of human interest. These psychologies draw on various learning theories to produce change in clients and consultees performance and combine in an area known as Behavior Therapy. Behavior therapy is a broad area that often lacks integration and understanding between the theoretical and technological aspects of the field.

The International Journal of Behavioral Consultation and Therapy is committed to increasing the communication between various areas of behavioral consultation and therapy. As the massive body of behavioral research in psychology and education has been produced, the BAO group deemed that a new journal was needed to handle the ever increasing interest and ever fractionating field.

The International Journal of Behavioral Consultation and Therapy strives to be a high quality journal that also brings up to the minute information on current developments within the field to those who can benefit from those developments. Thus, the International Journal of Behavior Consultation and Therapy will continue to publish original research, reviews of the discipline, theoretical and conceptual work, applied research, program descriptions, research in organizations and the community, clinical work, and curriculum developments. Our vision is to become the voice of clinical behavior analysis and behavior therapy practices.

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Authors who wish to be considered for publication in IJBCT must submit a signed assignment of rights form with their article. The form can be downloaded from the IJBCT website on the submissions page.

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Peer Review

All submitted manuscripts are reviewed initially by an IJBCT editor. Manuscripts with insufficient priority for publication are rejected promptly. Other manuscripts are sent to expert consultants for peer review. Information from submitted manuscripts may be systematically collected and analyzed as part of research to improve the quality of the editorial or peer review process. Identifying information will remain confidential.

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Rejected manuscripts will be returned to authors when specifically requested in the cover letter. Print copies of original illustrations, photographs, and slides will be returned with the manuscript. In all cases, manuscripts must be submitted electronically saved in "rich text format" (.rtf) to Joseph Cautilli, Ph.D., BCBA.

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In order to ensure that IJBCT will be accepted in the major psych databases, there are certain guidelines that must be followed for abstracts relating to our article and the Journal. The following guidelines are straight from the PsycINFO website:
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For use in PsycINFO and other databases, an abstract should not exceed 960 characters and spaces (approximately 120 words).

Characters may be conserved by:

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Begin with the most important information, but don't waste space by repeating the title. Include in the abstract only the four or five most important concepts, findings, or implications.

Embed as many key words and phrases in the abstract as possible; this will enhance the user's ability to find the citation for your article in a computer search. Include in the abstract only information that appears in the body of the paper.

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Use the present tense to describe results with continuing applicability or conclusions drawn and the past tense to describe variables manipulated or tests applied. As much as possible, use the third person, rather than the first person.

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* All articles should be single spaced, with one-inch margins all around.

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International Journal of Behavioral Consultation and Therapy

Message to Readers

Jack A. Apsche

As this edition of IJBCT is published it is with mixed emotions that this is my last edition of IJBCT as co-lead editor, with Joe Cautilli. Joe has been a friend, inspiration and visionary for all of the Behavior Analyst Online family, but especially for all of us at IJBCT. We have grown together to become a voice in the Clinical Behavioral Analysis field.

Joe has appointed me as Editor-in-Chief of IJBCT, starting January 1, 2007. It is with gratitude and humility that I begin this new position. My gratitude is to Joe Cautilli, Mike Weinberg, George Petersen, Melissa Apsche and all of our editorial board and contributors.

My vision for IJBCT is to become the strongest voice for innovations in Clinical Behavioral Analysis, to disseminate new, as well as, valid evidenced based treatments. We will move together to support Behavior Analysts in all areas of service delivery and support, encourage and publish articles in Behavior Analysis and Cognitive Behavior Therapy. I look forward to this challenge as part of the Behavior Analysis Online and Association of Behavior Analysis family.

All of us at IJBCT wish you the Happiest of Holidays and a healthy and prosperous New Year.

Jack A. Apsche

Editorial: Some Initial Thoughts on a Heritage Based Behavioral Approach to the Counseling of Juvenile Delinquents

Joseph D. Cautilli

Traditionally, and for good reason, the field of counseling has been dominated by multicultural approaches. Multicultural approaches focus on the internalization of multicultural principles. They observe levels of enculturation for a person in the culture of origin and use this assessment to understand unique features of the person's pattern of responding. For behaviorists, the conditioning of these principles makes perfect sense and opens the counselor to explore how such values and beliefs are shaped by environmental forces (see Skinner, 1972). In this view, society (most importantly the family environment) establishes contingencies around behavior patterns of people to encultured them to behave in a certain way. For counselors such forces lead to the discussion of power, privilege, and contextual factors that impact the client's life and way of living. For juvenile delinquents, this approach may not be additive to traditional approaches. Indeed, recent research in the area of juvenile delinquency suggests that cultural tailoring is not necessary for such programs (Wilson, Lipsey, & Soydan, 2003). In addition, some research exists that families may actively train children in antisocial rules (Snyder, McEachern, Schrepferman, Zettle, Johnson, Swink, & McAlpine, 2006) and thus the instillation of these values and rules might be counter productive for the overall adjustment in the current culture. Such findings suggest that maybe it is time to explore an alternative approach to delinquency.

An alternative approach may allow for the creation of a dialectic through which an ebb and flow may allow counseling to meet the needs of greater number of clients. Thus, instead of starting with the culture of origin and determining enculturation, a logical counter point would be to start with the current culture and determine enculturation. In addition, this approach could establish goals of greater effective functioning in the current culture (e.g. teaching ways to recognize contingencies in place for the current culture and how to increase levels of reinforcement). For lack of a better term, this approach will be called a heritage-based approach.

Heritage approach reflects on the values that are passed down from generation to generation in the local culture (in the US – American culture). These values are passed down from preceding generations and tradition through the same cultural contingencies such as the family, the legal system, the school, and the community. This approach would also be consistent with Skinner (1972) in that it holds to social conditioning shaping behavior. Indeed, as Skinner (1972) pointed out what a society values is what it reinforces. In the US, these values would be highlighting things like leadership, self-control, individual responsibility and civics. Unlike a multicultural approach, which explores the culture of origin, level of enculturation, and tries to use metaphors that evoke various relational frames (Blackledge, 2003; Hayes, Barnes-Holmes, & Roche, 2005) from that culture, a heritage based approach uses metaphors and images to evoke relational frames of the common current culture to explore values (rules the person lives by) and symbols of the common culture to help collaboratively set goals for therapy. Skinner (1972) discussed the power of using such symbols as art, music, and cultural images in general but applied to therapy they can become a strong and energizing force for change. As with a multicultural behavioral approach draws on the seven standards of behavior analytic therapy to formulate its case conceptualization and intervention plans: (1) a behavior analytic model of child development (Bijou & Baer 1961; Novak and Pelaez, 2004) and a focus on developing behavioral cusp skills (Bosch & Hixson, 2004); (2) a comprehensive ideographic functional assessment, collaborative creation of behavioral goals and clear, specific behavioral objectives and linking intervention to function (positive behavioral support) (3) behavioral activation (Lewinsohn, 1975; Kanter, Baruch, & Gaynor, 2006; Spates, Pagoto, & Kalata, 2006) and contingency management (operant conditioning of EEG patterns, point systems, level systems, community reinforcement); (4) trigger analysis (5) use of respondent conditioning procedures as needed; (6) a strong focus on the therapeutic relationship as derived from Functional Analytic Psychotherapy; (7) the disruption of faculty rule control focusing on acceptance (Hayes, Strossel, & Wilson, 1999) and forgiveness (Cordova, Cautilli, Simon, & Axelrod-Sabag, 2006) and (8) a commitment to living a valued life similar to Acceptance and Commitment Therapy (Hayes, Strossel, & Wilson, 1999) and behavioral activation (9) helping the client to see how their behavior has been shaped by current environmental contingencies (i.e., Bandura, 1969 p. 23-24) and (10) helping clients to identify the impact of their behavior on their thinking, feeling and interpersonal relationships(Skinner, 1957; Bandura, 1977, p. 345). Thus, the approach would remain

purely behavioral and the difference in the two approaches is the focus of the case conceptualization and the metaphors used in the counseling or behavioral psychotherapy session. While an in-depth review of each of the assessment and intervention procedures is beyond the scope of this brief editorial, this author will review some of the basic elements of the approach.

A heritage based behavioral counseling approach is a life span approach to child development as outlined by Bijou and Baer (Bijou, 1975, 1979, 1998; Bijou & Baer 1961) and recent model expansion by Novak and Pelaez (2004). The behavioral development model looks at how a person's genes holistically interact with the environment. A major focus of this work is targeting specific and critical behavioral skills that allow children to access a developmental cusp (Bosch & Hixon, 2004). Some examples of cusp skills are correspondence skills, developing ruled governed behavior, problem solving, social skills such as empathy and perspective taking, contingency awareness training (looking at short and long tem consequences of ones action- Zarb, 1992) and cultural analysis skills (Mattaini, 2006)(including understanding financial cultural contingencies- credit, compound interest). This way of establishing priorities in the session is critical to understanding setting factors and longitudinal models of behavior patterns.

As a behavioral approach, the heritage approach would then move through the standard practice of pinpointing problem behavior targets and conducting a comprehensive functional behavioral assessment including as skills level assessment to explore factors that prevent reaching those goals. These environmental factors can then be addressed through evidenced based and functionally based interventions. This approach can foster relearning based primarily upon manipulation of setting events, generating alternative behavior to antecedents and establishing a reward system while lessening or omitting punishment.

In addition, a heritage based behavioral approach would begin with the pinpointing of target behavior and setting up objectives. Behavioral objectives serve as a method for establishing stimulus control over the therapeutic relationship. While behavioral objectives have a small but persistent effect size (Asencio, 1984), the collaboration with the client can strengthen this effect. Client's ability to perform in the natural environment may be markedly different than performance in other settings. Thus, pure reliance on information occurring in session would be questionable. Performance should be assessed through direct observations, which can be completed at the individual's job site, in the classroom, or in the home, depending on the person's level of functioning. Functional assessment is comprehensive and should consist of functional interviewing, questionnaires, rating scales and behavioral observation, simulations to assess skills, analogue assessment to determine function if it is not clear, situational assessment, and observation in the natural environment. First, functional assessments can improve the effectiveness and efficiency of treatment (Horner, 1994). Secondly, until the recent emphasis on functional assessments, punishment approaches were considered to be the most effective means of reducing severe behaviors (Carr, Taylor, Carlson, & Robinson, 1991; Cataldo, 1991). A major problem with using punishment approaches is punishment fosters aggression (e.g., violence, assaults, vandalism) and retaliation, escape from punishing environments (e.g., tardiness, truancies, and dropouts), low self-concepts/ feelings of depression (Lewinsohn, 1975; Kanter, Cautilli, Busch, & Baruch, 2005), and negative attitudes toward self, school and community (Azrin, Hake, Holz, & Huchinson, 1965; Berkowitz, 1983; Mayer & Sulzer-Azaroff, 1991). Functional assessment has such strong empirical support that National Institute of Health panel recommended the treatment of severe behavior disorders be based on the results of a functional assessment (National Institute of Health, 1989). Thus, the functional assessment can lessen the use of aversive in the environment and increase the client's options and feelings of freedom.

While the above is certainly critical for change, targeting in session clinically relevant behavior based on the information from the functional assessment is paramount (Kohlenberg & Tsai, 1991). For behavior analysts, the core approach to this is the model of Functional Analytic Psychotherapy (Kohlenberg & Tsai, 1991), which in part uses verbal conditioning in session to target and generate change. Looking over the APA guidelines for empirically valid treatments, the verbal conditioning approach has well over two group designs suggesting its effectiveness in targeting behavior in session and is thus a well-established evidenced based approach for targeting and changing behavior in session. But this approach is more then just verbal conditioning adding to it, Skinner (1957) analysis of verbal behavior and a sharp focus on contextualism as the basis for case formulation in understanding client's problems. Kohlenberg and Tsai (1991) based on a comprehensive functional analysis of the therapeutic relationship argue that the therapeutic relationship is the most natural place to target problem behaviors as they arise. Some older empirical studies support it use with chronic populations such as antisocial personality. Bryan and Kapche (1967) demonstrated that verbally conditioning "I" messages and statements of personal responsibility led to

increases in those types of statements in adult antisocial males. In addition, Williams and Blanton (1968) used verbal conditioning to increase the number of feeling responses made by male inpatients.

The use of acceptance and commitment therapy to disrupt faulty rule control is another critical process of heritage based behavioral counseling. A recent meta-analysis of ACT shows the approach to have both efficacy and effectiveness studies supporting it. In addition, it is effective in reducing discomfort and increasing congruency between client's values and the way they live their lives (Hayes, Luoma, Bond, Masuda, & Lillis, 2006).

The primary goal of a heritage approach would be consistent with that of a multicultural counseling approach and indeed all counseling/therapy approaches: helping the client to determine what for them is a valued life (Bach, & Hayes, 2002; Hayes, Strossel, & Wilson, 1999). A heritage approach may allow for a method to enhance the efficacy of prevention and treatment initiatives, as well as an invitation to readers to practice multiculturalism in counseling and therapy. Within the heritage based model, knowledge, skills, and awareness of the commonalities of humanity and the interacting factors of age, citizenship, ethnicity, gender, language, mental and physical ability, race, sexual orientation, social and economic status, spirituality, and world view.

In conclusion, a heritage-based approach to counseling differs from the multicultural approach in the values that the therapist brings to session and the starting point for assessment and intervention in which the comparison is the level of enculturation in the current culture and not the culture of origin. This could lead to focus on different goals. The approach is a behavioral one, which focuses on the use of solid evidence-based practices of assessment and treatment. This approach might be of particular appeal to first generation immigrants to a country. Often these immigrants view coming to a country with great enthusiasm and this approach to treating delinquency offers a way to draw on that powerful energy. In addition, this approach offers information to examine the historical context of the receiving culture (ie., in the US - American culture) and thus can be of particular benefit to the client as they try to integrate differences. In addition, this approach may be more appealing to people who are strong identified with the nationalism of a country and more traditional values. Information is presented on awareness and identity as foundational principles of heritage based practice and therapist client communication as contexts for mindful achievement, exploration of values, appealing to a higher self, working from within as contextual mental health and organizational competence, and a contextual approach to assessment. In the end, it is an empirical question to determine which client type would best respond to which type of approach. Clearly, some clients will need an approach focused on historal oppression and others will need an approach focused on movement into the dominant culture.

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Functional Behavioral Assessment and Intervention with Emotional/Behaviorally Disordered Students: In Pursuit of State of the Art

Angela Waguespack, Terrence Vaccaro & Lauren Continere

Abstract

The application of functional behavioral assessment (FBA) procedures for the purposes of developing interventions for students with emotional and behavioral disorders (E/BD) has received considerable attention since the 1997 reauthorization of the Individuals with Disabilities Education Act (IDEA). The purpose of this paper is to review the literature addressing the use of FBA with E/BD students in school settings and to discuss implications for a "state of the art" model that integrates empirically supported procedures with promising practices to be implemented within the ecology of current educational systems.
KeyWords: Functional behavioral assessment, functional assessment, functional analysis, indirect assessment, direct assessment, emotional disorders, behavioral disorders, descriptive analysis

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Since the 1997 reauthorization of the Individuals with Disabilities Education Act (IDEA), schools have been required to conduct functional behavioral assessments (FBAs) and develop positive behavioral support plans for students with disabilities who were exhibiting challenging behaviors that interfered with their learning or the learning of others. Additionally, cumulative suspensions equaling or exceeding ten days within a school year were considered a change in placement and required the IEP team to conduct the FBA within ten days of the change in placement for those students if a behavior support plan was not in place at the time of the infraction. The 2004 revision of IDEA, The Individuals with Disabilities Education Improvement Act, softened the FBA requirements to include only those students whose disciplinary infractions are manifestations of their handicapping condition.

While the 1997 legislation did require the use of FBA for students exhibiting significant behavioral difficulties, it did not specify procedures or techniques to assess behavior for the purpose of determining function, thus no gold standard that details how to implement the mandate existed in 1997 and still does not exist. Some authors argue that the legislation was passed prior to the field having adequate empirical literature to demonstrate the use of these procedures with this population. In a review of 97 studies including 458 participants, Nelson, Roberts, Mathur, & Rutherford (1999) concluded that the research base on FBA with all populations was just emerging at the time of the mandate.

To comply with the legislation, school districts throughout the country were forced to establish FBA procedures and identify or prepare personnel who could conduct FBAs and prescribe behavioral support plans based on those assessments. School districts essentially had two choices: develop professional expertise in functional assessment for their school personnel, or secure the services of behavior analysts. Much of the initial efforts aimed at conducting school based FBA modeled the type of applied behavior analysis typically reported in studies in the Journal of Applied Behavior Analysis with subjects with developmental disabilities (DD) (Gresham, 2003).

Implemented practices in the schools relied less on research than on the "cottage industry" of FBA that grew out of legal necessity (Sasso, Conroy, Sticher and Fox, 2001). Increasingly then, developing forms of FBA and function guided behavioral intervention were proposed and evaluated in the research with greater rigor. At the same time, legal analysis of case law emerging since IDEA 1997

provided support for many aspects of what experts in the area would consider "best practices." Etscheidt (2006) reviewed all cases from 1997 to present in which the development of a behavior intervention plan was the subject of the appeal. Several themes emerged from this review including the notion that, in students with IDEA eligibilities, behavior plans that include positive behavioral supports must be developed when behavioral needs are evident and the child's learning (or the learning of others) is impacted. Secondly, behavior intervention plans must be individualized and based on a recent FBA that answers the question of "why" the behavior is occurring. Finally, treatment integrity must be assessed and a formative evaluation process implemented to inform the need for modifications.

In the first few years of IDEA 1997 implementation, the research on the application of FBA to intervention with students having E/BD or at risk for E/BD was mixed. There appeared to be no consistent trends that described a common or complete model of FBA that lead to function-based interventions. Much variability existed in the research findings relative to assessment measures, procedures, variables, procedural integrity, generalization of treatment effects and social validity (Heckaman, Conroy, Fox, & Chait, 2000). As practitioners and researchers gained experience applying FBA in the context of the 1997 requirements, function based interventions began to look less like the contingency based interventions of applied behavior analysis and more like behavioral instruction. Horner, Sugai, Todd and Lewis-Palmer (2000) proposed the "Competing Behavior Model" that specified the use of teaching "replacement behaviors" as central to function based intervention or Positive Behavioral Support (PBS).

With the advent of the No Child Left Behind Act, a results oriented accountability has been thrust upon public education. The standard of providing evidence based practices, while intended to raise academic achievement for all students is particularly applicable to students with emotional or behavioral disorders (E/BD) (Gable, 2004). Greater scrutiny will be applied to the educational practices that are used with students with E/BD. There is a need to move beyond the single subject design that typifies FBA and PBS research to extend to well-controlled experimental validation of PBS and function based intervention, especially with E/BD. It is within this historical backdrop that we describe the process of FBA and look toward what a "state of the art" approach to FBA might look like for E/BD students.

Components of FBA

FBA is a process rooted in applied behavior analysis whereby relevant and specific data are collected to determine *why* a particular behavior occurs within a given context so that appropriate interventions can be developed and implemented. It differs from traditional assessment approaches which consider problem behaviors as they relate to internal pathology or other behavioral approaches which focus on the topography of behavior in intervention development (Asmus, Vollmer, & Borrero, 2002). Stated simply, methods employed in FBA "seek to systematically collect information about behavior and the antecedents and consequences surrounding it" (Gresham, 2003, p.284).

While there are no "hard and fast rules" regarding what procedures constitute a "state of the art" model for conducting FBAs in schools (Drasgow & Yell, 2001), there is consensus regarding the phases for collecting information relevant to identifying functions of behavior. Terminology varies considerably; however, FBA procedures can be categorized into one of the following (a) information gathering, (b) hypothesis formulation, and (c) hypothesis testing (Cone, 1997). The term functional analysis has often been used interchangeably with FBA; however, it is more accurate to consider FBA an umbrella term that includes both indirect and direct assessments, which guide phases one and two, while functional analysis is typically included in phase three as a means of directly manipulating environmental variables to test or confirm hypotheses.

As in any sound assessment process, FBA should include multiple methods of information collected from multiple sources (Neilsen & Mcevoy, 2004). Sugai et al., (2000) maintain that the process should result in three distinct outcomes. Hypothesis statements which include operational definitions of the problem behavior, as well as descriptions of the antecedents and consequences that predict the occurrence or maintain the problem behavior should be generated. Second, there should be direct observation data that supports the hypotheses. Third, a behavior support plan should be generated which is clearly linked to the hypotheses verified in the assessment phase. Other researchers have questioned the need for direct observations or analog assessments as a matter of course in every case, particularly when considering students within general education settings (Scott, Bucalos, Liaupsin, Nelson, et al., 2004).

Consistent with the literature regarding key components of the FBA process, no consensus was found in the literature with regard to which assessment instruments/procedures must be included in an FBA in order to conclude that the procedures were valid, although review of the literature suggests that direct measures are almost always included in FBAs (Sasso et al., 2001). Further, within the categories of direct versus indirect measures, a plethora of options exist; however, many of these instruments were developed for use with developmentally disabled populations rather than E/BD and have not been extensively evaluated as to their reliability and validity with other populations (Quinn et al., 2001). Gresham (2003) extended this discussion of the measurement challenges inherent in applying FBA to at-risk students or students identified as having high incidence disabilities in school settings and concluded that much work is needed in terms of extending the FBA methodology to this population. Within this context, a review highlighting the strengths and weaknesses of the various types of assessment follows.

Indirect assessments typically consist of structured interviews, scales, checklists, or questionnaires designed to be completed by the child, him/herself, or by someone directly responsible for the child (such as the teacher or primary caregiver) in order to provide information regarding the target behavior and the antecedents and consequences surrounding it. Commonly used indirect instruments in the literature include the Motivation Assessment Scale (MAS; Durand & Crimmins, 1988), the Questions About Behavioral Function (QABF; Matson & Vollmer, 1995), the Functional Assessment Interview (O'Neill et al., 1997), the Student-Assisted Functional Assessment Interview (Kern, Dunlap, Clarke, & Childs, 1994), the Functional assessment checklist for teachers and students – Part A & B (FACTS-A&B; March et al., 2000) and the Functional Assessment and Interventions Program (FAIP; University of Utah, Utah State University, & Utah State Department of Education, 1999).

Indirect assessments are less time consuming and require less experience to administer and score, thereby being the most feasible way to measure the behavior for a specific child (Floyd, Phaneuf, & Wilczynski, 2005). However, indirect assessments are criticized because those completing the reports may have trouble recollecting events and/or personal judgments may confound the results causing evaluators to come to incorrect conclusions or hypotheses. While there have been no set guidelines for the use of indirect measures and studies demonstrating their validity are difficult to find (Floyd et al.), researchers are addressing the validity of these types of assessments with regard to their convergence with more direct forms of assessment in an effort to inform practice (Floyd, et al.; Newcomer & Lewis, 2004; Hartwig, Heathfield, & Jenson, 2004).

Direct assessments consist of direct observations of student behavior either in a natural setting or in a setting where the behavior is likely to naturally occur (Quinn, Gable, Rutherford, Nelson, & Howell, 1998). Behavior records are usually done on scatter plots, (Touchette, MacDonald, & Langer, 1985) through descriptive analysis, (A-B-C; Bijou, Peterson, & Ault, 1968; Lalli, Browder, Mace, & Brown, 1993) or analyzed using conditional probabilities (Lalli et al.). Direct assessments are beneficial because the student is observed in the natural setting and confirmation of data obtained from assessments remote in time and place are possible.

There are disadvantages associated with direct assessments that may reduce the feasibility or preclude their use in school settings with E/BD students. The FBA procedures used with DD populations frequently focused on easily observable, recurrent, high frequency behaviors; however, with many students who require FBAs because of out-of-school suspensions, the behaviors tend to be of low frequency and high magnitude. Examples of such behaviors include the possession of weapons and drugs, and serious acts of aggression, which do not lend themselves to direct observations. Further, it may be intrusive to the environment for a researcher to enter it, there may not be trained assessors available for observation, or reactivity effects may occur due to a researcher's presence (Asmus et al., 2002). For these reasons, many authors suggest that indirect assessments are a necessary component of FBAs and need to be included in the process. More research is needed concerning the usefulness, applicability, and reliability and validity of both indirect and direct methods in assessing function with E/BD children.

The third phase of data collection reported in the literature is experimental or functional analysis which is employed in order to confirm or test hypotheses generated in previous phases. Students are observed directly under control conditions, as well as experimental conditions of high and low attention and high and low task difficulty or demand. Rates of problem behavior are compared between conditions (e.g. attention and escape) to establish function probability. In the DD literature, the use of analog assessment to confirm the function of behavior is a standard approach (Ervin, Radford, Bertsch, Piper, Ehrhardt, & Poling, 2001); however, in school settings, administrators may be reluctant to allow personnel to create analog conditions to purposefully elicit high rates of problem behavior that may be disruptive or destructive (Heckaman et al., 2000). In contrast, when investigating the function of low frequency behaviors, direct observation may not be possible, making analog assessment particularly useful (Johnston & O'Neill, 2000). In studies with DD populations, applied behavior analysis experts are generally the individuals implementing FBA procedures, most often in clinic settings. The research is yet to provide clear focus regarding how these procedures can be implemented in the schools and when these more expert, time-consuming procedures are warranted.

Toward State of the Art in FBA

A state of the art model for conducting FBAs in schools seems just as elusive now as it was in 1997. Just as behavior analysts would argue that individual student behavior must be investigated within the context in which it occurs and operants determined prior to developing intervention plans, it is the unique characteristics of systems, programs for E/BD students, and the students and stakeholders themselves that make it such that a "one size fits all" model has not been forthcoming. Within the context of implementing IDEA 1997 and now IDEA 2004, unique features of districts, schools, and students must be considered and FBA methods and intervention plans tailored to fit within the ecology of those systems (Sugai et al., 2000). In terms of the literature informing those working with E/BD students in school settings, significant gains have been made. Our empirical base for conducting FBAs has grown substantially in the past nine years and includes numerous studies demonstrating positive results in behavior change with E/BD students (Lewis, Hudson, Richter, & Johnson, 2004; Stage et al., 2006) Further, studies directly comparing function-based versus non-function-based interventions have been generally supportive of the assumption that individualized assessments geared toward determining function are necessary to obtain maximal results (Ingram, Lewis-Palmer, & Sugai, 2005; Newcomber & Lewis, 2004). Out of this literature emerged implications and promising practices that propel us toward a state of the art model of FBA that can be modified to fit within the context of established educational systems.

Increasing time and resources through prevention

One very salient and critical aspect in utilizing FBA with E/BD students is the allocation and use of personnel resources in addressing students referred to administration for behavioral infractions. The

development of a state of the art model for applying the FBA literature to applied practice in the schools begins with those involved in the process "working smarter" to free school personnel to address more challenging behavioral problems in a more comprehensive manner.

The current state of the literature suggests promise in maximizing positive outcomes through prevention efforts that include tiered models of prevention/intervention. Positive Behavioral Support (PBS) is gaining a foothold in general education settings and the literature regarding the effectiveness of this approach is growing. In one study, Sugai and Horner (2006) described a three-tiered system of behavioral intervention called School-Wide Positive Behavioral Support (SWPBS). SWPBS uses behavioral data to identify students in need of intervention. Behavioral support and the complexity of the behavioral assessment utilized to prescribe that support changes as a function of student need and student response to intervention. At tier one, the emphasis is on the prevention of behavioral difficulties through proactive approaches. School environments are arranged to discourage problem behavior, adaptive skills are taught through the curriculum and positive reinforcement is systematically delivered throughout the school. Non-function-based group or individual interventions are applied at tier two for students who require more support than available at tier one. Finally, when students are not responsive to intervention at tier two, FBA prescribed, individualized interventions which are developed by school based professional teams are applied. These interventions are often implemented by special education personnel in E/BD programs and are estimated to be needed for one to seven percent of the population (Sugai, Sprague, Horner, & Walker, 2000).

Preliminary evidence regarding the effectiveness of PBS models suggests that discipline rates are reduced by incorporating tiered systems of intervention (see Oswald, Safran, & Johanson, 2005; Kern, Hilt, & Gresham, 2004, for a review of the literature on PBS past applications and results). For administrators, when discipline referrals are significantly reduced, more time and personnel can be spent on working with E/BD students who often demonstrate the most need. Without a system of reducing the total number of office and team referrals, we would argue that the ability of schools to effectively implement a true functional behavioral assessment process with E/BD students in the "spirit" of the law is limited.

While the literature would suggest that group, non-function based interventions are often applied effectively with a percentage of the school's population (Scott & Eber, 2003), this is often not comprehensive enough to meet the needs of E/BD students. Often, group interventions are used to manage the E/BD student's behavior in special education settings and interventions that are individualized and function-based are not considered until behavior reaches the level of severity necessitating or cumulating in a ten-day suspension. It is often then, and only then, that teams convene to consider why the problem behavior(s) occurs and the contextual variables surrounding it. It is our contention that this state of practice is mediated by the lack of time and personnel resources to do it all. Tiered intervention models provide promise in terms of schools being able to attend to the behavioral and social needs of all students by addressing a significant proportion of the population through prevention before these individuals warrant more intensive intervention.

Focus on antecedent-based curricular interventions

There has been an increased focus on antecedent-based interventions to inform teachers as to how to structure the classroom for success (Stichter, Conroy, & Boyd, 2004). Antecedent interventions focus on the events that precede or occur during the targeted problem behavior. Some examples of these events include physiological states, environmental factors, or social events. This focus moves away from the traditional view that focuses on the functions of the behavior by controlling the consequences. In essence, antecedent interventions reduce or eliminate the need (that the function serves) for the problem behavior by increasing the reinforcing nature of the situation or reducing its aversive tendencies.

Within the context of antecedent based intervention, a state of the art model would also give due consideration to the link between academics and behavioral difficulties for E/BD students. Much of the problem behavior that is exhibited in E/BD students is related to academic task avoidance or escape. Determining the instructional level and tailoring the curriculum to the skill level of each student is one of the most basic interventions likely to reduce problem behavior mediated by avoidance/escape. In our experience in E/BD classrooms, teacher focus is on the behavioral and/or social needs of the students, rather than on their academic needs. We would argue that, in the pursuit of creating a school environment that would allow FBA to be addressed in a state of the art manner, creating classroom settings that focus on and foster academic achievement of E/BD students is critical. Similarly, structuring the environment to prevent or reduce the likelihood of problem behaviors is also important.

Building Team Capacity

The state of the art would suggest we consider the "spirit" of IDEA 1997 and 2004 to include a true team-based approach whereby personnel are included who have sufficient expertise to provide relevant information regarding the function of behaviors within specific settings. Some authors recommend training various school and district level personnel to different competence levels depending on the role required of them in the team process (Conroy, Clark…1999). At the highest level of training, team members should be able to effectively use not only FBA procedures, but to select effective interventions linked to function, and to develop procedures for monitoring whether interventions are implemented with integrity, result in desired outcomes including long-term behavior change, and are socially valid.

In a promising study investigating the effectiveness of a training model to teach school-based teams FBA and behavior support planning, Chandler, Dahlquist, Repp, & Feltz (1999) concluded that teams can learn to effectively conduct FBAs and develop function-based interventions under certain conditions. In this study, highly trained consultants guided the FBA process in the classroom setting, modeled application of strategies and provided feedback and reinforcement to staff over a four-month period.

More recent studies also provide empirical support that school-based teams can conduct FBAs and develop interventions with researcher assistance (Kern, Gallagher, Starosta, Hickman, & George, 2006). Similarly, recent studies investigating teacher ability (with researcher support) to conduct various aspects of the process have reported positive outcomes in relation to conducting functional analysis conditions in the classroom setting (Kamps, Wendland, & Culpepper, 2006; Wright-Gallo, Higbee, Reagon, & Davey, 2006) and in producing summary statements to identify the probable function of behavior to focus interventions (Packeham, Shute, & Reid, 2004). While more rigorous empirical investigation is clearly needed, these studies provide some support that teachers can be trained to implement aspects of the FBA process and subsequently implement interventions and that school-based teams can be effective in independently conducting FBAs and developing function-based interventions.

Given the current literature, we propose that a combination of an expert consultant and team members trained to various levels of proficiency in the process is perhaps the most feasible and potentially effective means for school systems to implement a state of the art FBA process. Teams should also include parents as active participants in the process, as preliminary studies suggest that the input of parents with regard to unique information regarding child behavior may significantly improve the effectiveness of the process and lead to increased generalization and maintenance of desired behaviors (Peck-Peterson, Derby, Berg, & Horner, 2002). Further, for students functioning at the level necessitating FBA and a behavioral support plan, we can assume that partnering with the family (and perhaps, the community) would improve the likelihood of positive outcomes (Scott & Eber, 2003).

Tailoring Procedures on Case-by-Case Basis

Some evidence suggests that indirect or descriptive analyses may be sufficient for determining function with many students exhibiting problem behavior (Heckaman et al., 2000). Other studies report a lack of convergence of indirect and direct assessment procedures in hypothesizing function, suggesting the need, in some cases, for using analog assessments to confirm preliminary hypotheses. Given the state of the literature, we would again posit that it is the unique aspects of the student (problem severity, history of patterns of behavior), classroom (teacher skills and training), and school (expertise of team members in FBA) that dictate the rigorousness of the procedures needed and the ability of the team to conduct a meaningful FBA. Behavior analysts would likely recommend that even in applied settings with milder problem behaviors, functional analysis is required in order to maximize the likelihood that the true function(s) of behavior are determined. School personnel and practitioners would indicate that, unless procedures fit within the ecology of the school and district, they will not be implemented with integrity. Our position follows that of Yeaton and Sechrest (1981) when designing interventions: use the "weakest that works." In this mode, we include a discussion of promising indirect assessment measures next.

When considering state of the art in selecting assessment methods, a review of the limited validity and reliability literature on a small number of the indirect instruments lends to narrow recommendations for state of the art in the area of assessment. We direct our focus to indirect measures, as they have the most promise in terms of consistent use by school-based teams. The FAI, an interview for parents, teachers, and caregivers has been extensively used in practice and research and several articles have analyzed its validity and reliability (see Floyd et al., 2005 for a review). The FAI gathers information about the individual child's problem behaviors, the setting in which they occur, the antecedents and consequences that may be attributed to the maintenance of the behaviors, and possible ways that the behaviors gain reinforcement. The FAI allows the evaluator and teacher or caregiver to determine hypotheses about the functions of the identified problem behaviors. It is recommended because of the number of studies published on its validity, its thoroughness, popularity, and usefulness in generating hypotheses.

Another consideration in building a state of the art model of FBA would include procedures that are made easier because of technology. A new and promising assessment instrument is the FAIP. The FAIP is a computerized indirect assessment tool that allows the practitioner or teacher to answer questions in interview form that will subsequently create a profile of the child, his or her deficits, and the maintaining antecedent or consequential events. Unique to the FAIP is that it also will generate a list of empirically supported interventions fitted to the child's problem areas. Hartwig, and colleagues (2004) found that the FAIP had good test-retest reliability and adequate interrater reliability and concurrent validity. Convergence with other indirect assessments was also adequate. Further, consumers using the FAIP found it to be the most useful when compared to two other common indirect instruments; it was clear in its instructions, provided useful interventions, had high convergence with each practitioners' opinions, and provided new and useful knowledge about behaviors and their functions.

School teams that are responsible for conducting FBAs and developing behavioral interventions should be at liberty to select from a variety of assessment techniques that have been empirically validated for the purposes and populations for which they are being used. The literature is emerging with regard to selection of the measures that meet these criteria. A state of the art model would suggest that the rigorousness of the process be tailored as needed and the measures selected for use in each FBA be based on the unique aspects of the case.

Conclusion

A state of the art model for conducting FBA with E/BD students in school settings is a work in progress. Since IDEA 1997, tremendous gains have been made with regard to informing practitioners about empirically based procedures applicable with this population. Despite the progress, there continues to be a need for further empirical studies, as well as a research to practice gap that must be addressed. Building a state of the art model of FBA and behavioral supports for students with E/BD requires educators and school personnel to balance the requirements of the law with what can be reasonably accomplished within the contexts in which they work. In order to bridge this gap, we suggest that the following areas need further empirical investigation: 1) increasing existing resources through prevention and tiered intervention efforts, 2)shifting the traditional focus on consequent-based interventions to include antecedent interventions, 3)providing training methods that are effective in preparing team members to different skill levels (many with basic skills, some with greater knowledge and a very few with expert level knowledge) to utilize a continuum of assessment options from indirect to direct to functional analysis as needed, 4)tailoring methodological rigor as needed to conduct FBAs that lead to informed decisions about function-based intervention, and 5)addressing the validity of various measures and expanding the use of technology to simplify data collection procedures. Establishing guidelines in using the FBA process and developing positive interventions within the context of individual schools and districts would help to close the research to practice gap and provide children and educators with information containing the most effective, evidence-based practices available.

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Abbreviated Upright Behavioral Relaxation Training for Test Anxiety Among College Students: Initial Results

Teresa Tatum, Duane A. Lundervold, and Patrick Ament

Abstract

Effect of abbreviated upright Behavioral Relaxation Training (BRT) on two self-report measures of test anxiety was examined using a quasi-experimental pre-post between groups (N = 20) research design with self-referred college students. At time 1 (T1) assessment, all participants completed the Abbreviated Test Anxiety Scale (ATAS) and were trained in the use of the Subjective Unit of Discomfort (SUD) rating scale. Participants recorded SUD ratings in vivo over a one-week period. Experimental group participants received two group sessions of upright BRT with instructions to practice BRT in vivo. Control group participants simply recorded SUD ratings during the intervention period. At time 2 (T2) assessment, all participants provided SUD rating data and completed the ATAS. Correlated t-tests indicated statistically significant differences in ATAS and SUD ratings in favor of abbreviated BRT. Robust effect, despite small sample size, provides further evidence for the effectiveness of BRT as an easy to learn, rapid relaxation training procedure for anxiety disorders. Application of abbreviated BRT in a group setting is a significant advance. Replication using a larger sample size with measurement of relaxed behavior and effect on academic performance is needed.

Keywords: Behavioral relaxation training, anxiety, controlled study.

Introduction

Within the scientific community there is broad agreement that test anxiety negatively affects academic performance (Zeidner, 1998) across the educational spectrum from primary to college levels (Hembee, 1988; Siepp, 1991). The conclusion, based on numerous meta-analyses, is that approximately two-thirds of low-test anxious students will score higher that the average high-test anxious student (Schwarzer, 1990). In a large sample of undergraduate students, Chapell, Blanding and Silverstein et al (2005) reported that high-test anxious college students score one-third letter grade lower (e.g., from a B+ to B). In addition, females consistently report higher test anxiety. Unfortunately, because test anxiety is not a DSM diagnosis (Diagnostic and Statistical Manual for Mental Disorders, 1997), little systematic research has been conducted to identify empirically valid measures and interventions for test anxiety.

Recently, test anxiety has been conceptualized as a type of performance anxiety (Powell, 2004a). Performance anxiety is most closely associated with social phobia; however, the characteristics of performance anxiety related to completion of tests or examinations are different and allow differential diagnosis. Relative to test anxiety: (a) the anxiety is debilitating, (b) though overall impairment is limited, (c) fear is restricted to specific performance situations, (d) self-established standards of performance are high, (e) fear of scrutiny is limited, (f) anticipatory anxiety is variable, and (g) the individual remains committed to performing the feared task (Powell, 2004a). Nonetheless, there is some likelihood that debilitating test anxiety may co-occur with other behavioral disorders such as specific phobia and general anxiety disorder. Precise data on this relationship remain elusive.

Despite lack of consensus regarding whether test anxiety is a subtype of performance anxiety or an anxiety disorder not other wise specified, a large number of students experience significant anxiety during test taking situations. Indeed, the ubiquity of test anxiety on college campuses has resulted in university counseling centers frequently offering services for test anxiety management. While traditional psychotherapy may still be used by some mental health counselors for test anxiety, at best, its effectiveness is extremely limited. The data are equivocal with respect to psychotherapy/counseling reducing anxiety; however, it is unequivocal in demonstrating that psychotherapy/counseling has no

effect on performance (Smith, Armkoff, & Wright, 1990). Furthermore, evidence-based research related to anxiety management indicates that behavioral and cognitive behavioral interventions have the strongest empirical support **(**Chambless, Baker, Baucom, et al., 1998**)**, with each decreasing anxiety and improving performance. Moreover relaxation training, typically using abbreviated progressive relaxation training (Bernstein & Borkovek, 1973) is a common component of either behavioral or cognitive behavioral mental health counseling intervention to decrease arousal. For example, Hudesman, Loveday and Woods (198 4) reported that systematic desensitization decreased anxiety and improved grade point average. Powell (2004) reported the effectiveness of a treatment package that included relaxation training, systematic desensitization, psychoeducation and study skills for medical students with test anxiety.

Behavioral Relaxation Training (BRT; Poppen, 1998) is a behavior analytically based procedure used for teaching 10 overt relaxed behaviors. Behavioral skill training (i.e., verbal instruction, modeling, prompting, reinforcement, shaping, and corrective feedback) is employed in acquisition and proficiency phases of training. Participants are taught 10 relaxed behaviors, each with an operational definition: head, eyes, throat, shoulders, hands, body, feet, breathing, mouth and quiet. Relaxed postures have been validated and shown to produce decreased electromyographic (EMG) activity (Poppen & Maurer, 1984). During proficiency training, participants are taught to covertly observe and discriminate interoceptive, proprioceptive, and kinesthetic stimuli produced by performance of overt relaxed behavior. For example, the client is instructed to "notice the sensations as you relax your hand in the curled, claw-like position on the arm of the chair." As in acquisition training, correct overt performance of the relaxed behavior is reinforced using descriptive praise. BRT has been used to manage tremor severity and anxiety of patients with essential tremor (ET) and Parkinson's disease (Lundervold & Poppen, 2004; Lundervold, Pahwa & Lyons, In press; Lundervold, Pahwa, & Lyons, 2006). Rashid and Parish (1998) conducted group BRT or abbreviated progressive relaxation training with high school students. Both relaxation training procedures reduced self-reported state anxiety. These authors concluded that "behavioral relaxation may actually be the more desirable of the two approaches, since it is less physically taxing in the sense that trainees do not have to tense and relax muscles routinely, as they do while they are engaging in progressive relaxation" (pp. 100).

Because of the increasing demand for accountability and evidence-based counseling outcomes (Sexton, 1999; Sexton Schofield, & Whiston, 1997; Sexton, Whiston, Bleuer, & Walk, 1997), mental health counselors must be employ counseling interventions with demonstrated effectiveness (Chambless, Baker, Baucom, et al.,1998; Wampold, Lichtenberg, & Waehler, 2002). BRT, implemented over six to eight sessions, has been shown to reduce anxiety and improve performance (Lundervold, In press; Poppen, 1998). In addition, the the relaxed behaviors are directly observable and measurable (Poppen, 1998) providing mental health counselors an opportunity to directly measure the process of behavior change functionally related to symptoms complaints. In doing so, further evidence-based care can be documented as well as identifying variables responsible for improvement in functioning. While encouraging, further research is needed to establish BRT as effective intervention for anxiety disorders. This research extends previous findings related to BRT and anxiety by examining the effect of abbreviated upright BRT on test anxiety of college-age students.

Method

Participants

Twenty (N= 10 per group), self-referred, undergraduate university students reporting test anxiety, took part. The majority of participants were Caucasian (66%) females students with the remaining sample comprised of African American females. Two African American participants were enrolled in the experimental condition and three enrolled in the control condition. Participants ranged in age from 18-40 years old. Participants volunteered to take part by enrolling in the research using an online research web

page and assigned to groups based on the session schedule posted. The research was conducted at a small Midwestern university as part of an undergraduate research course requirement.

Dependent variables

A 10-point Subjective Unit of Discomfort (SUD) rating (Wolpe, 1958), obtained in vivo, was used as an idiographic process measure of behavior change. Higher SUD ratings indicate greater subjective discomfort. A slightly revised version of the nine-item Abbreviated Math Anxiety Scale (Hopko, Mahadevan, Bare, & Hunt, 2003) was used as a generic outcome measure of test anxiety. Scores could range from 9-45 with higher scores indicating greater test anxiety. The original math anxiety scale has excellent reliability and validity.

Independent variable

Instruction in 10 upright relaxed behaviors was conducted using behavioral skills training (i.e., direct instruction, modeling, corrective feedback, manual guidance, shaping, descriptive praise) (Poppen, 1998; Speigler & Guevremont, 2003).

Research design and analysis

A pre-post between groups quasi-experimental design was used. Independent t-tests were used to assess differences on pre test ATAS scores followed by a comparison of post test ATAS and one randomly selected SUD rating. One SUD rating was selected due to the varying number of ratings recorded as a function of the frequency of quizzes/exams.

Procedure

A senior-level, female undergraduate student in psychology, with course work in Principles of behavior and Cognitive behavioral intervention, implemented procedures and collected all data. The initial session was conducted individually. After obtaining informed consent, assignment to BRT and control group occurred based on schedule availability. All participants completed a brief demographic questionnaire and the ATAS (Time 1). Participants assigned to the control condition received instructions to make SUD ratings before an exam or quiz while in the classroom.

Participants assigned to the BRT condition received the same instruction in addition to two 30-minute sessions of abbreviated upright BRT. Upright relaxed behaviors were taught in a group setting. Acquisition training of upright relaxed behavior was conducted during the first 30-minute period using behavioral skill training followed by behavioral rehearsal (Poppen, 1998). A short break then ensued. Proficiency training was conducted during the second 30-minute period. Participants were instructed engage in the upright relaxed behaviors. The trainer then instructed participants to notice "how it feels to relax your *(behavior)* in the *(relaxed position based on the operational definition)*" with contingent corrective feedback or descriptive praise provided. At time 2 (T2) assessment, conducted one week later, all participants again completed the ATAS and returned SUD ratings obtained over the past week.

Results

Frequency of SUD ratings ranged from one to four in the interim between T1 and T2. An independent t-test on BRT and control group pre-test mean ATAS scores was non significant ($p = > .10$). An independent t-test conducted comparing mean T2 ATAS scores and SUD ratings of the BRT and control group found a significant difference between groups (ATAS: $t(15)=1.38$, $p<.05$; SUD: $t(15)=.62$, $p<.05$). Mean ATAS for the BRT group was significantly lower (m =18, sd =3.65) than the for

the control group (m = 22.4, sd = 2.84). Mean SUD rating for the BRT group was also significantly lower (m = 4.4, sd = 2.37) compared to the control group (m = 6.7, sd =1.57).

Discussion

Test anxiety among college students is a prevalent maladaptive response that can have deleterious effects on emotional as well as academic performance. Upright abbreviated BRT was found to be effective reducing test anxiety using outcome (ATAS) and process measures (SUD rating). Results replicate and extend past research on BRT. Rashid and Parish (1998) reported the benefits of four sessions of upright BRT with high school students. Unfortunately, these students did not report test anxiety, but were merely recruited to take part in a relaxation study. Analog studies of this type have limited generality to actual clinical populations. Participants in our study reported a clinically meaningful degree of distress on two measures of test anxiety. Positive effects of BRT were obtained in two sessions. The brevity and effectiveness of BRT in a group setting are very encouraging for its use in managing test anxiety among college students. These results also replicate and extend the findings of Lundervold et al (In press) demonstrating that BRT is effective in reducing anxiety among neurologically and non-impaired individuals.

The brief period between T1 and T2 limits statements about the durability of upright abbreviated BRT for managing test anxiety. Furthermore, the modified ATAS, though based on a math anxiety questionnaire with excellent reliability and validity, has no demonstrated psychometric characteristics. It is possible that ATAS results are unreliable; however, between group SUD ratings, an idiographic measure of the process of behavior change, were significantly different. This finding supports ATAS results. Further research establishing the psychometric properties of the ATAS is needed. Replication of the effect of abbreviated upright BRT for test anxiety using larger samples, direct measure of relaxed behavior and assessment of academic change also is needed.

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Announcement

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The Teaching-Family Model and Post-Treatment Recidivism: A Critical Review of the Conventional Wisdom

David E. Kingsley

Abstract

Conventional wisdom suggests that the Teaching-Family Model (TFM) approach to treating youthful offenders is not effective in reducing post-treatment recidivism. This article reviews two major studies referenced in support of this widespread perception. Data presented in one widely referenced study are treated with a Cochran-Mantel-Haensel test, which, the author argues, is appropriate for data originally presented in two separate 2 X 2 tables (one for boys and one for girls). The construct and statistical conclusion validity of a major evaluation study presented to the NIMH is critically evaluated and discussed. A revised view of the leading TFM evaluations has implications for public policy regarding juvenile justice. The author suggests that a belief in the lack of post-treatment efficacy associated with community-based residential treatment has resulted in harsher treatment of juveniles and a higher incarceration rate.
Keywords: Teaching Family Model (TFM), Treatment, Juveniles, Recidivism

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Can youthful offenders be rehabilitated? In the United States during the past thirty years, this question has engendered ongoing debate and disagreement (Glaser, 1980; Lipton, Martinson & Wilks, 1975; Martinson, 1974; Palmer, 2002; Wilson & Herrnstein, 1985). However, a few decades ago, there was considerable optimism regarding the efficacy of treatment for juvenile delinquents. The Teaching-Family Model, in fact, grew out of a 1960s zeitgeist of all things are possible when it comes to reforming society (Wolf, Braukmann, & Ramp, 1987).

The theoretical underpinnings of the Teaching-Family Model (TFM) have been described as radical behaviorism (Morris & Braukmann, 1987). Delinquency, according to the theory, is the result of behavior deficiency rather than psychopathology (Phillips, Phillips, Fixsen, & Wolf, 1973). As applied to the treatment of adjudicated youth, the radical behaviorist approach is characterized by a "token economy system of reinforcement" (Phillips, et al., 1973, page 75). Youth in treatment receive points for compliance and achievement that can be exchanged for privileges. However, as the program developed in the early years, it became obvious that the teaching, social-interaction aspects of the treatment became "the heart of the program" (Phillips, et al., 1973, page 75).

The process of "give-and-take-instruction, demonstration, practice, feedback," (Phillips, 1973, page 75) is designed to help youth overcome behavior deficiencies and learn prosocial behaviors. Hence, the model is characterized by a small number of youths (eight) in a community-based residential setting managed by a married couple trained in the prescribed techniques (Phillips, Phillips, Fixsen, & Wolf, 1974). The Teaching Family Association developed as an accrediting agency. In general, fidelity to the model necessitates a highly structured program with specific protocols and continuous measures of each youth's behavior.

Early evaluations of the model by researchers responsible for its development at the University of Kansas suggested phenomenally better results of the TFM compared to institutionalization and probation (Phillips, et al., 1973; Kirigin, Wolf, Braukmann, Fixsen, & Phillips, 1979). However, since the early 1980s, it has been widely perceived as a model that lacks efficacy in reducing recidivism. (Fonagy, Target, Cottrell, Phillips, & Kurtz, 2002; Jones, Weinrott, & Howard, 1981; Kirigin, Braukmann,

Atwater, & Wolf, 1982; Morris & Braukmann, 1987; Quay, 1986; U. S. Department of Health and Human Services, 1999; Wilson, 1983; Wilson & Herrnstein, 1985).

According to Jenkins (2006), the backlash to the 60s spirit started around 1974. Indeed, in criminology the "nothing works movement" led by Martinson and his colleagues appeared on the scene with a publication in the *The Public Interest* (Martinson, 1974).

In spite of evaluations showing strong positive effects of the TFM compared to "no treatment" and "institutional" comparison programs reported in scholarly publications during the 1970s (Phillips, et al., 1973; Kirigin, et al., 1979), influential social scientists James Q. Wilson and Richard Herrnstein in their acclaimed book, *Crime & Human Nature* (1985) indicated that the Teaching Family Model served as evidence of the futility of rehabilitative efforts.[1]

It is ironic and unfortunate that Wilson and Herrnstein based their assessment of the TFM on two reported studies (Wilson & Herrnstein, 1985; Wilson, 1983), one of which was reported by Kirigin, et al. (1982) in the *Journal of Applied Behavioral Analysis*. The other study was an evaluation project pertaining to the TFM reported to the NIMH in 1981 (Jones, et al., 1981). Ironically, Kirigin and her colleagues were members of the core team at the University of Kansas responsible for developing and disseminating the model. The unfortunate aspect of the Kirigin, et al. article and Jones, et al. report (as submitted to the NIMH) is that administrators and scholars accepted them at face value.

Over the past two decades, the conclusions of these studies have been viewed as definitive answers to questions about TFM efficacy pertaining to the treatment of juvenile delinquents. (Fonagy, Target, Cottrell, Phillips, & Kurtz, 2002; Jones, Weinrott, & Howard, 1981; Kirigin, Braukmann, Atwater, & Wolf, 1982; Morris & Braukmann, 1987; Quay, 1986; U. S. Department of Health and Human Services, 1999); Wilson, 1983; Wilson & Herrnstein, 1985). Even a cursory analysis of validity issues in these studies should have given pause to statistically and methodologically sophisticated social scientists referencing them in support of a viewpoint.

This article will attempt to make a case for the importance of revisiting research responsible for the "nothing works" viewpoint in general and the conventional wisdom concerning TFM post-treatment effectiveness in particular. The belief that TFM is effective while youths are in treatment but is no more effective than "treatment as usual" after they leave is in fact the conventional wisdom.

Without doubt, this viewpoint has influenced the 1990s emphasis on a more punitive approach to juvenile delinquency. Predictions of a coming wave of super-predators (Dilulio, Walters, & Bennett, 1996; Wilson & Petersilia, 199) and a widespread belief that treatment for troubled youth is not effective were coincidental with increasingly harsh juvenile justice systems in practically all states (Zimring, 2005).

It will be demonstrated in the following pages that the current state of affairs concerning perceptions of treatment of adjudicated youth is based on faulty analyses and a host of fallacies and methodological errors. Primarily, but not exclusively, the remainder of this article will focus on statistical conclusion validity, and construct validity. However, as in any quantitative research, it is not difficult to uncover a

[1] Since the 1970s, Professor Wilson has been one of the most influential criminologists in the United States. As a professor at Harvard and president of the American Political Science Association, along with his role as trustee for powerful policy entities such as the American Enterprise Institute and Manhattan Institute, he has had considerable influence on criminal justice policies at the National level since the Reagan Administration. If anyone should doubt the respect accorded to Professor Wilson, they need only consider his status as a recipient of the Medal of Freedom awarded by President George W. Bush.

tangled web of issues pertaining to design sensitivity in which meaningful effects of a treatment are often overlooked.

Hence, sample size, effect size, measurement error, heterogeneity of subjects, experimental error, and statistical analyses, all of which are factors in the capacity of study to find meaningful effects when they are present, (Lipsey, 1990) have been to some degree or other integral in a misperception concerning the TFM.

Jones, Weinrott & Howard Evaluation

In 1981, Jones, Weinrott, and Howard reported the results of a national evaluation of the Teaching-Family Model to the National Institute of Mental Health. According to Jones, et al., their evaluation, funded by the NIMH, consumed six years – 1975 to 1981. Generally, the authors concluded that the Teaching-Family Programs impacted treated youths, " …at least as well as the state-of-the-art community-based comparison programs, were operating less expensively overall and most cost effectively in the school domain, and evaluated more highly by community consumers" (Jones, et al., page 2). These positive findings aside, the evaluators concluded that the, "…the chronic problem of delinquency continues to evade the efforts of even the better developed programs like the Teaching-Family Model" (Jones, et al., page 2).

Data from the Jones and colleagues (1981), study has been unavailable to this researcher for reanalysis.[2] Nevertheless, the study design is quite problematic and raises doubt about conclusions reported to the NIMH. As will be demonstrated in the next few paragraphs, construct validity of the independent variable, i.e., treatment program (with two levels – TFM and non-TFM) is questionable.

A fair and just evaluation of a treatment model that has achieved nation-wide dissemination must, it seems, include fidelity to the specifications established by its developers, as well as attention to the theoretical framework of treatment techniques (Glaser, 1980). The Teaching-Family Model is based on a set of clearly stated criteria: (1) A married couple with training and certification by the Teaching Family Association, (2) No more than 8 youths in an accredited home, (3) a system of self-governance by the clients, (4) a behavior modification system. The qualifications of staff are established through certification and training.

In a government funded, independent evaluation of a widespread program with comparison of the target model to "treatment as usual" and/or "no treatment" groups, an experimental or (quasi-experimental design), program type would constitute an independent variable with a specific number of levels. For instance, in the Jones and colleagues (1980) evaluation, the independent variable consisted of two levels: (1) TFM and (2) any other group homes available in the area of TFM homes included in the study.

In evaluating youth treatment, construct validity and fidelity to a prescribed model is basically the same thing. If the independent variable is not what it is defined as being, the intended construct is not actually the focus of measurement.

Although Jones, et al. stated that the evaluation was "…designed to compare 26 TFM home and 25 comparison homes … ," programs were not selected because they met particular criteria (in accordance

[2] In an effort to obtain the raw data from the evaluation project, this researcher contacted R. A. Jones, the principle investigator on the project. Dr. Jones indicated that he no longer had the data in his possession. It is possible that the data could be located within the archives of the NIMH. Efforts in that regard will be continued.

with a construct). Rather, teaching-parents were self-selected at three training sites across the United States (Jones, et al., page 40).

The report submitted by Jones, et al. to the NIH clearly indicates that many homes considered TFM in their evaluation did not fit within the prescribed framework:

"The ranges of youth per program in the two samples were 3 to 22 for TFM programs and 5 to 22 for comparison programs. Median numbers of youth per program were 13 (TFM) and 15 (comparison)." (Jones, et al., page 41)

It is troubling to this researcher that at least half of the TFM homes were considerably larger than the criteria for the model. The size of program (number of youth), length of operation (stability), and qualifications of staff most likely impacted within home variance. The evaluation project commenced in 1975 when the TFM was just hitting its stride. According to the evaluators, "No programs were added to the sample during the evaluation study but two were dropped when they ceased to operate" (Jones, et al., page 41). This researcher was somewhat stunned by the evaluators' admission that data obtained prior to the closure of the programs were, "…retained for analysis, and their youth were continued in the follow-up phase of the study" (Jones, et al., page 41).

Although the TFM was still in an incipient stage of development and dissemination in 1975, the study, in its entirety, focused on impact. The consequences have been summative with scant attention to formative factors.

Selection of homes larger than the model specified and inclusion of a large cadre of non-certified teaching-parents, along with construct validity, should have been considered by those later referencing the study. Furthermore, statistical conclusion validity should have been a concern. Analyses, as reported by Jones, et al., indicated that individual youths were entered as units of analysis without regard for within home variance.

Rather than treating "home" as a random effect, the authors of the study aggregated youth across all 26 TFM homes and 25 comparison homes. The report does not provide a list of homes with home-by-home characteristics such as the qualifications of staff, number of residents, and so forth. Other than two levels of the independent variable, i.e., TFM and non-TFM, no control was exercised for a variety of critical home factors.

Larger homes may have been less effective than homes with the prescribed number of youths. If this were indeed the case, the poor functioning programs would have been weighted more heavily in the analysis. This would hardly be fair to the Teaching Family Model.

Kirigin and colleagues (1982) discussed in depth later in this article), criticized the selection of homes in the Jones and colleagues evaluation. It was pointed out by Kirigin and her colleagues that of the three training sites from which teaching-parents were recruited, two were "… when the study began." (page 13). According to Kirigin, et al.(1982):

> "… one of the sites was never implemented adequately due primarily to insufficient staff. For example, for a significant portion of the study period, no one trained in the model was supervising the site." (page, 13)

All authors and researchers involved with the Kirigin, et al. 1982 article were associated with the University of Kansas department responsible for developing the TFM. It is apparent from the following

statement from the article that the University of Kansas researchers had taken issue with Jones and his colleagues:

"In the final report, Jones and his colleagues did not present the data analyzed by training site. However, earlier in their research efforts (at a time when approximately 80% of the subjects were in the study), Jones provided us with court-record offense data that were analyzable by site. The court data indicated as of that time, the homes from the Kansas site had during treatment levels of criminal offenses that were about half the levels of their comparison programs. (The pretreatment levels of offenses were comparable for these groups.) These during treatment data are consistent with the findings we have reported here and with those in our more recent self-report data on Kansas homes (page 14).

The Kansas researchers continued their criticism of the Jones, et al. study by reflecting on formative issues in initial attempts to replicate Achievement Place, the original Teaching-Family program. They stated "This failure to find that Teaching-Family programs were better (at least on court measures) than comparisons at these first two replication sites is reminiscent of initial difficulties in replicating the original Achievement Place group home program when we first began working with other group homes in Kansas" (page 14). In spite of their differences with Jones, et al., these researchers associated with the TFM also concluded from their analyses that the TFM homes they evaluated performed no better than group-home treatment as usual.

Kirgin, Braukmann, Atwater & Wolf, 1982

Kirigin, et al. in the 1982 article appearing in the *Journal of Applied Behavior Analysis* concluded that when youth in TFM programs were compared to youth in non-TFM residential programs, a significant "during-treatment" difference was present between the two groups. Nevertheless, the post-treatment differences were not, according the authors, significant for either boys or girls.

It is the opinion of this researcher that the conclusions of the authors were not supported by the data presented in the article. It would appear that weak statistical power and the validity of the analyses with which the data were treated rendered the findings of "no effect" questionable. Reanalysis of the data and statistical power analysis tends to suggest that in comparison to the non-TFM programs, TFM post-treatment effects were likely.

In the following discussion, the data reported by the authors will be presented, followed by an examination of the original analyses. The data and analyses will then be subjected to a power analysis. Finally, results of an analysis of the data with the Cochran-Mantel-Haensel technique will be presented.

The Data As Originally Presented:

The data presented in Figures 1 and 2 is a duplication of the format in which Kirigin et al. presented the data. Based on that presentation, this researcher created 2 X 2 tables for both boys and girls (Tables 1 and 2). A discussion of the data follows Table 2.

BOYS

Teaching-Family (n = 102)
Non-Teaching-Family (n = 22)

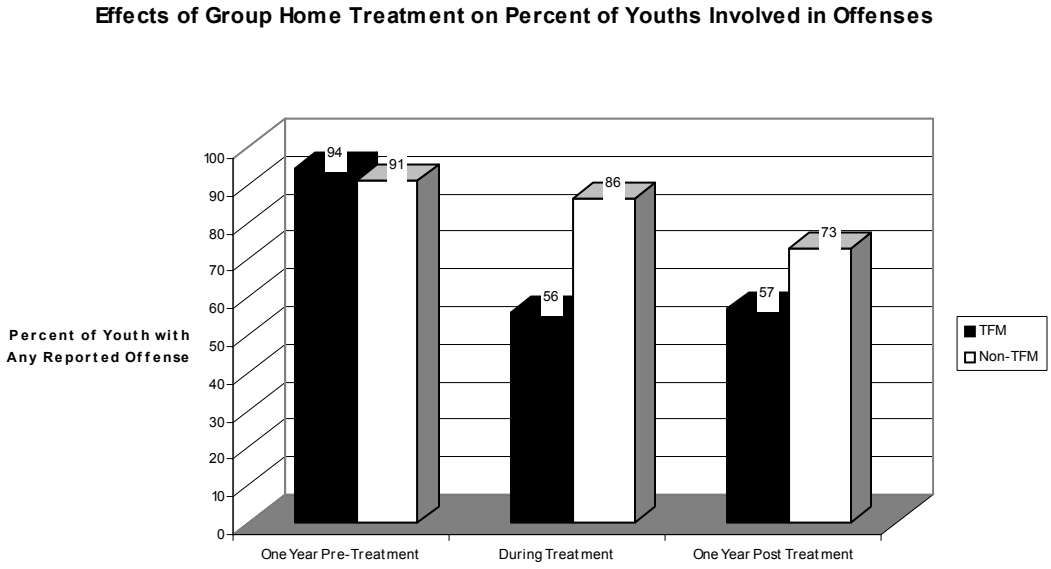

Figure 1

Table 1

Post-Treatment: Boys*			
	Teaching -Family	Non-Teaching-Family	
Involved in Offense	58	16	74
Not Involved in Offense	44	6	50
	102	22	124

*Of importance to analysis of the data in Table 1: $\chi^2 = 2.06$

$p = .15$

GIRLS

Teaching-Family (n = 38)
Non-Teaching-Family (n = 30)

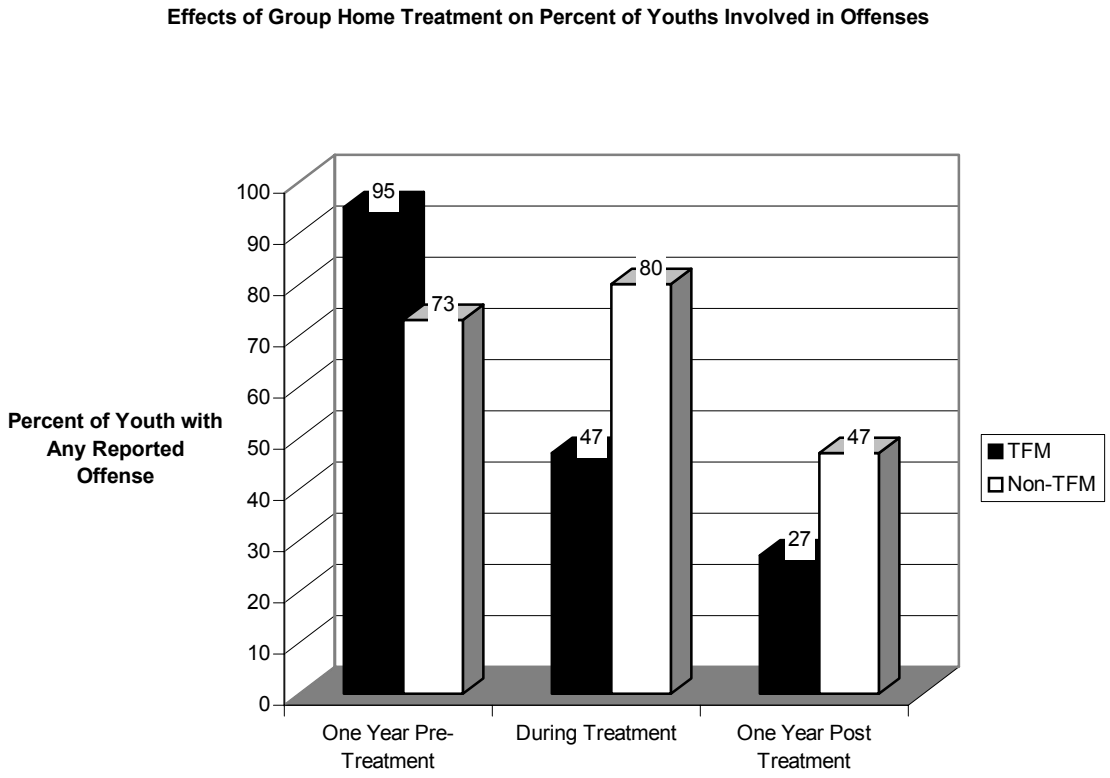

Figure 2

Table 2

Post-Treatment: Girls*			
	Teaching -Family	Non-Teaching-Family	
Involved in Offense	10	14	24
Not Involved in Offense	28	16	44
	38	30	68

*Of importance to analysis of the data in Table 2: $\chi^2 = 3.02$ $p = .08$

There are several interesting and important features of the data presented in Figure 1 and Tables 1 and 2:

The sample sizes for both groups are small – the female sample is particularly small.

Given the odds ratios (discussed below), sample sizes, and χ^2 values, the sensitivity of the research design has likely failed to detect an effect of the TFM treatment.

Given the factors in 2, combining boys and girls into a single analytic technique would reduce the risk of Type II error.

Each of these issues will be discussed below with alternative findings from a Cochran-Mantel-Haensel[i] test.

Sample Size and χ^2

Due to the influence of sample size, an omnibus χ^2 statistic is problematic. The χ^2 value is sensitive to increases or decreases in the cell counts. As Agresti (1996, page 33) states:

> "Chi-squared tests of independence, like any significance tests, have serious limitations. They simply indicate the degree of evidence for an association. They are rarely adequate for answering all questions we have about a data set. Rather than relying solely on results of these tests, one should study the nature of the association. It is sensible to decompose chi-squared into components, study residuals, and estimate parameters such as odds ratios that describe the strength of association."

The odds ratio is a rather good indicator of effect size. Based on the data in Table 1, the odds ratios for boys (using cross products of the cells or $m_{11} * m_{22} / m_{21} * m_{12}$) is:

$$\frac{58*6}{44*16} = .49$$

Hence the odds are .49 to 1 that TFM boys would be recidivists versus the comparison group. The inverse is 1/. 49 or slightly more than a 2 to 1 greater likelihood that comparison group boys would be recidivists versus the TFM boys. These odds ratios suggest a fairly strong effect size.

The odds ratio for TFM girls versus the comparison group is similar to the OR for boys:

$$\frac{10*16}{28*14} = .41$$

The odds ratio for girls indicates that TFM girls were approximately .4 to 1 as likely as comparison group girls to be involved in an offense post treatment. Conversely, comparison girls were 2.4 times as likely to be involved in an offense post treatment. All else being equal, these odds ratios suggest that TFM treatment had a more positive effect on youth in the study than the comparison programs.

Statistical Power

Given the sample size, odds ratios and proportions pertaining to post treatment offending, one would have to be wary of conclusions that treatment had no effect – especially when the alpha level was set at .05. The effect size for proportions can be determined by:

$ES_p = \phi_t - \phi_c$ where ϕ_t and ϕ_c refer to the arcsine transformation of the treatment group proportion and the comparison group proportion respectively (Lipsey, 1990, page 90).

The arcsine transformation of proportions is conducted as follows:

$\phi_t = 2\arcsin\left(\sqrt{p_t}\right)$ where $\sqrt{p_t}$ is the square root of the treatment proportion (offending post treatment).

$\phi_c = 2\arcsin\sqrt{p_c}$ where $\sqrt{p_c}$ is the square root of the comparison proportion (offending post treatment).

Of the TFM boys included in the study, a proportion of .57 (or 57%) had offended after treatment while a comparison group proportion of .73 had offended after treatment. Based on the arcsine transformation, ES_p is 1.711 – 2.049 = .34. Based on power charts presented in Lipsey (1998, page 91), a .05 alpha level set for a sample size of 120 and an effect size of .34 would yield statistical power of .76. An alpha of .10 would have increased power to .86 while an alpha of .15 would have resulted in power of .90.

Cohen (1988) has suggested that $1-\beta$ of .80 meets minimal standards. However, .90 would be desirable (and fair to treatments that are subjected to testing).

The design sensitivity of the comparison of TFM and comparison groups for females was even more problematic than was that for the boys. The ES_p for the difference in proportions for the female subjects is .42. An effect size of .40 calculated with a sample of 70 subjects – if tested at a .05 alpha level – would yield statistical power of .65. The probability of Type II error, in this case, is unsuitable for a determination that there was no post treatment effect.

Cochran-Mantel-Haensel Test

The statistical validity of the Kirigin, et al study would have been less questionable with some enhancement of statistical power. This could have been achieved through an increase in alpha or through a larger sample size. However, a more sensitive statistical test could have been employed. Given the 2 X 2 tables for boys and girls (with a chi square test utilized to examine independence separately for each table), a Cochran-Mantel-Haensel test would have been appropriate for combining the two studies. Data in two separate tables to which two separate chi-square tests are applied is a process fraught with problems.

The Cochran-Mantel-Haensel test is suitable for 2 X 2 X K tables with a null hypothesis that X and Y are conditionally independent, controlling for Z (Agresti, 1992). The null hypothesis that the conditional odds ratio θ between X and Y equals 1 in each table. The C-M-H is represented by:

$\frac{\left[\sum_k \left(n_{11k} - \mu_{11k}\right)\right]^2}{\sum_k Var\left(n_{11k}\right)}$ where μ_{11k} represents the mean of cell n_{11k} and $Var\left(n_{11K}\right)$ represents the variance for cell n_{11k}

The mean and variance of cell n_{11} along with marginal (row and column) totals in each 2 X 2 table constitute sufficient statistics for calculation of the C-M-H. The mean and variance of n_{11k} are:

$$\mu_{11k} = E_{n_{11k}} = \frac{n_{1+k} n_{+1k}}{n_{++K}}$$

where μ_{11k} and $E_{n_{11k}}$ represent the mean or the expected cell count for n_{11k} and n_{1+k} is the marginal cell count for column one while n_{+1k} is the marginal cell count for row one. n_{++k} is the total across all four cells (the grand total).

$$Var\left(n_{11k}\right) = \frac{n_{1+k} n_{2+k} n_{+1k} n_{2k}}{n_{++k}^2 \left(n_{++k} - 1\right)}$$

Table 3 displays the data presented in **Tables 1** and **2** plus odds ratios for both genders and mean and variances relevant to calculation of C-M-H.

Table 3

		Recidivism				
Gender	Group	Yes	No	Odds Ratio	μ_{11k}	$Var\left(n_{11k}\right)$
Male	TFM	58	44	.49	60.9	4.4
	Comp	16	6			
Female	TFM	10	28	.41	13.4	3.9
	Comp	14	16			

The C-M-H statistic for the data in **Table 3** is:

$\frac{\left[\left(58-61\right)+\left(10-13.4\right)\right]^2}{4.4+3.89} = \frac{40.96}{8.29} = 4.9$. Which has a large sample chi-square distribution with $df = 1$. The critical χ^2 is 3.841. Hence, the null hypothesis that there is no significant difference between the TFM model and comparison programs can be rejected. The p value for a C-M-H statistic of 4.9 is .027, which is considerable smaller than .05.

The appropriateness of the C-M-H might be questioned as just one means of "fishing" for a statistic that would yield a significant p value and justification for rejection of the null hypothesis. However, the original study was designed with control for gender as a major feature. Otherwise subjects, whether male or female, would have been combined into one crosstab without regard for gender.

Critical analysis of the Jones, et al. and the Kirigin, et al. evaluations indicates the validity problems in claims of "no post-treatment" effect of the TFM in comparison to the usual group home. Nevertheless, the perception of correct confirmation of the null hypothesis is widespread, i.e. there is no post-treatment effect difference between TFM and comparison group homes. The foregoing analysis strongly suggests that the TFM enterprise fell victim to Type II error in its early stages of dissemination.

The Surgeon General's 1999 report (U.S. Department of Health & Human Services, 1999) covered children with emotional disturbances in a chapter entitled "Children & Mental Health." The report recognized two major therapeutic group home models: (1) the teaching family model developed at the University of Kansas and then moved to Boys Town in Omaha, Nebraska, and (2) the Charley Model developed at the Menninger Clinic.

In referencing the Kirigin, et al. article, the Surgeon General's report concluded, "Existing research suggests that therapeutic group home programs produce positive gains in adolescents while they are in the home, but the limited research available reveals that these changes are seldom maintained after discharge" (U.S. Department of Health & Human Services, 1999, page 177). It is unfortunate that researchers responsible for that particular conclusion failed to critically evaluate analyses in studies on which they relied.

Summary and Implications

Critical analysis of past studies pertaining to post-treatment effectiveness, as presented in this article, illustrates the importance of reviewing reported evaluations that have been highly visible and influential in the public policy arena. When the measure of efficacy is recidivism, the Teaching-Family model, without scientific justification, came to be characterized as a program that adds nothing to "treatment as usual". Review of relevant research sheds doubt on this characterization.

All programs generated from basic research and disseminated with considerable support and funding from major U.S. administrative entities such as the NIMH, should be adequately evaluated. Program developers, the tax-paying public, and clients needing treatment deserve nothing less. One must wonder how many youth detained and confined in prison-like detention centers would have benefited from treatment in a well-operated Teaching-Family home. Lipsey's meta-analysis (1992) suggests that at least 300 of every 1000 adjudicated youthful offenders would have been less likely to reoffend in a TFM group home than in other group homes to which the model has been compared.

Along with Lipsey's meta-analysis, other evaluation research reported since the devastating 1980s evaluation reports has suggested meaningful post-treatment recidivism reduction effects of the Teaching-Family model (Friman, et al., 1992; Larzelere, et al., 2001; Larzelere, et al., 2004; Thompson, et al., 1996; Youngbauer, 1997). It is true that all of these researchers either are or have been associated with programs providing Teaching-Family model treatment.

Nevertheless, this research deserves as much attention, respect, and critical analysis as the Kirigin, et al. (1982) article and the Jones, et al. (1981) evaluation. It was, after all, the Kirigin, et al. (1982) article that was taken as a piece of strong evidence that the Teaching-Family Model lacked post-treatment

effectiveness. Reanalysis of data presented in the 1982 Kirigin, et al. article demonstrates how researchers can understandably make a mistake.

That article, along with other published works by the University of Kansas researchers (Morris & Braukmann, 1987; Wolf, et al., 1987) speaks to the integrity of the model's developers. They reported the results, as they believed them to be, even when they indicated a lack of post-treatment effectiveness.

The real problem here is not that researchers reached conclusions that could be questioned. The history of Teaching-Family-Model-related evaluations illustrates the way journal articles and evaluations reports can be uncritically and superficially referenced in acclaimed books, newsstand issues of major magazines, and even peer reviewed journals. That is the problem

All researchers/evaluators, including Kirigin, et al., Jones, et al., and most certainly this researcher, have reported research/evaluation with flaws and errors. Scientists make mistakes. That is the reason a scientific process should be characterized by doubt and collegial critique. Instead, social scientists along with the Surgeon General have taken early evaluations as summative.

The bigger question becomes: "Would the incarceration of two million Americans have been necessary if sufficient rehabilitation programs had been available?" If indeed treatment interventions with youthful offenders reduce recidivism and cause delinquents to veer from a trajectory toward adult prisons, then the value of rehabilitation will have been established. The necessity of incarcerating youth and adults may have been diminished with sufficient emphasis and resources directed toward community-based residential treatment along the lines of proven programs such as the Teaching-Family Model.

Unfortunately, influential academicians and bureaucrats treated initial evaluations as summative. More weight was accorded to TFM evaluations than they merited. All of the factors in design sensitivity so eloquently explained by Lipsey (1990) were generally ignored. Looking back over these studies, one finds the critical issues related to the sensitivity of a research design to detect a meaningful effect: effect size, sample size, subject heterogeneity, measurement error, experimental error, and statistical technique.

These oversights are not uncommon in the social sciences. Indeed, other than occasional references to Campbell & Cook (1979) and Campbell & Stanley (1963), attendance to statistical conclusion validity and other forms of validity problems are conspicuous by their absence. In addition to the TFM, efforts by the California Youth Authority and other programs have been victimized by early summative evaluations (Palmer, 2002).

However, the TFM has been the focus of this article, and the broader view that "nothing works" in the realm of rehabilitation of offenders is beyond its scope. Nevertheless, because prison populations continue to grow, this is a propitious time for reviewing evaluations across the entire spectrum of offender treatment.

Studies conducted by the Office of Juvenile Justice & Delinquency Prevention (OJJDP) indicate that conditions deleterious to the mental health of youth are widespread in detention centers (Parent, et al., 1994). Furthermore, minority youth have been disproportionately impacted by the trend for higher security institutionalization occurring in the past decade (Hsia, Bridges, & McHale, 2004). Shock incarceration and boot camps have proven ineffective in reducing recidivism (Lipsey, 1995, 1997, 1999; MacKenzie, & Hebert 1996; MacKenzie, Wilson, & Kider, 2001). Given the current nature of the juvenile justice system, a renewed consideration of community-based residential treatment is timely.

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The Treatment of Co-Occurring PTSD and Substance Use Disorders Using Trauma-Focused Exposure Therapy

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Abstract

Co-morbidity between posttraumatic stress disorder (PTSD) and substance use disorders (SUD) is high and there is a need for empirically validated treatments designed to address PTSD among SUD patients. One effective PTSD treatment that may be useful in treating PTSD-SUD is exposure therapy. This paper reviews the relationship between comorbid PTSD and SUD, the basics of exposure therapy for PTSD, and reviews preliminary work assessing the utility, safety, and tolerability of exposure therapy for PTSD-SUD. Although more research is needed, preliminary studies suggest that exposure therapy for PTSD-SUD is safe and tolerable and shows promise as an efficacious treatment.
Key Words: PTSD, Posttraumatic Stress disorder, Substance Use Disorder, Exposure Therapy, Comorbidity, Alcoholism, Drug Abuse.

Introduction

Substance abuse among individuals with co-occurring mental disorders has been a topic of concern with regards to prevalence, diagnostic considerations, treatment, and relapse. The presence of substance use disorders (SUDs) generally complicates treatment of both the SUD and the comorbid condition, and has been linked to poorer prognosis overall (Grant et al., 2004; O'Brien et al., 2004; Ouimette, Finney, & Moos, 1999). The present paper will focus on one of the most common comorbidities, the co-occurrence of posttraumatic stress disorder (PTSD) and SUDs. This paper will briefly describe the prevalence of PTSD-SUD comorbidity, potential mechanisms that may help explain the high comorbidity, and will present preliminary evidence to support the use of trauma-focused exposure therapy to treat co-occurring PTSD and SUD.

Prevalence

Chilcoat and Menard (2003) summarized the prevalence estimates of trauma exposure, PTSD, and comorbid SUDs from multiple epidemiological studies, including the most widely cited comorbidity studies, the Epidemiologic Catchment Area Study (ECA; Helzer, Robins, & McEvoy, 1987) and the National Comorbidity Study (NCS; Kessler, Sonnega, Bromet, Hughes, & Nelson, 1995). Lifetime prevalence for PTSD across the cross-sectional studies ranged from 1-7.8%. Comorbidity between PTSD and SUD was compared using odds ratios (ORs). ORs ranged from 1.56-8.8 dependent on SUD diagnosis type (across studies, alcohol dependence had lower ORs than other drug dependence diagnoses), indicating substantially increased odds of a SUD among those with a PTSD diagnosis versus those without (Chilcoat & Menard, 2003). This pattern was upheld when comparing SUDs in those with trauma exposure versus no exposure, but was somewhat attenuated in comparison to the PTSD statistics. Results from a large prospective study indicated a substantially increased risk (four times higher) of developing SUDs among those with PTSD versus those without the disorder (Chilcoat & Breslau, 1998).

In clinical samples, a large portion (11-60%) of individuals seeking treatment for SUDs meet diagnostic criteria for PTSD (Brady, 2001; Dansky et al., 1996; Grice, Brady, Dustan, Malcolm, & Kilpatrick, 1995; Jacobsen, Southwick, & Kosten, 2001; Najavits et al., 2003; Triffleman, Marmar, Delucchi, & Ronfeldt, 1995). As with epidemiological studies, methodological differences between studies can contribute to the variability of estimates (Chilcoat & Menard, 2003). Another possible explanation of the wide discrepancy between studies reporting rates of PTSD in SUD samples is the

PTSD symptom changes seen over time in this population. While it has been hypothesized based on clinical observations that PTSD symptoms may worsen during abstinence (e.g., Najavits, 2005), a recent empirical study provides evidence of the opposite (Coffey, Schumacher, Brady, & Dansky Cotton, in press). Individuals with a history of trauma and dependent on cocaine and alcohol were assessed over 28-days of monitored abstinence (n=162). Twenty-eight percent of the sample met current criteria for PTSD. PTSD symptoms declined during the 28-day assessment period irrespective of PTSD status or substance of abuse. These findings are consistent with evidence from other comorbidities (i.e., depression and anxiety; Brown & Schuckit, 1988), including the finding that the majority of symptom reduction occurred during the first two weeks of acute withdrawal. Thus, the time point of the assessment may affect differences in prevalence estimates of comorbidity. Re-assessment of PTSD symptoms may be necessary following an initial period of abstinence, as is the case with other disorders (Coffey, Schumacher, et al., in press; Kranzler & Rosenthal, 2003; Myrick & Brady, 2003).

Mechanisms of Action

The high co-occurrence of PTSD-SUD has become more important with the acknowledgement that either of these disorders left untreated will negatively impact the outcomes of the other disorder. This is true regardless of which disorder is left untreated (Stewart, Pihl, Conrod, & Dongier, 1998). Within the general comorbidity literature, the importance of integrated treatment is beginning to gain widespread acceptance (O'Brien et al., 2004). This pattern is seen within the PTSD-SUD area as well. Treatment programs addressing symptoms of both PTSD and SUDs have provided preliminary data demonstrating the ability to reduce symptoms in both disorders (see Brady, Back, & Coffey, 2004) and are becoming the standard of treatment for this population (Ouimette, Brown, & Najavits, 1998).

With robust support for the co-occurrence of PTSD and SUDs, research has turned toward investigating the mechanisms of action between the two disorders. Several hypotheses have been explored including control of arousal symptoms, anxiety sensitivity, and regulation of negative affect [see Conrad & Stewart, 2003 for a thorough review of experimental studies on the functional relationship between PTSD and SUD]. It is likely that several, or all, of these hypotheses are operating to some extent in the development and maintenance of the disorders.

Interestingly, existing models of drug use from the SUD literature have fit well in explaining use in the PTSD-SUD area. Particularly, the conditioning models (Siegel, 1983; Wikler, 1965) have been useful in addressing the negative affect associated with PTSD and how this contributes to drug use. These models view negative affect as conditioned stimuli (CSs) that are capable of eliciting conditioned responses (CRs; i.e., craving). As with any CS, this process develops over repeated exposures of the stimuli and the drug. Thus, repeated use of a drug in the presence of negative affect can lead to negative mood states eliciting craving for the drug. Cue reactivity studies have shown that cues reliably increase craving and physiological reactivity across drug types (Carter & Tiffany, 1999), and negative affect induction produces increases in craving independent of other cue manipulation (e.g., Coony, Litt, Morse, Bauer, & Gaupp, 1997; Payne, Schare, Levis, & Colletti, 1991).

Extensions of affect-based cue reactivity studies have been applied to PTSD-SUD samples. Manipulation of trauma-related negative emotion in individuals with comorbid PTSD-SUD increased substance cravings (Coffey et al., 2002; Saladin et al., 2003), suggesting that addressing trauma-related negative affect may be an important consideration when treating individuals with co-occurring PTSD and SUD. In the following section, treatment approaches will be described that may reduce trauma-related negative affect and improve outcomes for patients with co-occurring PTSD-SUD.

Exposure Therapy

One of the most effective treatments available for PTSD is prolonged exposure therapy (Foa & Rothbaum, 1998). This therapy is based on behavioral principles where the client is exposed to imaginal and/or in vivo cues related to the traumatic event in order for the client to habituate to the cues and thus reduce the fear response elicited by them. Imaginal exposure consists of the client describing the traumatic event in the first person, present tense perspective. The client is encouraged to include as many objective details as possible (sights, sounds, smells, etc.) as well as thoughts and feelings they experienced at the time of the trauma. The clinician helps to keep the client focused on the recall and the processing of trauma related thoughts and emotions. The clinician also assesses the client's level of distress by having the client make a rating on the Subjective Units of Distress Scale (SUDS), a rating of distress that ranges from 0 'no distress' to 100 'extreme distress.' The client is asked to repeat this exposure procedure multiple times during a therapy session. The therapy session is audio recorded and the client is encouraged to listen to the tape in-between sessions. Imaginal exposure is used to target the distressing memories and thoughts associated with the traumatic event.

In vivo exposure consists of the client confronting physical cues of the trauma that elicits trauma-related distress but that are objectively relatively safe (e.g., driving in a car for a motor vehicle accident victim, interacting with men in public for a female rape victim, etc). In session, the clinician helps the client develop a list of physical cues that elicit trauma-related responses. These physical cues can consist of people, objects, or places and should include cues that are typically avoided because of the potential for trauma related distress. The list of generated items are then ranked to form a hierarchy according to the level of distress the client experiences or expects to experience in the situation using the SUDS rating. The exposure exercises begin with items on the list that are rated about 40-50 on SUDS (i.e., moderately distressing). Clients are instructed to confront the feared stimulus and stay in the situation for about 45-50 minutes or until their distress level drops in half. Clients are encouraged to repeat the exposure multiple times over the week. When a particular exposure item consistently elicits low distress ratings, then the client begins the next highest rated item on the hierarchy. For a comprehensive description of imaginal and in vivo trauma-focused exposure therapy, the reader is referred to Foa and Rothbaum (1998).

The *Expert Consensus Guidelines for the Treatment of PTSD* (Foa, Davidson, & Frances, 1999) consider exposure therapy one of the most effective and rapid treatments for PTSD, particularly for PTSD characterized predominately by intrusive-type symptoms. Exposure-based treatments for PTSD have garnered considerable support in the empirical literature. Exposure therapy has been studied in the treatment of various trauma samples including rape victims (Foa et al., 2005; Foa, Rothbaum, Riggs, & Murdock, 1991), combat veterans (Keane, Fairbank, Caddell, & Zimering, 1989), motor vehicle accident survivors (Blanchard & Hickling, 2004), adult victims of childhood sexual abuse (Cloitre, Koenen, Cohen, & Han, 2002) and various crime related traumas (Marks, Lovell, Noshirvani, Livanou, & Thrasher, 1998; Tarrier et al., 1999).

Exposure Therapy for Comorbid PTSD and Substance Use Disorder

Despite the effectiveness of exposure therapy in treating PTSD, there has been hesitancy in the field to implement this form of therapy in treating clients with co-occurring PTSD and SUD. The major concern reflected in the literature has been that distress elicited by the exposure exercises would lead the client to relapse (Najavits, Weiss, Shaw, & Muenz, 1998; Triffleman, Carroll, & Kellogg, 1999). In laboratory studies, negative affect induced by trauma recall has been shown to increase craving for alcohol and cocaine among alcoholics and cocaine users respectively (Coffey et al., 2002; Saladin et al., 2003). This may give support to the argument that exposure therapy increases the chance for relapse, but it also points to the potential utility exposure therapy may have as a treatment in this population given its usefulness in reducing trauma-related negative affect over the course of treatment and at follow up (e.g.,

Foa et al., 2005; Foa et al., 1991). Furthermore, decreases in PTSD symptomatology have been associated with decreases in cocaine use and increases in PTSD symptomatology have been associated with increases in cocaine use (Back, Brady, Jaanimagi, & Jackson, 2006). In retrospective studies, the provision of PTSD treatment to PTSD-SUD comorbid veterans has been associated with improved SUD treatment outcomes at 5-year follow-up (Ouimette, Moos, & Finney, 2003). These findings suggest that PTSD symptom reduction is important in the treatment of co-occurring substance abuse. However, whether trauma-focused exposure therapy improves PTSD-SUD outcomes in prospective studies is an empirical question that needs to be answered. Within the past few years, researchers have begun to address this question by designing and testing combinations of exposure therapy with empirically validated SUD treatments.

Laboratory-Based Evidence to Support the Use of Exposure to Treat PTSD-SUD.

As stated previously, laboratory-based research has shown that negative affect increases substance craving (see Drummond, Tiffany, Glautier, & Remington, 1995) and trauma memory-elicited negative affect has been shown to increase SUD craving in substance dependent individuals with PTSD (Coffey et al., 2002; Saladin et al., 2003). To follow up on these findings, Coffey and colleagues tested the hypothesis that alcohol craving elicited by a trauma cue might be attenuated if trauma-elicited negative affect was reduced following trauma-focused imaginal exposure (Coffey, Stasiewicz, Hughes, & Brimo, in press). Alcohol dependent (AD) subjects with PTSD listened to a verbal description of their worst traumatic event combined with an in vivo cue (either an alcohol cue or a neutral cue). Alcohol craving, negative and positive emotion, and subjective distress ratings were collected following each image/in vivo cue presentation. Subsequent to this initial cue reactivity session, participants were randomly assigned to either 6 sessions of trauma-focused imaginal exposure or 6 sessions of imagery-based relaxation. Upon completion of the 6 sessions, subjects participated in a second laboratory session. Over the course of the clinical sessions, PTSD symptoms decreased significantly in the exposure condition but not in the relaxation condition. When comparing negative affect and alcohol craving ratings elicited by the trauma-alcohol cue during the two laboratory sessions, neither negative affect nor alcohol craving changed in the relaxation condition. However, both negative affect and alcohol craving decreased significantly from the first laboratory session to the second session in the trauma-focused exposure condition. These data suggest that exposure therapy may be useful in treating co-occurring PTSD-SUD.

Preliminary Clinical Trials Testing Exposure Therapy for PTSD-SUD

Concurrent Treatment of PTSD and Cocaine Dependence. Concurrent Treatment of PTSD and Cocaine Dependence (CTPCD), developed by Brady and Dansky (Back, Dansky, Carroll, Foa, & Brady, 2001; Brady, Dansky, Back, Foa, & Carroll, 2001), combines Coping Skills Training (CST), a cognitive-behavioral therapy for treating substance dependence (Carroll, 1998; Kadden et al., 1994; Monti, Abrams, Kadden, & Cooney, 1989) with exposure therapy for PTSD (Foa & Rothbaum, 1998). The treatment consists of 16, 90-minute sessions that occur twice a week on an individual basis. The substance use treatment consists of teaching coping skills, relapse prevention skills, and cognitive restructuring to help clients achieve abstinence from cocaine. During the first five sessions of treatment, substance use is the focus of therapy. Beginning with session six, however, exposure therapy begins and is presented during the first 45 minutes of each session. SUD treatment is provided during the second 45 minutes of the 90-minute session so that if substance craving increases in response to the exposure-elicited distress, SUD coping skills can be employed to reduce the craving response. In addition to the substance use and exposure treatment components, clients also learn relaxation skills (i.e., diaphragmatic breathing) and receive a general psychoeducational component that teaches clients the connection between their PTSD symptoms and substance use.

CTPCD has been tested in a small, uncontrolled study of 39 (32 females) patients seeking treatment for PTSD and cocaine dependence (Brady et al., 2001). In this study, patients were considered

to be treatment completers if they completed at least 10 of the 16 sessions, three of which needed to be exposure sessions. Of the 39 patients who started treatment, 15 completed treatment. For treatment completers, both PTSD and drug use were significantly reduced from pre- to post treatment, as well as at 6-month follow-up. PTSD symptoms of intrusion, avoidance, and hyperarousal, as measured by the Clinician Administered PTSD Scale (CAPS; Blake et al., 1995), were significantly reduced as were total scores on the CAPS, Mississippi Scale for PTSD (MISS; Keane, Caddell, & Taylor, 1988), and Beck Depression Inventory (BDI; Beck, Ward, Mendelson, Mock, & Erbaugh, 1961). Significant reductions on the drug, alcohol and psychiatric subscales of the Addiction Severity Index (ASI; McLellan et al., 1992) were found pre- to post-treatment and the significant reductions on the drug and alcohol subscales persisted at the 6-month follow-up.

Importantly, Brady et al (2001) note that the number of non-completers is comparable to that of other drug-treatment studies. Additionally, 75% of non-completers dropped out prior to the start of the exposure sessions suggesting that exposure was not the precipitating cause of treatment termination. This position is supported by data from Coffey, Stasiewicz et al. (in press) who found that while subject retention was poor overall, retention did not differ as a function of experimental condition (i.e., 6 session of trauma-focused exposure therapy versus 6 sessions of relaxation training). Despite the small sample in Brady et al. and the lack of a control condition, this study provides preliminary support for CTPCD and the use of exposure therapy in treating comorbid PTSD and SUD patients.

Substance Dependence PTSD Therapy. Another treatment designed to address co-morbid PTSD and SUDS that incorporates an exposure therapy component is Substance Dependence PTSD Therapy (Triffleman et al., 1999). SDPT is a 20-week treatment that incorporates similar elements of CST as CTPCD to address substance use and employs both Stress Inoculation Training (Foa et al., 1991; Meichenbaum & Cameron, 1983) and in vivo exposure to address PTSD symptoms. The treatment is divided into two phases. The first phase focuses on skills training and the initiation of abstinence and lasts for about 12 weeks. Skills training focuses on topics related to the patients' substance use and PTSD symptoms (i.e. anger management, relaxation training, handling craving and drug triggers, and HIV Risk behaviors). The interaction between substance use and PTSD is emphasized. Transition from phase one to phase two occurs when the patient maintains significantly reduced substance use or abstinence and has adequately learned coping skills, both of which are ascertained via clinical judgment.

The second phase of SDPT directly addresses the PTSD symptoms and lasts about eight weeks. This phase is broken into "Anti-Avoidance I" and "Anti-Avoidance II" components. The Anti-Avoidance I component incorporates SIT to teach the patients skills for approaching and confronting fear situations and dealing with any resultant negative affect. The Anti-Avoidance II component involves in vivo exposure to feared situations in a graduated hierarchical approach. Unlike regular in vivo exposure for PTSD, SDPT has patients leave an exposure situation if intense, negative affect is experienced. If intense, negative affect is experienced, the patient is asked to re-rank the situation and to retry the exposure with a more gradual approach at a later point in time.

SDPT has been tested in a small (n= 19, 10 female) controlled clinical pilot study (Triffleman, 2000). A Twelve Step Facilitation (TSF) group was used as a control treatment condition. This control treatment utilized Twelve Step concepts to address issues related to substance dependence while explicitly not addressing PTSD symptoms. At one-month follow-up patients in both groups showed a reduction in PTSD symptomatology as measured by the CAPS and a reduction in substance use related problems as measured by the ASI drug composite score. The author points out that the small sample size limits the statistical comparisons of differences between groups and that a larger clinical trial is currently being conducted. The author also states that SDPT and TSF may share common elements that lead to the improvement of PTSD symptoms and substance dependence. Moreover, it is important to point out that

patients in the SDPT group were able to tolerate the exposure exercises and that their reduction in drug use was similar to that of the TSF group.

Seeking Safety Plus Exposure. With the initial success of CTPCD and SDPT in using exposure therapy to treat PTSD in SUD patients, Najavits and colleagues (Najavits, Schmitz, Gotthardt, & Weiss, 2005) tested the addition of an exposure component to their Seeking Safety treatment. Seeking Safety (Najavits et al., 1998) is a treatment for patients with co-occurring PTSD and SUD which consists of 25 coping skill oriented topics. The topics are categorized into cognitive, behavioral, and interpersonal content areas and are designed to teach a coping skill related to both PTSD and SUD such as anger management and relationship boundary setting. The aim of Seeking Safety is for patients to achieve abstinence from substance use and reduce PTSD symptoms in the context of developing a safe environment.

The added exposure component is a revised version of Foa and Rothbaum's (1998) exposure therapy for PTSD. The revisions are aimed at making exposure therapy more acceptable and appropriate for use within a substance using population. These modifications were based on clinical experience rather than empirical data since no data exists, to date, to suggest that modifications of exposure therapy are necessary for PTSD-SUD patients. Examples of the modifications include that patients are allowed to process multiple traumas during a single exposure session as opposed to the repeated processing of a single traumatic event as recommended by Foa and Rothbaum. Also, patients are encouraged to process both trauma and painful substance use related memories. Additionally, the patients are required to have a written safety contract made with the therapist outlining safety precautions such as therapist availability by pager, scheduled voice-mail check-ins, emergency procedures, and agreement on how substance use will be handled. Patients are only required to complete one informational session on exposure therapy and the inclusion of additional exposure sessions is decided by the patient and therapist together.

In a small uncontrolled pilot study (n = 5) of men with PTSD and SUD, Najavits and colleagues (Najavits et al., 2005) assessed the inclusion of exposure therapy with the Seeking Safety treatment. All five participants attended 30 sessions, with a mean of 21 Seeking Safety sessions and 8.8 exposure sessions. Improvement was found for both PTSD symptoms and substance use. Total scores on the Trauma Checklist-40 (Elliott & Briere, 1992), a measure of PTSD related symptoms, significantly decreased pre- to post-treatment with specific decreases on subscales related to anxiety, dissociation, and sexual abuse trauma. The drug use and the family/social functioning composite scores on the Addiction Severity Index were significantly reduced pre- to post-treatment indicating improvement in SUD symptoms. Patient satisfaction data was also collected and indicated that patients found the exposure sessions to be very helpful and that they would recommend the exposure component to others. These satisfaction findings are interesting given that prior to treatment the patients rated the appeal and willingness to engage in exposure much lower than the Seeking Safety component alone. The findings of this small study highlight the potential exposure therapy holds for the treatment of comorbid PTSD and SUD and also highlight the acceptability and tolerability of exposure treatment by patients with SUD. For a description of an integrated exposure-based PTSD-SUD treatment program in a large inner-city community mental health center, (see Coffey, Schumacher, Brimo, & Brady, 2005).

Summary and Future Directions

Exposure therapy is a validated, effective treatment for PTSD. However, the use of exposure therapy to treat comorbid PTSD-SUD has been subject to debate in the literature, particularly because of concerns about safety and tolerability of this treatment. The initial treatment and laboratory studies described above suggest that exposure therapy, presented in various forms, can safely be used in this population and show the potential of exposure therapy to effectively reduce both PTSD and SUD symptomatology. Additionally, the outcome of these studies suggest that exposure therapy is more

tolerable to patients in this population than initially believed, as evidenced by treatment retention rates that are similar to treatment for SUD alone and participants' positive ratings of the exposure therapy itself.

It is important to note that exposure therapy is but one of a few cognitive behavioral therapies that have demonstrated clear effectiveness in treating PTSD without a co-occurring SUD. As stated above, the *Expert Consensus Guidelines for the Treatment of PTSD* (Foa et al., 1999) recommends trauma-focused exposure therapy as a first-line treatment for PTSD but it also recommends cognitive therapy (e.g., Resick & Schnicke, 1996) as a first-line treatment. Future studies should continue to test the effectiveness of exposure therapy in treating PTSD-SUD, especially in randomized controlled trials. However, researchers and clinicians, rather than attempting to develop novel PTSD treatments for PTSD-SUD, should instead make use of existing and effective treatments from the PTSD literature (e.g., Cognitive Processing Therapy developed by Resick & Schnicke, 1996) when designing new PTSD-SUD treatment approaches. By building on the existing PTSD literature, effective treatments for PTSD-SUD will be developed more quickly and more choices of efficacious treatments will be available to clinicians and their patients.

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The Health Behavior Schedule-II for Diabetes Predicts Self-Monitoring of Blood Glucose

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Abstract

The Health Behavior Schedule-II for Diabetes (HBS-IID) is a 27-item questionnaire that was evaluated as a predictor of self-monitoring of blood glucose (SMBG). The HBS-IID was completed by 96 adults with Type 2 diabetes. Recent glycosylated hemoglobin HbA1c and fasting blood glucose results were taken from participants' medical records. Only 31.3% reported to be "very successful" in complying with prescribed SMBG. Seventy-one percent of the variance in compliance to SMBG was predicted by four HBS-IID items designed to measure general self-care skills, having promised someone to do so, self-reinforcement for doing so, and not finding it punishing. Each of the HBS-IID predictors has implications for compliance enhancement strategies.
Key Words: compliance, self-monitoring blood glucose (SMBG), Health Behavior Schedule-II for Diabetes (HBS-IID), Basic Behavioral Repertoires (BBRs), facilitating conditions/discriminative stimuli (FC/SD)

Introduction

Self-monitoring of blood glucose (SMBG) is a standard component of self-care for adults with Type 2 diabetes (Winter, 2004). However, compliance estimates are only 5% to 44% (Kennedy, 2001) with lowest rates reported by patients who are not using medication (Harris, 2001). These compliance rates are lower than the 40% to 70% estimates for self-management of many other chronic illness regimens (Christensen, 2004), indicating that SMBG is particularly difficult to acquire.

SMBG provides information that is expected to prompt changes in food consumption, exercise, and medication timing and dosage (Bjorsness, Krezowski, Harwell, McDowall, Butcher, Helgerson, & Gohdes, 2003). In some studies, SMBG has been associated with better glycemic control while in other studies it has not (Harris, 2001). The mixed findings may be due to failure to use the SMBG information to change self-care and because SMBG is only one component of an effective diabetes treatment regimen, while other components may include medication, diet, and exercise (foot care would not be expected to effect glycemic control). For example, one study found only a third of people with Type 2 diabetes comply with taking medication as prescribed, which in and of itself affects glycemic control (Donnan, MacDonald, & Moris, 2002). The purpose of our study was to assess environmental and behavioral competency variables that may indicate which evidence-based treatments may enhance compliance to SMBG.

The low compliance rate for SMBG is not surprising from consideration of the nature of the consequences involved. SMBG generally does not involve external positive reinforcement except possibly in the form of engineered contingent praise. The test results indicating one has obtained a targeted level of glycemic control could function as reinforcement if such information is understood by and pleasing to the individual. The test results, however, could function as punishment for SMBG if they suggest an unhealthy consequence of one's preferred diet, exercise, and medication usage. Moreover, the SMBG procedure involves cutting oneself with a lancet in order to obtain a blood sample, which for some people could constitute punishment for compliance. Therefore, the determinants SMBG as part of the

self-control skills involved in diabetes self-care are likely to include situational factors and behavior repertoires that compensate for less than optimal inherent consequences.

This study was guided by the Health Compliance Model-II (HCM-II; Heiby & Frank, 2003; Heiby & Lukens, 2006; Heiby, Lukens, & Frank, 2005) to identify potential situational and behavioral causal variables for SMBG. The HCM-II was developed in accordance with a psychological behaviorism framework (Staats, 1996). The HCM-II includes facilitating conditions/discriminative stimuli (FC/SD), consequences, organic conditions, and four somewhat overlapping basic behavioral repertoires (BBRs) that determine compliance to health related activities. The four BBRs are sensory-motor, language-cognitive, emotional-motivational, and verbal-emotional. The latter two BBRs involving emotional responses are deemed critical for self-control of all health related activities because they elicit affect, direct approach and avoidance, and determine what constitutes reinforcement and punishment for an individual.

The HCM-II led to the development of a questionnaire, the Health Behavior Schedule-II (HBS-II), which has accounted for 38% to 65% of the variance in compliance to 12 commonly recommended health-related behaviors (i.e., breast self-exam, pelvic exam, not smoking, wearing a bike helmet, sun protection, use of seat belt, moderate alcohol consumption, safe-sex, regular exercise, and low fat high fiber diet) Frank, Heiby, & Lee, in press). Similar results were found with a German language version of the HBS-II (Lukens, Heiby, & Barkhoff, 2005). Compliance on the HBS-II is measured by retrospective self-report, which has external validity support using daily self-monitoring as the criterion (Lukens, Heiby, & Barkhoff, 2006). Each variable measured on the HBS-II is subject to manipulation by an evidence-based treatment and amenable to assessment by retrospective self-report. Thus, not all variables posited in the HCM-II are assessed on the HBS-II. As examples, the assessment of organic factors would require medical tests and assessment of reinforcement contingencies would require direct observation.

The present study evaluated the ability of an adapted version of the questionnaire, the Health Behavior Schedule-II for Diabetes (HBS-IID) to predict SMBG among outpatient adults diagnosed with Type 2 diabetes. The HBS-IID assesses some FC/DS and aspects of the four BBRs.

Figure 1. **Health Behavior Schedule-II for Diabetes**

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1. What is your gender? **M F**

2. What year were you born? _____

3. Do you have Type- 2 (adult-onset) diabetes? **Yes No**

4. Do you use a machine (e.g., Accucheck®) to check your glucose levels? **Yes No** If no, please stop here

5. How often are you supposed to check your glucose levels? ____**times a day** ____**times per month**

6. How successful have you been at making this a habit? (e.g., checking your glucose levels regularly) not at all successful **1 2 3 4** very Successful

7. Compared to other people, I'm pretty good at taking care of myself not at all **1 2 3 4** very much

8. When it comes to checking my blood sugar, I get support from other people **1 2 3 4**

9. Getting to the doctor's office is inconvenient not at all **1 2 3 4** very much

10. Checking my blood sugar causes discomfort		**1**	**2**	**3**	**4**	
11. It is my goal to check my blood sugar levels at home	not at all	**1**	**2**	**3**	**4**	very much
12. I lead an active lifestyle (i.e., I'm engaged in many daily activities)		**1**	**2**	**3**	**4**	
13. I understand why home glucose monitoring is important to my health	not at all	**1**	**2**	**3**	**4**	very much
14. I have promised someone that I'll take good care of my diabetes		**1**	**2**	**3**	**4**	
15. Of all things important to me, my health is most important	not at all	**1**	**2**	**3**	**4**	very much
16. I am able to follow my doctor's instructions for home glucose monitoring		**1**	**2**	**3**	**4**	
17. Home glucose monitoring is inconvenient	not at all	**1**	**2**	**3**	**4**	very much
18. Without home glucose monitoring, my health would be at serious risk		**1**	**2**	**3**	**4**	
19. It makes me feel good to keep close track of my blood sugar	not at all	**1**	**2**	**3**	**4**	very much
20. I intend to monitor my own blood sugar levels at home		**1**	**2**	**3**	**4**	
21. I get nervous before receiving any new information about my health	not at all	**1**	**2**	**3**	**4**	very much
22. My doctor told me to monitor and record my blood sugar levels at home		**1**	**2**	**3**	**4**	
23. I am good at reminding myself to stay on track with daily responsibilities	not at all	**1**	**2**	**3**	**4**	very much
24. If something were terribly wrong with my health, I'd rather not know		**1**	**2**	**3**	**4**	
25. I am motivated to keep my diabetes in excellent control	not at all	**1**	**2**	**3**	**4**	very much
26. If I skipped doing one of my blood sugar checks, I'd feel bad about it later		**1**	**2**	**3**	**4**	
27. Home glucose monitoring is boring	not at all	**1**	**2**	**3**	**4**	very much

Method

Subjects

Participants were 96 adults with Type 2 diabetes who were attending an outpatient medical clinic located in the City and County of Honolulu, Hawaii USA. The distribution of sex of the participants was 44% (n = 42) male and 56% (n = 54) female. The mean age was 60 (SD = 10) years. Participants were prescribed to SMBG on average 10.30 (SD = 5.91) times per week. All participants reported owning a SMBG portable device.

Materials

The Health Behavior Schedule-II for Diabetes (HBS-II-D; see Table 1) is a 27 item self-report questionnaire including 5 demographics, 21 predictors, and one rating of compliance to SMBG as prescribed. Items 1 through 5 measure demographics. Item 6 measures degree of compliance to prescribed SMBG.

Table 1.
Stepwise Regression Analyses with Compliance as the Outcome

	Step	R^2	Change in R^2	*P*	Beta
1	Self-care (Item 7)	.533	.533	<.001	.350
2	Promise (Item 14)	.622	.089	<.001	.286
3	Self-reinforce (Item 19)	.680	.058	<.001	.249
4	Punishing (Item 10)	.708	.028	.004	-.196

***Note*: F for all models $p < .001$; Item 7 is sensory-motor; Item 14 is facilitating condition/discriminative stimulus; Item 19 is verbal-emotional; Item 10 is emotional- motivational**

Items 7 through 27 measure FC/SD and BBRs that have been shown to predict other health-related habits on the HBS-II (Frank et al., in press). The variables assessed by these 21 items are as follows: general self care skills (item 7), social support for SMBG (item 8), ease of access to physician's office (item 9), discomfort from or punishing aspects of SMBG (item 10), having the goal to SMBG (item 11), activity level and time management skills (item 12), understanding the reasons for SMBG (item 13), expectations and presumably prompts from having promised someone to follow the diabetes self-care regimen (item 14), relative importance of health to the individual (item 15), self-efficacy or perceived ability to SMBG (item 16), inconvenience related to SMBG (item 17), perceived severity of health consequences for failing to SMBG (item 18), self-reinforcement for SMBG (item 19), intention to SMBG (item 20), anxiety elicited by health status information (item 21), being instructed to SMBG (item 22), use of prompts and reminders for daily activities (item 23), avoidance of negative health related information (item 24), motivation to comply to the diabetes self-care regimen (item 25), self-punishment for failure to SMBG (item 26), and whether SMBG is perceived to be boring (item 27).

FC/SD are measured by items 8, 9, 14, and 22. The language-cognitive basic behavioral repertoire is measured by items 13 and 20. The emotional-motivational repertoire is measured by items 10, 15, 17, 21, 24, 25, and 27. The verbal-emotional repertoire is measured by items 11, 16, 18, 19, and 26. The sensory-motor repertoire is measured by items 7, 12 and 23.

Clinic medical records provided the results of the most recent blood test indicators of glycemic control in terms of glycosylated haemoglobin HbA1c and fasting blood glucose.

Procedure

While in a medical clinic waiting room, participants completed a consent form (two copies) and the HBS-IID, which took approximately five minutes. Patients were instructed to keep one copy of the consent form and give the other copy and the HBS-IID to clinic staff. Results of two blood test indicators of glycaemic control were obtained from medical records by clinic staff and noted at the bottom of the completed HBS-IID. The remaining consent form was then detached from the questionnaire and filed separately in order to maintain anonymity of HBS-IID responses and blood test results. This procedure was approved by the University of Hawaii's institutional review board.

Results

The internal consistency reliability estimate for 20 of the 21 predictors (items 7 through 27) on the HBS-IID was .80 after removing item 24, which had a nonsignificant correlation with the total score.

Construct validity of the HBS-IID was supported by significant correlations in the expected direction between compliance to prescribed SMBG (item 6) and all but two HBS-IID predictors (items 22 and 24). Significant correlations ranged from .73 ($p < .001$) to -.57 ($p < .001$).

Criterion validity for item 6 was supported by significant negative correlations between degree of compliance to SMBG and both HbA1c (R = -. 27; p < .01) and fasting blood glucose (R = -.46; p < .001) results.

Rates of compliance to SMBG as prescribed (item 6) were 31.3% (n = 30) *very successful*, 24% (n = 23) *somewhat successful*, 21.9% (n = 21) *rarely successful*, and 22.9% (n = 22) *not at all successful.* The mean score on a four-point scale was 2.64 (SD = 1.15) with 4 indicating *very successful*. The correlation between rate of compliance and the number of times per week SMBG was prescribed (item 5) was not significant.

HbA1c and fasting blood glucose indicators were normal for 15.6% (n = 15) and 13.5% (n = 13) respectively. An HbA1c assay of less than 7% was deemed normal (UKPDS, 1998) while a fasting blood glucose of 64 through 110 mg per deciliter (Tirosh, Shai, Tekes-Manva, Isreli, Pereg, Shochat, Kochba, & Rudich, 2005) was deemed normal.

As reported in Table 1, a stepwise multiple regression (with item 24 omitted) indicated that four of the remaining 20 HBS-IID predictor items significantly accounted for 71% of the variance of compliance to prescribed SMBG (item 6). The predictor items were designed to measure (in descending order of variance accounted for) general self-care skills (item 7), having promised someone to perform SMBG (item 14), self-reinforcement for SMBG (item 19), and finding that SMBG is not punishing in terms of causing discomfort (item 10).

Two additional stepwise multiple regressions were conducted to ascertain if the 20 reliable HBS-IID predictor items could account for significant variance in glycaemic control. Finding that SMBG is not punishing in terms of causing discomfort (item 10) accounted for 19.8% of the variance of HbA1c results (F = 15.21, d.f. = 94, p = .000). Use of prompts and reminders for daily activities (item 23) accounted for 13.7% of fasting blood glucose indicators (F = 14.81, d.f. = 94, p = .000).

Discussion

The results support the internal consistency reliability and construct validity of the HBS-IID, excluding item 24. The HCM-II's prediction that emotion-eliciting variables are critical to compliance to SMBG was also supported in terms of items 10 (emotional-motivational punishing aspects of SMBG) and 19 (verbal-emotional self-administered reinforcement for SMBG).

The four HBS-IID variables that significantly accounted for SMBG may be modifiable by evidence-based psychological treatments (Heiby & Frank, 2003; Heiby & Lukens, 2006; O'Donohue, Fisher, & Hayes, 2003) that might enhance compliance to prescribed SMBG. Given that only 31.3% of the respondents reported being very successful with this self-control skill involved in diabetes management, the need for behavioral health counseling designed to enhance compliance is clearly indicated. The HBS-IID may help to identify "at risk" individuals who are most in need of compliance-enhancing interventions. Because the rate of compliance was not found to be significantly related to the frequency of prescribed SMBG, these risk factors may be relevant to a range of diabetes patients. However, rate of compliance was measured by a global retrospective self-report item that, while convenient and inexpensive, may result in over-reporting due to factors such as demand characteristics and faulty memory (Fernandez-Ballesteros, 2004; Levensky & O'Donohue, 2006; Stone, Turkkan, Bachrach, Jobe, Kurtzman, & Cain, 2000). Retrospective self-report also fails to identify temporal patterns of compliance (Riekert, 2006) that could be related to frequency of prescribed SMBG.

The HBS-IID predictor item 7 was designed to measure general self-care skills (including behavioral change prompted by SMBG results). These primarily sensory-motor skills may be improved with modeling, behavior rehearsal, and shaping procedures. Item 14 was designed to measure having someone who expects the patient to comply with SMBG and possibly provides an environmental prompt to do so. This FC/SD may be modified by behavioral engineering of the patient's social support network so prompts are provided at an optimal rate. Use of social support in maintaining diabetes self-care has been referred to as an ecological approach to diabetes management (Fisher, Brownson, O'Toole, Anwuri, Shetty, & Rubin, 2006). Item 19 was designed to measure self-reinforcement for SMBG. This verbal-emotional skill may be learned with self-control or self-management training. Finally, item 10 was designed to measure the emotional-motivational characteristic of finding SMBG to not be punishing. Decreasing the aversive aspect of SMBG may be accomplished by desensitization and emotion regulation skills training. This finding is consistent with studies using the Problem Areas in Diabetes scale that indicate managing the distress associated with self-care contributes to compliance (Polonsky, Fisher, Earles, Dudl, Lees, Mullian, & Jackson, 2005; Welch & Guthrie, 2002).

It is noteworthy that the two language-cognitive variables assessed on the HBS-IID (understanding the purpose of and having the intention to engage in SMBG) were not predictive of compliance in the present study. These results suggest that educational programming for enhancement of compliance to SMBG may not be targeting the essential skills and situational factors needed to acquire this habit. For example, explaining the purpose of SMBG may need to also include training in problem-solving skills (Oser, 2006) regarding changes in eating, exercise, and medication indicated by blood glucose levels.

It is also noteworthy that the verbal-emotional variable of self-efficacy did not significantly account for variance in SMBG. In contrast, self-efficacy did significantly account for variance in compliance to all of the 12 health related practices studied using the English and German language versions of the HBS-II (Frank et al., in press; Lukens et al., 2005). This finding suggests caution in generalizing the effect of self-efficacy, particularly for a potentially painful activity such as SMBG.

The results of this study suggest that a five-item version of the HBS-IID deserves investigation as a means of identifying factors that contribute to noncompliance to SMBG that are amenable to prevention and treatment programming. A shortened version of the HBS-IID would include item 6 (compliance) and predictor items 7 (general self-care skills), 10 (discomfort), 14 (promising others), and 19 (self-reinforcement). Scores less than four on the compliance item could indicate the patient is lacking some skills necessary to learn SMBG. Scores less than four on any of the four predictor items could serve as a basis for investigating the effects of the interventions suggested by the variable assessed on each item.

Prediction of glycemic control in terms of HbA1c and fasting blood glucose test results by HBS-IID items is difficult to interpret because control may be due to factors other than SMBG. Nevertheless, the findings suggest that reducing the emotional-motivational discomfort of SMBG (item 10) and use of FC/SD in terms of prompts to remind oneself to SMBG (item 23) may be essential to a diabetes self-care regimen that also includes medication, diet, exercise, and foot care.

Prior research on the HBS-II on 12 commonly prescribed health related behaviors suggests that different predictor items are relevant to different health behaviors (Frank et al., in press; Lukens et al., 2005). Therefore, future studies may suggest compliance enhancement strategies specific to each aspect of the diabetes self-care regimen. After improvement of the internal consistency reliability of item 24, we believe that the entire HBS-IID deserves further investigation by inclusion of additional aspects of compliance to the diabetes self-care regimen, such as taking medication as prescribed, engaging in regular exercise, eating a diabetic diet, practicing daily foot care hygiene, and using SMBG results to modify certain aspects of the diabetic treatment regimen as instructed by a physician.

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Preventing Behavior Problems and Health-Risking Behaviors in Girls in Foster Care

Patricia Chamberlain, Leslie D. Leve, and Dana K. Smith

Abstract

Transition into middle school presents complex challenges, including exposure to a larger peer group, increased expectations for time management and self-monitoring, renegotiation of rules with parents, and pubertal changes. For children in foster care, this transition is complicated by their maltreatment histories, living situation changes, and difficulty explaining their background to peers and teachers. This vulnerability is especially pronounced for *girls* in foster care, who have often experienced sexual abuse and are at risk for associating with older antisocial males. Failures in middle school can initiate processes with cascading negative effects, including delinquency, substance abuse, mental health problems, and health-risking sexual behaviors. An intervention is described to prevent these problems along with a research design aimed at testing the intervention efficacy underlying mechanisms of change.
Keywords: Gender, prevention, foster care, middle school, girls.

Introduction

Numerous studies show that youth in foster care are at high risk for an array of negative outcomes, including participation in health-risking sexual behaviors (HRSB), involvement in the juvenile justice system, substance use, failed placements/foster care "drift," homelessness, and serious educational problems (Aarons, Brown, Hough, Garland, & Wood, 2001; Garland et al., 2001; Lewis, Pincus, Lovely, Spitzer, & Moy, 1987; Pawlby, Mills, & Quinton, 1997). Poor outcomes for youth in foster care consume a large and growing amount of national, state, and local resources (Institute for Health Policy, 1993). These risks and costs may be especially pronounced for *girls* in foster care, who have often experienced high rates of sexual abuse and numerous parental transitions, and are at risk for associating with older antisocial males and having poor relationships with female peers (Leve & Chamberlain, 2004, 2005; Pawlby et al., 1997; Underwood, 1998). Social and academic failures in middle school can initiate a set of processes with cascading negative effects for such girls, including delinquency, substance abuse, poor school performance, mental health problems, and participation in health-risking sexual behaviors. Despite such risks, adolescent girls are less likely to receive specialty mental health or school-based services than are their male counterparts (Caseau, Luckasson, & Kroth, 1994; Offord, Boyle, & Racine, 1991). In this paper, we describe the design and theoretical rationale for a study that tests the efficacy of an intervention designed to prevent behavioral and health-risking outcomes for adolescent girls in foster care who are transitioning from elementary school to middle school.

Development of Behavioral and Health-risking Problems in Girls: Selecting Intervention Targets

There is little research to guide intervention development for at-risk girls. The theoretical basis for the development of treatments for youth with antisocial behavior has been highly influenced by population-based longitudinal studies, but the vast majority of these have focused on males. Far fewer girls than boys develop problems with antisocial behavior, making girls more difficult to study in population-based samples. To help identify a target population of at-risk girls and the specific targets for intervention for such girls, we examined the risk and protective factors from a sample of girls referred from the juvenile justice system for out-of-home placement due to serious delinquency (Leve & Chamberlain, 2004). Over 80% of the girls in that study had documented child maltreatment and involvement in the child welfare system.

Analyses focused on the identification of specific childhood and family predictors that increased

the likelihood that girls would engage in early-onset delinquent behavior. Child characteristics (i.e., early pubertal onset and low IQ), family environmental factors (i.e., severe punishment, frequent parental transitions, sexual abuse, and biological parent criminality), and child court records were assessed. Results indicated that girls who ended up in the juvenile justice system were first arrested at age 12½ (on average), suggesting that a subgroup of girls engages in early-onset delinquency. Consistent with Moffitt and Caspi (2001), we found that the early-onset subgroup of girls had childhood risk factors similar to those of their male counterparts. Specifically, the number of parental transitions and the girls' biological parents' criminality significantly predicted girls' age of first arrest, with the final model accounting for 50% of the variance in age of first arrest. These findings guided us to focus our prevention efforts on girls in foster care (because of their exposure to multiple parental transitions and their likely exposure to biological parent criminality) and to select girls who were younger than age 12 (to prevent first arrests). Specifically, we focused on the transition to middle school as a key period of risk.

Selection of the intervention targets. In Leve and Chamberlain (2004) we also found that girls' who were arrested at a younger age where more likely to engage in subsequent HRSB, suggesting that numerous placement changes and early first arrest may jointly increase the likelihood of cascading risky behaviors and increase the likelihood of poor long-term adjustment. The percentages for engagement in HRSB by juvenile justice girls were strikingly high, especially given that many participants were living in locked settings (e.g., treatment hospitals, detention, training schools) for some of the time before enrollment into the study, thus limiting their opportunity to engage in any sexual relations. A composite HRSB score was formed by aggregating items 2–6 shown in Table 1. This construct score showed that engagement in HRSB at baseline related to self-reported sexually transmitted disease one year later ($r = .38$, $p < .01$) and poor physical health ($r = -.26$, $p < .05$). Many juvenile justice girls had very inaccurate beliefs about methods for preventing STDs; fewer than half correctly identified condoms without spermicide as protective against STDs. Taken together, these findings suggest the importance of preventing engagement in HRSB as one component of intervention development with foster girls.

Table 1. *Percentage of Juvenile Justice Girls Who Engaged in Health-risking Sexual Behaviors at Baseline When Asked About the Prior 12 Months (n = 90).*

	%
1. Had sexual intercourse at least once in last 12 months	89
2. Had sexual intercourse with someone known less than 24 hours	43
3. Had sexual intercourse with someone who injects drugs	33
4. "Never" or "Rarely" used safe-sex practices when having intercourse	41
5. Had sexual intercourse with 3 or more partners in a 12-month period	65
6. "Never/almost never" discussed safe-sex practices with new sexual partners	25

There was also a high level of substance use among juvenile justice girls, and in particular, girls who are first arrested at a younger age show heightened levels of substance use. Almost all girls reported using tobacco daily, and more than one third reported using marijuana, alcohol, and hard drugs daily to weekly. Further, use of each of these substances correlated significantly with HRSB, indicating high comorbidity between delinquency, substance use, and HRSB. Overall, these findings suggest that effective preventive interventions with at-risk girls may benefit from including a focus on preventing the onset of substance use.

A third related prevention target is girls' peer relations. Association with delinquent peers is a well-established risk factor for male delinquency, and there is evidence to suggest that having non-delinquent female friends may protect against some of the negative behavioral outcomes often seen in

foster care girls. To examine these, we looked at the relationship between engagement in HRSB and peer relations and found a trend toward a negative relationship between girls' HRSB engagement at baseline and positive peer relationships at baseline (r = -.36, p = .06) and 12 months later (r = -.30, p < .05). Furthermore, associating with delinquent friends was significantly related to later failure to use protective methods when engaging in sexual relations with a new partner (r = -.46) (Leve & Chamberlain, 2005). Other researchers have found similar relationships between the peer network and HRSB. For example, Underwood (1998) found that the number of friends and frequency of peer interactions positively predicted the avoidance of pregnancy.

Friendships with prosocial peers, especially female peers, are undermined by negative interpersonal processes such as relational aggression, which has been shown in several studies to be more prevalent in girls than in boys. Relational aggression has been defined as a non-physical form of aggression that includes disdainful facial expressions, ignoring, exclusion, gossiping, collusion, or circuitous aggression (i.e., through another person; Crick & Grotpeter, 1995; Galen & Underwood, 1997; Lagerspetz, Björkqvist, & Peltonen, 1988). Research shows that such behaviors (while more subtle than physical aggression) are associated with serious negative outcomes such as peer rejection and social maladjustment. Crick and Grotpeter (1995) found that relationally aggressive children experienced social problems such as being more disliked by other children and experienced more peer rejection, depression, loneliness, social isolation, and feelings of unhappiness compared to non-relationally aggressive children. Research highlighting the negative social and emotional effects of socially/relationally aggressive behavior, coupled with evidence suggesting that girls show the highest prevalence of these behaviors and the most pronounced negative outcomes, points to the need for developing and targeting this process in preventive interventions for at-risk girls.

In sum, our prior work with adolescent girls referred from juvenile justice suggested that they are engaging in substantial levels and multiple forms of problem behaviors, and therefore, a preventive intervention should target multiple areas and examine effects on the array of relevant outcomes.

Theoretical Model Guiding the Preventive Intervention

We developed a theoretical model to guide the intervention that is intended to address both risk and protective structures in multiple domains. The model specifies a test of the efficacy of the intervention and a test of the mechanisms of change so we can examine two interlocking sets of questions, as recommended by Snyder et al., (2006): Does the intervention work? and How does the intervention work? This approach has characterized our previous studies with boys and girls in the juvenile justice system referred because of serious delinquency (Chamberlain & Reid, 1998; Leve, Chamberlain, & Reid, 2005).

The conceptualization of how early adversity relates to proximal and longer-term outcomes and how the proposed intervention will affect proximal and longer-term outcomes for girls is shown in Figure 1. As can be seen there, early adverse experiences and events are hypothesized to relate directly to proximal outcomes (e.g., placement stability in foster care, behavior problems, school achievement, social support, affiliation with prosocial female peers, and relational aggression), which are hypothesized to relate to more severe longer-term outcomes (e.g., delinquency, association with deviant peers, school failure and truancy, HRSB, initiation of substance use, and poor mental and physical health). The preventive intervention targets foster/kin parent training, girls' skill building, and ongoing training/support for both foster/kin parents and girls. The intervention is hypothesized to directly impact the proximal outcomes. In addition, mediated effects are hypothesized such that effective parenting and girls' social competence will drive changes in the relationship between group assignment and proximal outcomes. Note that we do not expect a direct relationship between early adversity and the intervention outcomes; rather, we expect that the intervention will result in a mean-level increase in positive outcomes for each girl, regardless of her level of adversity.

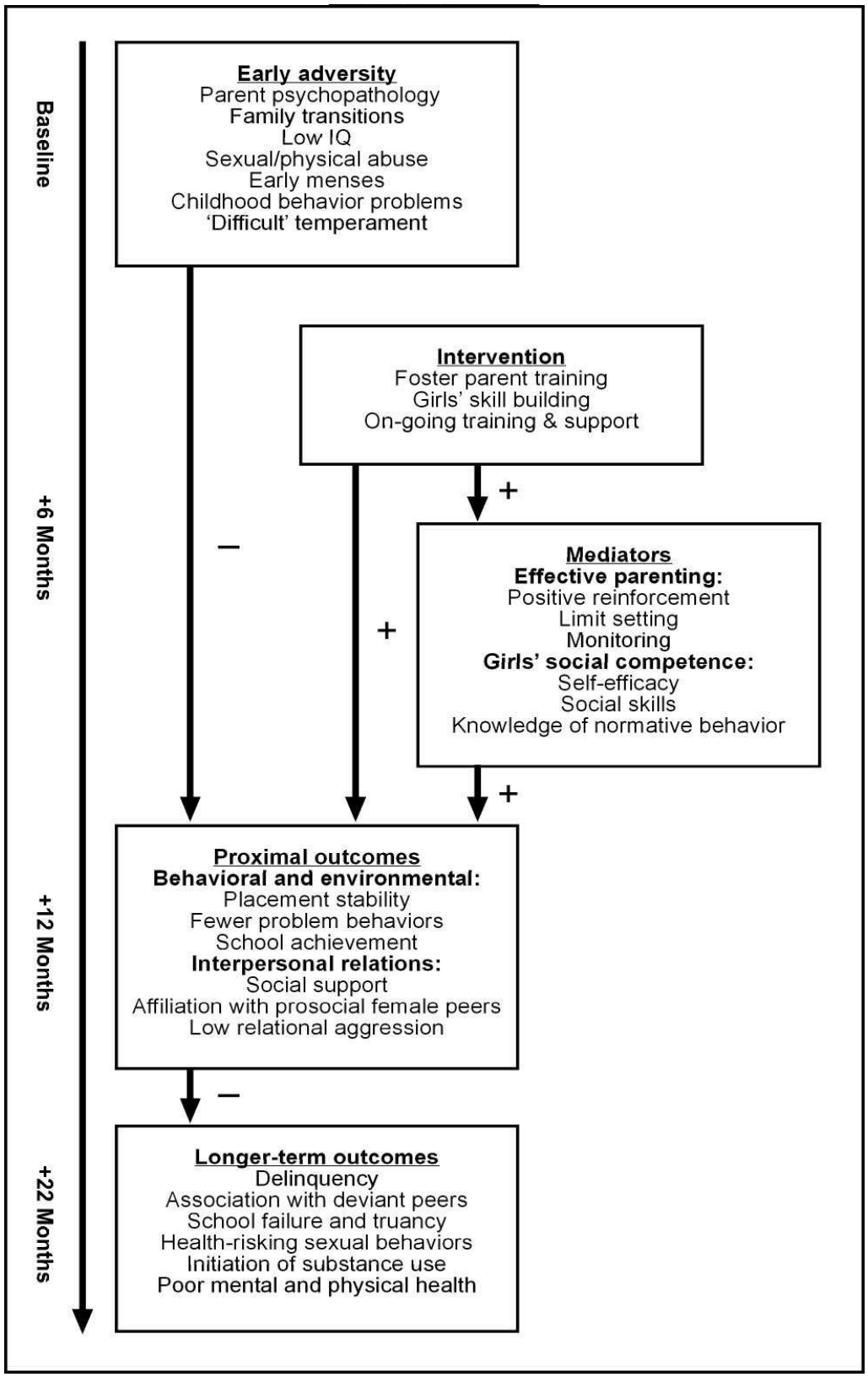

Figure 1. Theoretical Model

Evidence Base for Components of the Intervention

Parenting skills. Numerous preventative interventions have been shown to reduce or prevent youth conduct problems and problems with substance use, poor school behavior and performance, and deviant peer relations in pre-adolescent and adolescent youth. For example, studies show that the developmental pathways to a child's behavioral and health problems are strongly associated with ineffective parenting practices (Gelfand & Teti, 1990; Laub & Sampson, 1988; Loeber & Dishion, 1983), so it is logical that interventions focused on teaching and supporting parents to use more effective parenting methods have emerged as a mainstay of empirically grounded prevention efforts (e.g., Eddy, Reid, & Fetrow, 2000). These interventions have targeted parenting practices such as low parental monitoring and supervision, the use of harsh or overly lax discipline methods, and low parental involvement and/or the lack of reinforcement and mentoring. These parenting practices have a well-documented relationship to the development of youth antisocial behavior and drug use during the pre-adolescent and adolescent years (Chamberlain, 2003; Henggeler, Schoenwald, Borduin, Rowland, & Cunningham, 1998; Patterson, Reid, & Dishion, 1992) and have been targeted as a key component of the Multidimensional Treatment Foster Care (MTFC) model that was developed as an alternative to residential and group care for adolescents with severe delinquency (Chamberlain & Reid, 1998; Leve & Chamberlain 2005). The efficacy of MTFC has been tested with children and adolescents with severe mental health problems leaving the state hospital (Chamberlain & Reid, 1991). It has also been adapted for use with preschoolers at risk for placement disruption in the foster care system (Fisher, Burraston, & Pears, 2005) and as a preventive intervention in regular "state" supported foster care settings (Chamberlain, 2000; Chamberlain, Moreland, & Reid 1992).

Child skill building. Many of the research-based programs that show positive outcomes in terms of preventing conduct problems and substance also have included a child training component (Botvin, 2000; Botvin, Griffin, Diaz, & Ifill-Williams, 2001; Hansen, 1994) often focusing on using cognitive-behavioral approaches to increase positive friendships and to increase the accuracy of beliefs about peer norms for sex, drug use, and violence. The targets are augmented by the use of motivational principles to encourage consideration of future goals and how antisocial behavior and drug use may interfere with these goals. In randomized evaluations, Harrington and colleagues found more prosocial bonding, less sexual activity, less substance use, and a trend for less aggression for youth exposed to these ideas (Harrington, Giles, Hoyle, Feeney, & Yungbluth, 2001; Harrington, Hoyle, Giles, & Hansen, 2000).

One-on-one peer mentoring (in which an older peer or young adult guides or "coaches" the youth toward prosocial endeavors through direct instruction, modeling appropriate behavior, and serving as a confidant and older advisor) is another common component of preventive interventions aimed at increasing child competency building. There is some evidence that children who have experienced the personal interest and nurturing influence of a mentor exhibit better outcomes than children without mentors (Maniglia, 1996; Mech, Pryde, & Rycraft, 1995; Philip & Hendry, 1996). These mentoring effects have been found in numerous populations, including youth in foster care (Mech et al., 1995). We use recent female college graduates (who have been recruited and trained to be "skills trainers/coaches") in weekly one-on-one sessions with study girls to increase the girls' positive relations with prosocial female peers.

Study Participants

One hundred girls and their foster/kin parents are being recruited in the Spring of their final year of elementary school (usually fifth grade). All girls living in state-supported foster homes in Lane or Multnomah County, Oregon, who are finishing elementary school are eligible for participation. Participants are randomly and equally assigned to the intervention or to the foster care "as usual" (FCSU) condition following foster parent consent and youth assent. State caseworker consent is also obtained. Kin and non-relative foster placements are included because the rate of kin placements has increased in recent years and is expected to continue to grow throughout the country. To date, 91 foster girls and their families have been recruited and have begun participation (49 in the treatment condition and 42 in the control condition).

Overview of the Intervention

The intervention includes six group sessions for the foster/kin parents before girls' enter the sixth grade, accompanied by a parallel set of six group sessions for the girls. Following those initial sessions, which are intended to inoculate girls and foster parents to prevent early adjustment problems during the first days of transition into middle school, ongoing support and trainings are provided for both foster parents and girls, including weekly group meetings for foster/kin parents and individual weekly skill training sessions with the girls and their coaches throughout the sixth-grade year.

Foster parents. An overview of the session content for foster parents is in Table 2, and topics for the ongoing support and training sessions are in Table 3. In addition, throughout the intervention foster parents participate in a 10-minute telephone interview (i.e., the Parent Daily Report Checklist [PDR]; Chamberlain & Reid, 1987) about the occurrence/nonoccurrence of behavioral and/or emotional problems during the past 24 hours and the type of mentoring, discipline, and supervision they have used during the past day. PDR has been shown to predict the probability of placement disruption in foster care (Chamberlain et al., 2006) and has been used in numerous studies to measure intervention outcomes (Kazdin & Wassell, 2000).

Table 2, Next Page

Table 2. *Topics for the Initial Foster/Kin Parent Group Sessions*

Session	Topic	Description
1	Group orientation and overview	Introduce group members and leaders Overview of issues facing pre-adolescent girls and discussion of group rules Home practice: List 5 best things about foster girl and 5 aspects of their parenting they feel best about
2	Encouraging cooperation/ adult requests Tracking relational aggression	Review home practice assignment What are reasonable expectations? Definition of cooperation. Spotting relational aggression and rationale for intervening even though it is a "little" thing How adult requests can be framed and common pitfalls Home practice: Deliver and watch the reaction to 10 requests
3	Basics of behavioral contracting/tracking	Review of home practice assignment Discuss systematic tracking and breaking tasks down Using steps toward the target behavior to set up a point and level system Home practice: Track a target behavior and devise a point and level system
4	Fine tuning and individualizing the point and level system – keeping it relevant and responsive to girls' changing needs	Review of home practice assignment Group discussion and review of contracts Discuss the use of behavioral incentives Home practice: Continue to track, to talk to foster children about incentives, and to revise contracts
5	Presenting behavioral change plans to girls	Review of home practice assignment Discuss how to frame the point and level system so that it will be received positively Home practice: Present the point and level system to the girl and implement
6	Limit setting	Review of home practice assignment Discuss the balance between encouragement and limit setting Present the principles of effective discipline Home practice: Continue to refine and implement the point and level system

Table 3, Next Page

Table 3. *Topics for Ongoing Group Sessions*

Focus area	Topics covered
Setting limits without escalating problems	Presentation of an effective procedure for time out and video Procedure for privilege removal
School involvement—working with teachers	Importance of clear home-school communication How to initiate and maintain effective home-school communication
Relational aggression and emotional dysregulation	Review of problems that are occurring on splitting. Discussion of why deciding to change things when girls are upset is a bad idea. Emotional coercion and how not to reinforce it. Adding these behaviors to the behavioral plan
Becoming involved with your girl's peers	Rationale for monitoring peer associations Methods for monitoring peer associations
Encouraging prosocial female peer relationships	Specific steps that encourage positive peer involvement with other girls How to monitor peer relationships as they develop and change Creating opportunity for positive peer associations with a female friend
Dealing with covert problem behaviors	Discussion about dealing with behaviors that are not observed How to address these less obvious behaviors (e.g., stealing)
Addressing development and change in girls	Discussion of what the research shows on the difficulty of being a teenaged girl Dealing with girls' negative self images and the special identity problems of being a foster child. Modeling "taking care of oneself as a young woman" and stress reduction methods you can share. Revising behavioral plan to include developmental issues and gender
Health-risking behaviors	Creating a plan for talking to girls about sexual matters that involves basic education and that opens the door for girls to communicate about the concerns, pressures, and challenges they face. Basic review of risk factors and special issues facing youth with histories of trauma and abuse. Role playing initiating the conversation with other parents and reading educational information on safe sex practices and "How to Talk to Teens about Sex"
Substance use and knowing about norms, motivation to not use and what to do if suspicion of use occurs	Discussion of the importance of orienting girls to community norms (debunking perceptions that "everyone uses"), focus on goals and plans inconsistent with use, how to talk about risks and triggers, conducting urine-analysis—when and how.
Stress on your family dynamics	Why are girls harder than boys? Common relational traps. Getting other family members on board with the program. Using each other for support.

The ongoing group meetings focus on 15 areas that are interwoven each week with issues raised by the foster/kin parents and current problems flagged from the PDR data. A trained facilitator and a co-facilitator (i.e., an experienced foster/kin parent) conduct the parent group sessions, with approximately seven foster parents per group. The curriculum is designed to address prevention of participation in delinquency, HRSB, and substance use, and to present strategies for helping girls build friendships with prosocial peers and refrain from relational aggression. Between group meetings, foster/kin parents are encouraged to implement behavioral procedures (i.e., home practice assignments and use of a daily point and level system). The point and level system has been used extensively in implementations of the MTFC model (e.g., Chamberlain 1994, 2003) and has been shown to directly contribute to placement stability (Smith, 2002). The point and level system is designed to provide a structure for foster/kin parents to provide girls with a rich daily schedule of reinforcement for normative/appropriate behavior and clear limits for problem behaviors. The group facilitator uses the PDR data to connect the planned curriculum to the daily challenges the foster parents are facing. Group facilitators receive initial training in the

intervention model and ongoing weekly supervision from a clinical supervisor. Foster/kin parent meetings are videotaped and the tapes are reviewed weekly to ensure model fidelity.

Foster girls. The initial six sessions for the foster girls are held in a group format. The group is called *Summer Pride*. The sessions occur at the same time that the foster/kin parent group sessions occur (twice weekly for 3 weeks). The *Summer Pride* sessions aim to help girls prepare for middle-school entry and focus on topics such as increasing girls' skills for establishing and maintaining positive relations with female peers, decreasing vulnerability stemming from the stress of being a foster child, increasing self-confidence, and decreasing receptivity to initiations from antisocial peers.

The skills that are targeted include strengthening problem solving skills; practicing sharing/cooperating with peers; increasing the accuracy of perceptions about peer norms for abstinence from drug use, sexual activity, and violence; and practicing strategies for meeting new people, for dealing with feelings of exclusion, and for talking to friends and teachers about life in foster care. Each girl identifies a set of short- and long-term goals and is asked to make a public commitment to avoid drugs and HRSB. Recent female college graduates who are experienced coaches conduct the *Summer Pride* sessions. During the final *Summer Pride* session, girls work with their coaches to solidify the image that they wish to project as they enter the sixth grade and to examine options for projecting that image.

Once school starts, weekly individual coaching sessions occur that focus on three primary topics: helping girls establish and maintain positive peer relations, especially with female friends; increasing girls' knowledge of accurate peer norms for sexual and drug-use behaviors and increasing comfort talking about these topics; and helping girls solve problems and relieve stress in academic and social areas. Similar to a peer mentoring approach, coaches serve as role models for appropriate prosocial behavior and are confidants for issues surrounding family life and peer relations. To facilitate positive peer relations, coaches help girls identify non-deviant female peers with whom to participate in social events. Coaches engage in role-playing and problem-solving discussions with girls on how to begin friendships and on how to handle relational aggression from peers. Coaches are trained and supervised to use a behavior-based approach to help girls learn and practice new social skills.

Throughout the year, coaches emphasize the risks of abusing substances and discuss developmentally appropriate issues around dating and partner relations with girls. Prior work suggests that providing such support can facilitate discussions on sensitive topics such as sexuality and substance use (Prescott, 1998). Modeling the work of Belcher et al. (1998) and Lefkowitz, Sigman, and Kit-fong Au (2000), coaches provide information about STD transmission and risk behaviors, discuss the prevalence of STDs, and clarify any misconceptions regarding these topics. The coaching relationship is not intended to provide girls with therapy but rather with ongoing social support and training. Weekly supervision of the skills trainers/coaches helps to keep this distinction clarified.

Specific Hypotheses and Conclusions

We are hypothesizing that the preventive intervention described here will positively impact proximal outcomes (shown in Figure 1) measured at the end of the sixth grade. Specifically, girls in the intervention group are expected to have fewer behavioral problems, fewer placement disruptions, better school achievement, more social support, more affiliation with prosocial female peers, and less relational aggression than girls in the control condition who are receiving case work services as usual. Second, we hypothesize that the preventive intervention will positively impact a set of more distal outcomes to be measured at the end of the seventh grade. Specifically, the intervention group girls are expected to be more academically competent, to participate less in substance experimentation and use, to partake less in HRSB, to show less delinquency, to have fewer deviant peer associations, and to have better mental and physical health than the control group girls. Third, we hypothesize that effective parenting will serve as a

mediator of intervention effectiveness such that parenting characteristics at the 6-month assessment will account for significant amounts of variance in the proximal outcomes. Therefore, we expect that, regardless of group assignment, the girls who receive more positive reinforcement, closer supervision/monitoring, and more effective limit setting will have less substance use, less HRSB, less delinquency, and better academic performance at the 6-month follow-up. Fourth, we hypothesize that girls' interpersonal skills, self-efficacy, and knowledge about the norms and personal risks for HRSB and substance use will significantly mediate the relationship between group assignment and proximal outcomes.

The intervention described here is theoretically based and designed to target multiple factors through work with parent figures and individual youth. Although intervention activities take place intensively (twice per week) before the school year begins and continue to occur weekly throughout the girls' sixth-grade year, they are designed to be relatively low cost (estimated at $1,500 per girl). Group sessions are conducted for the parents, and bachelor's level coaches are used for interventions with the girls. If serious problems with delinquency, substance use, and/or participation in HRSB can be avoided, it is likely that the intervention will be cost effective. The randomized design being used will allow for a rigorous test of the study hypotheses, which are aimed at evaluating whether this intervention can lessen the risks of serious negative outcomes for vulnerable foster girls.

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State of the Research & Literature Address: ACT with Children, Adolescents and Parents

Amy R. Murrell and Andrew J. Scherbarth

Abstract

Acceptance and Commitment Therapy (ACT; Hayes, Strosahl, & Wilson, 1999) has been found effective in treating a wide number of psychological conditions affecting adults. To date, however, little research has been done on the use of ACT with youth and parents. Few efforts have been made at summarizing the literature that does exist. This article, therefore, is a review of empirical and theoretical work with these populations. Online databases, ACT-related websites, and personal communication were used to collect information about published and unpublished, ongoing work. Recommendations for future research are also mentioned.
Keywords: ACT, youth, parents, review, research recommendations.

To date, Acceptance and Commitment Therapy (ACT; Hayes, Strosahl, & Wilson, 1999) has been has been shown effective with adults who experience a number of conditions, including work-related stress (Bond & Bunce, 2000), professional burnout (Hayes, Bissett et al., 2004), and anxiety with marital distress (Luciano & Gutierrez, 2001). ACT has also been used to effectively treat several common forms of psychopathology among adults, such as as major depressive disorder (Lopez & Arco, 2002), panic disorder (Carrascoso, 2000), and poly-substance abuse (Hayes, Wilson et al., 2002). In addition, ACT has been shown to be an effective treatment of serious mental illness, such as schizophrenia (Bach & Hayes, 2002), and medical disorders—e.g., diabetes (Gregg, 2004). A good deal of time and effort has gone into the summarization of ACT conducted with adults. Several international presentations, an empirical review paper (Hayes, Masuda, Bissett, Luoma, & Guuerrero, 2004), and a meta-analysis (Hayes, Luoma, Bond, Masuda, & Lillis, 2006) have summarized such theoretical and empirical work.

Thus far, there has been little focus on summarizing the state of ACT work conducted with children, adolescents, and their parents. To rectify this need, theoretical papers and empirical research conducted with these populations will be reviewed. Prior to this review, the authors will provide a list of general considerations for using ACT with youth and parents.

Then, a brief introduction to each problem currently addressed by the ACT research community, followed by: published empirical studies, published theoretical papers that pose specific considerations for working with individuals with that problem, and any applicable unpublished works will be presented. The authors' decision to include unpublished work was based upon two factors: (a) many clinicians and researchers have expressed an interest in ACT with youth and parents; however, (b) because the area of study is fairly recent, little published work has come to fruition. After individual problems are addressed, the published research will be briefly summarized. Finally, further questions and recommendations for ACT researchers will be offered.

General Considerations for use of ACT with Youth

ACT can be incorporated into existing treatment protocols for children, adolescents and/or parents. In addition, ACT shows promising results as the primary treatment for these populations; although, the special challenges of working with children need to be kept in mind (Murrell, Coyne & Wilson, 2005). Case conceptualizations of children, like adults, require a functional analysis and assessment of both values and avoidance. However, using multiple sources of information is especially

important with young children. In addition to meeting ethical requirements, in order to maintain the integrity of the collaborative spirit of ACT, therapists should obtain fully informed consent from children as well as their parents. An additional concern is developmental propriety. Although children and adolescents are able to benefit from most components of the ACT model, some pieces of the work are more difficult than others. Developing a sense of self-as-context and making contact with the present moment may be too abstract for children—especially young children—to grasp. Murrell et al. suggest concretizing metaphors such as the *mud-in-a-glass* and the *box-of-stuff* as well as including many physical activities in efforts to increase effectiveness. These adaptations allow for developmentally appropriate exercises for children and teens of various capabilities. For example, the complicated idea of valuing is made clearer through the *vital or poison* activity. In this activity, youth are encouraged to sort their attempts at alleviating distress into one of two boxes, one with a heart that represents moving closer towards values and the other with a poison bottle that represents moving away from values. Murrell et al. also note that parental involvement may increase effectiveness, and they make suggestions about ways in which to address parents' support of their children's treatment.

Method

Published articles were located using the PsychINFO database search engine provided by EBSCO and the Contextual Psychology website. Search terms included "(acceptance or ACT) and (child* or adolesc* or parent*)." Information about unpublished work was found in published articles or the research labs link on the Contextual Psychology website, or solicited directly from prominent researchers in the area of ACT with youth. Only articles written in English were included in this review, although an article written in Spanish is mentioned.

Review Results: Children and Adolescents

Anorexia Nervosa

Anorexia nervosa is a disorder characterized by refusal to maintain higher than 85% of expected body weight, distorted perception of body image—i.e., denial of the seriousness of current weight or placing considerable emphasis of self-evaluation on body weight, intense fear of gaining weight/becoming fat, amenorrhea, and either excessive restriction and/or binging/purging behavior (DSM-IV-TR; APA, 2000). Anorexia occurs disproportionately among 0.5-1% of females, which is at a ratio of nearly 20 females for every one male (Kronenberger & Meyer, 2001; Williamson, Bentz, & Rabalis, 1998). Consequences of anorexia include social problems and impaired physical functioning—i.e., organ failure or death (Heffner, Sperry, Eifert & Detweiler, 2002).

Heffner et al. (2002) published a case study that included ACT, traditional CBT, and family interventions to treat a 15-year-old Caucasian girl diagnosed with the restricting subtype of anorexia nervosa. The referenced article focused exclusively on the ACT components of the treatment package. These components were used to address the teen's attempts to eliminate negativity by controlling her body weight. The *Chinese finger trap* was used to establish control is a problem; the *chessboard metaphor* was utilized to foster a sense of self-as-context, and *thought parade* and the *bus driver metaphor* were reviewed to assist in the process of defusion. The *funeral meditation* was used to identify values; while the *valued directions map* and journaling exercises were used to aid commitment to valued action.

"Emily" completed the Eating Disorders Inventory-2 (EDI-2) and was weighed before every session, at the conclusion of therapy and at follow-up sessions. Over the course of 14 therapy and four follow-up sessions, Heffner et al. noted anoretic symptom reduction. Emily's EDI-2 scores on the drive for thinness and ineffectiveness subscales were reduced from baseline measures at the 71st and 73rd

percentile, respectively, to the non-clinical range. Her weight proceeded to increase to normal range and her menses returned. Emily continued to pursue her values of improving social relations, working with animals, writing, and swimming. Despite all of these positive changes, it should be noted that Emily's score on the body dissatisfaction subscale was still at a clinical level at termination.

Three theoretical responses to Heffner et al.'s work were also published. Hayes and Pankey (2002) explain the goals of ACT as a comprehensive treatment model. They note that ACT seeks to increase valued action in a person's life and to reduce maladaptive control strategies that attempt to reduce/eliminate private experiences, since such attempts are doomed to failure by the laws of verbal behavior outlined by Relational Frame Theory (RFT; Hayes, Barnes-Holmes, & Roche, 2001). Furthermore, Hayes and Pankey outline assessment of maladaptive verbal behaviors—i.e., fusion and experiential avoidance, explain why ACT is an appropriate treatment model to address the unique problems found with anorexia, and offer alternative intervention strategies. Orsillo and Batten (2002) critiqued and clarified technical errors in Heffner et al.'s explanations of ACT interventions. For example, they noted that defusion of the literal meaning of thoughts is important for not only negative, but also positive content. Additionally, Orsillo and Batten state that anorexia is an obstinate problem that may require a focus on the client creating a meaningful life that is not centered on his or her physical appearance. Wilson and Roberts (2002) explain the goal of ACT in behavioral terms - to increase the number of potential responses in the face of private experiences, thus weakening stimulus control which results in experiential avoidance or detrimental behavior. Wilson and Roberts recommend that practitioners of any orientation assess important frequent co-variables such as a client's physical health, psychosocial functioning, mood, obsessive thoughts, history of weight regulation, and body image. Finally, they outline the key principles to follow while conducting ACT. They stress the importance of attending to values, as well as doing exposure, defusion, and empowerment during all phases of treatment.

Anxiety Disorders

Anxiety disorders—such as generalized anxiety disorder (GAD), obsessive compulsive disorder (OCD), panic disorder, post-traumatic stress disorder, separation anxiety disorder, and specific phobias—are among the most prevalent disorders for children, with a combined prevalence rate ranging from 11-25% (Greco, Blackledge, Coyne & Ehrenreich, 2005; Kronenberger & Meyer, 2001). Typical symptoms include distress—i.e., excessive worry or difficulty concentrating, and aversion upon presentation of external stimuli—i.e., avoiding school or social withdrawal, and physiological symptomatology—i.e., insomnia, abdominal pain, rapid heart beat and/or muscular tension (DSM-IV-TR; APA, 2000). These symptoms may interfere with a child or adolescent's ability to complete schoolwork, maintain positive peer relations, and perform age-appropriate autonomous tasks in the home (Kronenberger & Meyer, 2001).

Greco et al. published a theoretical article that explains CBT interventions, spells out the differences between traditional cognitive-behavioral therapy (CBT) and ACT, conceptualizes anxiety, and explains how ACT may be applied to child/adolescent clients. CBT interventions tend to be used in a package that may include gradual exposure to reduce fear, relaxation or distraction to decrease physical symptomatology, and either modeling or social skills training to facilitate daily functioning. Whereas traditional CBT interventions emphasize anxiety management and symptom reduction, ACT interventions target the function of these private events to facilitate functioning and living a worthwhile life. Therefore, traditional CBT aims to eliminate the private experiences of anxiety, while ACT aims to eliminate the constrictive nature that private events can take on, in order to allow for a better quality of life. ACT assumes symptom reduction will occur, although it recognizes that living a valued life may not be possible without some symptoms of anxiety. Greco et al. conceptualize anxiety as a combination of fusion—the assumption that highly-emotional and catastrophic worries are accurate depictions of reality,

and experiential control—an unwillingness to experience anxiety symptoms and attempts to avoid or alter these worries, physical symptoms or other private experiences. Greco et al. offer various exercises for each treatment component of ACT—i.e., *tin can monster* to aid in defusion and *Chinese finger trap* to establish that control is a problem. Greco et al. also propose concrete interventions to recruit parents to aid therapy, such as assessing rules, contracting and "making room" for children to participate in the therapeutic procedure.

To date, no published studies have addressed anxiety disorders, although there is current work being done. They are several unpublished papers. Coyne and colleagues recently conducted a trial using ACT in the treatment of pediatric OCD. Greco et al. (2005) cited a successful reduction in school refusal of an 11-year-old-male, which was maintained even after a two-year follow up (Heffner, Sperry, Eifert, & Detweiler, 2002). The authors reported reductions in social anxiety, as well as increases in school attendance and valued behavior in an 8-year old girl with social phobia and GAD. Her treatment protocol included a combination of eight individual and four family treatment sessions (Greco, 2002). Some of the most current research on anxiety is investigating the impact of ACT in non-pathological populations. Ruiz-Jimenez & Luciano-Soriano (2006) recently presented data that showed that sub-clinical symptoms of adolescents' anxiety associated with chess performance were reduced or alleviated.

Chronic Pain

Children with chronic pain typically experience physical limitations, poor school attendance, and comorbid psychopathology. Chronic pain has been described as either recurrent or persistent pain that remains after an injury has healed (e.g, after a bone has mended; McGrath & Hillier, 1996). The Biopsychosocial Perspective on chronic pain (Turk, 1996) states that pain is a subjective experience, which is a product of genetics, biology, learning, beliefs, cognitive processes, emotions, and coping. Campo et al. (2004) found that 79% of children with recurrent abdominal pain in a primary care sample had an anxiety disorder, while 43% had a diagnosable mood disorder (Campo et al., 2004). Approximately 15-20% of children and adolescents in the United States are afflicted by chronic pain (Zeltzer, Tsao, Stelling, Powers, Levy, & Waterhouse, 2002).

Two empirical articles have been published. Wicksell, Dahl, Magnusson, and Olsson (2005) conducted a case study of a 14-year-old girl who was diagnosed with idiopathic generalized pain. She was treated using an ACT protocol designed to build her ability to live in accordance with her values, rather than to reduce pain or distress. Measures of functional ability, value-based goals, school attendance, pain, and pain-coping were assessed at pretreatment, post-treatment, and longitudinally—i.e., 3-months and 6-months post-treatment. A depression screener, parental encouragement of illness-behavior, and an analysis of pain behavior were also conducted. Results showed that the girl's pain-behavior evoked detrimentally supportive behavior from her social circle at home and school. Therapy included 10 sessions that initially included education about the nature of chronic pain and reassurance from the girl's doctor. Treatment focused on a shift in perspective from reliance upon unworkable pain control strategies to acceptance, and used exposure (defusion) to fear of pain to aid construction of a values-based repertoire. Three sessions were conducted with the girl's parents. These sessions centered around the parents coaching their daughter to pursue value-based living rather than focus on pain reduction. Furthermore, the avoidant function and workability of previous strategies as well as parental fusion were addressed. Results indicate that the patient went from 100% absenteeism from school for the 60 days prior to treatment to enrolling in school without absences throughout the 6-month follow-up period. In addition, emotional-avoidance coping was reduced (from a 2.2 to a 1.1 on a 5-point scale), and all of her value-based goals were achieved and maintained at 6-month follow-up. Functional disability and pain were reduced at post-treatment and eliminated at 6-month post-treatment.

Wicksell, Melin, and Olsson (2006) used a virtually identical procedure in an uncontrolled pilot study that included 14 adolescents who experienced various chronic, debilitating pain syndromes. Instead of assessing pain-coping, and encouragement for illness-behavior, the researchers measured frequency of medication use and catestrophesizing.

Adolescent therapy sessions used the same procedure. Parental involvement sessions were virtually identical, yet were supplemented with instruction, exposure, and values work. Results showed improvements in functioning, with a 68% reduction in number of school days missed due to pain, and a 63% decrease in functional disability, which continued to grow until the 6-month follow-up. Symptom reduction also occurred, with a clinically significant reduction in pain intensity in 46% of participants.

An unpublished, pre-pilot project was conducted by Greco (2006). In this study, ACT was used to address functional abdominal pain in 11 adolescent girls (aged 11 to 14) who also had clinical anxiety and/or depression. Assessments were conducted pre-treatment, post-treatment, and 1-month follow-up. The goals of therapy were to improve functionality and increase valued-living. Adolescent sessions were conducted in a group format over a 12 to 14 week time period. Sessions consisted of all basic ACT components—a basic introduction, creative hopelessness, control as the problem, willingness, valued living, mindfulness, exposure, self-as-context, self-compassion (acceptance), and committed action. Parents met for several sessions (ranged from 1-4), during which they focused on acceptance of their child's distress and personal values work. At follow-up, there were significant improvements as measured by quality of life (group mean changed from 4.8 to 7.75 on a 10-point scale) and functional disability (mean decreased from 33 to 17 on a 60-point scale), and school absenteeism was reduced by nearly 60%. In addition, decreases were found in emotional symptomatology (i.e., somatization and emotional distress).

Medical Settings

Robinson, Gregg, Dahl, and Lundgren (2005) explain the use of the ACT Health Care model (ACT-HC) in medical settings. In this model, patients are assisted from either an individual or programmatic level. This assistance is geared toward living a meaningful life in the presence of difficult private events tied to their illnesses. The authors give an in-depth explanation of how fusion with private content and excessive experiential avoidance not only drive healthcare seeking behavior, but also pose a barrier to appropriate health care behaviors. Therefore, these processes are costly both in terms of resources and personal quality of life. Several treatment protocols are outlined. The authors sketch out details of an intervention that included mindfulness, visualization of a valued-future, and behavioral techniques to successfully manage a 7-year-old boy's comorbid insomnia and abdominal pain.

Risk Behavior in Adolescents

Approximately 11% of adolescents in the United States admit to using drugs (National Survey; SAMSHA, 2004). There are multiple, well-known, negative consequences associated with drug use and other risky behavior. Each year, there are approximately 9 million new cases of sexually transmitted diseases diagnosed in American teenagers (Weinstock, Berman, & Cates, 2004).

Metzler, Biglan, Noell, Ary, and Ochs (2000) conducted a randomized controlled trial in a diverse sample ($N = 339$) of adolescents (ages 15-19) recruited from sexually transmitted disease (STD) clinics. The reported 5-session intervention targeted decision-making and social skills that promote safer sex, as well as acceptance of negative experience that accompanies changes in sexual behavior. Although the intervention was based on social-cognitive theories, the treatment had several ACT-like components and was heavily acceptance-based. Metaphors and exercises were used to foster willingness and set value-consistent goals. At 6 month follow-up, the treatment group did not report fewer STDs; despite this,

treatment group participants reported significantly (a) fewer sexual contacts with strangers or non-monogamous partners in a 3-month period, (b) less alcohol or marijuana use before sex, and (c) higher acceptance of emotions than did the control group participants. Treatment group members also suggested more safer-sex alternatives during a videotaped sexual-situation roleplay test.

Several investigators have researched, but not yet published, the use of ACT with middle and high school students who are at-risk for academic failure and delinquent behaviors. These studies have been conducted in a number of countries and have included measures of smoking and other substance use, self-injurious behavior, academic success, acceptance and valued living. Taken together, these studies yield promising results.

Schizophreniform Disorders

Schizophrenia and other psychotic disorders typically emerge between the ages of 15-35 years of age; hence, it very rarely occurs in children, emerges in adolescence, and prevalence rates peak at 1-1.5% of adults (Kronenberger & Mayer, 2001). Schizophrenia is characterized by delusional beliefs, hallucinations, and negative symptoms—i.e., disorganized speech, avolition, alogia, flat affect (DSM-IV-TR; APA, 2000). A case study by Montes and Pérez Álvarez was published in Spanish in 2001. Abstracts of this article noted that a 17-year-old adolescent male was treated with satisfactory results.

Review Results: Parents

The Early Years

In 1989, a book entitled *Support for caregiving families: Enabling positive adaptation to disability* was edited by Singer and Irvin. This book included two chapters, one by Biglan and the other by Singer, Irvine, and Irvin, that focused on the need to study context and address broad contextual factors in the treatment of parents who have children with severe handicaps. Although these chapters predated the use of the term "ACT," the treatments proposed within them are highly ACT consistent. In Singer et al., the authors review parent group data. They state that treatment included educating parents on how to conduct functional assessments, appropriately use reinforcement and discipline, and how to teach their children skills. Parents in this treatment group evidenced greater reductions in distress than parents who were in a less intensive case program. Biglan writes specifically about Comprehensive Distancing, the precursor to ACT. He suggests that problem-specific approaches are often not effective. He outlines a treatment which includes work on feeling hopeless (i.e., creative hopelessness), seeing control as a problem, and setting valued goals. The use of ACT (and ACT-consistent) treatments and ACT-consistent theoretical work on the subject of parenting are becoming more common; several problems have recently been addressed.

Autism

Autism in children afflicts an estimated 5-20 of every 10,000 children in the United States. This disorder develops by the age of three (DSM-IV-TR, 2000; Kronenberger & Meyer, 2001), and is characterized by bizarre behavior patterns and an impaired ability to communicate and develop relationships with people (Schreibman & Charlop-Christy, 1998). Parents of children with autism are affected by their child's disordered behavior; rates of both developmentally typical and inappropriate behavior in children with autism are related to maternal stress (Tomanik, Harris, & Hawkins, 2004). In fact, maternal stress levels are higher among mothers of preschool children with autism than children with other developmental disorders (Eisenhower, Baker, & Blacher, 2005). Keeping such knowledge in mind, Blackledge and Hayes (2006) designed a two-day, 14-hour group experiential ACT workshop for 20 parents of children with autism. In the overall sample, significant but not large improvements were found

on measures of depression (i.e., BDI-II scores changed an average of 4 points), psychiatric symptomatology, and psychological distress from the initial assessment 3 weeks before treatment to 3 month follow-up session. Changes in depression were larger and most pronounced among parents who scored at or above the clinical cut-off. Avoidance and fusion were likewise impacted from pre-treatment to follow-up; results suggested that fusion may have mediated the relationship between treatment and symptom reduction.

Impaired Parenting

Coyne and Wilson (2004) gave an RFT consistent account of impaired parenting and offered a case study that relies upon ACT to broaden psychological flexibility and reduce rule-governed parental behavior. The authors emphasize the importance of analyzing the function—rather than the form—of a parent's behavior. Perhaps the function of a parent avoiding homework from a parenting class is to avoid the negative emotions evoked while thinking about his/her child's misbehavior, even though avoidance of the homework may appear to be an aversion to reading and writing. This is important to consider when developing parenting treatments. Coyne and Wilson state that attempts to avoid feeling incompetent may impair a parent's ability to develop new parenting skills. Furthermore, fusion with verbal rules, such as "I can't tolerate my child's misbehavior," would be dominated by the urge to escape such a situation in any way possible. Inflexible parenting techniques intended to squelch misbehavior on a short-term basis may actually function to maintain such behavior, or lend themselves to worse behavior in the long run.

This RFT account of impaired parenting seems likely. There are two yet unpublished studies that provide matching-to-sample evidence for this inflexibility in responding (Murrell, in review; Murrell, in progress). There is also data that show that experiential avoidance in parents, as theorized by Coyne and Wilson, is related to parental well-being and adjustment (Greco, Heffner, Poe, Ritchie, Polak, & Lynch, 2005) and to child outcome (Berlin, Sato, Jastrowski, Woods, & Davis, in preparation).

The case presented in the reviewed article involved a 6-year-old boy child with severe aggressive behavior toward others and his punitive mother. The mother reported that she felt embarrassed and anxious about her son's aggression. Treatment included a combination of Parent-Child Interaction Therapy (PCIT; Hembree-Kigin & McNeil, 1995)—an in vivo parent behavior training protocol used to teach new skills, and ACT used as a way to reduce the psychological barriers that would restrict new skill acquisition. Examples of ACT interventions, such as "In a world where it is possible for you to choose what sort of life your son would have, what would that look like," were given to illustrate valuing, willingness, commitment, and self-as-context. Mindfulness and defusion procedures were incorporated with the *planned ignoring* and other components of the PCIT. Treatment continued for approximately 3 months. At both termination and 1-year follow-up, overt behavioral outcomes included a decrease in "Andrew's" levels of aggression and non-compliant behavior, as well as an increase in his mother's pursuit of valued activities. In terms of symptomatology, the mother reportedly felt less anxiety and more confident out in public with him.

Greco and Eifert (2004) also laid the theoretical groundwork for integration of ACT and/or acceptance-based methods into existent family therapies for parent-adolescent conflict. First, they discuss the traditional CBT-based, Problem-Solving and Communication Training (PS/CT), which is a means to build interpersonal family skills. PS/CT has been shown to be more efficacious than a wait-list control, although it does not appear to work well in families with children that have attention-deficit hyperactivity disorder (ADHD). Since Greco and Eifert conceptualize the function of many forms of family conflict as avoidance of negative private experience, they propose that acceptance and exposure would facilitate positive outcomes with PS/CT. Furthermore, they go on to explain various ways that Integrative Family Therapy (IFT) may incorporate acceptance procedures. Although IFT protocols may utilize reframing adapted from *empathic joining* or *unified detachment* exercises found in Integrative Couples Therapy,

treatment could just as easily incorporate creative hopelessness, mindfulness, and valuing interventions frequently used in ACT. Alternative acceptance practices, such as mindfulness skills taught in Dialectical Behavioral Therapy (DBT), are also introduced. Greco and Eifert expand on the notion that change-based interventions—such as PS/CT—may be more efficacious if they are integrated with acceptance- and/or values-based interventions.

Conclusion and Discussion

Summary

The ACT community has a good start on published research with youth and parents and results seem promising. Table 1 presents the work to date. Information about the psychopathology/problem behavior studied, type of article, study design, whether it is published, sample size, age range, treatment population, whether the protocol includes a parenting component, and citation are included. All together, there are four empirical articles published using ACT with adolescents, and there are two which used children in young- or middle- childhood. Of these, four are case studies, one is an uncontrolled study, and one is a randomized controlled trial.

Table 1

Summary of Published ACT Literature with Children, Adolescents and Parents

ACT with Children and/or Adolescents					
Focus	Authors	Type	Parents	N	Age[1]
Anorexia	Heffner et al.. 2002	Case Study	Yes	1	15
	Hayes & Pankey 2002	Theoretical	No	--	All
	Orsillo & Batten 2002	Theoretical	No	--	All
	Wilson & Roberts 2002	Theoretical	No	--	All
Anxiety	Greco et al. 2002	Theoretical	Yes	--	All
Chronic Pain	Wicksell, Dahl et al. 2005	Case Study	Yes	1	14
	Wicksell, Melin, Olsson 2005	Uncontrolled Pilot	Yes	14	13-20
General	Murrell, Coyne, Wilson 2005	Theoretical	Yes	--	All
Medical Settings					
	Robinson et al. 2005	Theoretical & Case Study	No	-- 1	All 7
Sexual Risk Behavior					
	Metzler et al. 2000	Randomized Controlled Trial	No	339	15-19

ACT with Parents

Focus	Authors	Type	N	Child Age[1]
Autism	Blackledge & Hayes 2006	Uncontrolled Group Study	20	All
Handicaps				
	Biglan 1989	Theoretical & Case Study	1	All
	Singer et al. 1989	Theoretical & Review of Controlled Groups	49	All
Impaired Parenting				
	Coyne & Wilson 2004	Theoretical & Case Study	-- 1	All 6
	Greco & Eifert 2004	Theoretical	--	

Note. **[1]Age in years.**

A common trend is to rely upon parents in therapy, given their vital role in the lives of children and adolescence. The only exception to inclusion of parents in published studies has been with adolescent sexual risk behavior, perhaps because of confidentiality and the delicate nature of the issue. Whether or not their children have a diagnosis, though, parents significantly contribute to the environment that their child grows in. In the context of therapy, parents can create an environment that promotes treatment goals; that is, if they are included in adjunct or conjoint therapy with their child. The published studies to date have supported the use of parents as an aid to therapeutic progress—it seems appropriate to continue this tradition.

Recommendations

The body of research on ACT with children, adolescents, and parents has come a long way in the past decade, although there is plenty of room for expansion. Current ACT interventions have been designed for several disorders and risk behaviors that are costly to the life of youth. Despite this, no interventions to date have been published that directly address several major childhood disorders, such as depression, anxiety, ADHD, or oppositional-defiant behavior. Fortunately, theoretical groundwork has been laid out for many of these problems, which will make the work of implementing these programs easier.

One factor that has slowed the progress of empirical outcome work is the issue of measurement. Treatment measures should reflect the acceptance and valuing components of ACT, not just traditional measures of symptomatology. Clients often present for the purpose of alleviating distress; however, the main treatment goals in ACT are to further develop repertoires of valued behavior, as well as to decrease avoidance and fusion. Therefore, any assessment package used to evaluate the treatment should include not only symptomatology—the current standard of treatment efficacy in scientific literature—but also relevant measures of functional impairment, valued-living, avoidance, and fusion. Many treatment protocols did include measures of functionality, although some did not.

A related concern is measures to track such progress. There are few validated assessments to measure change in avoidance, fusion, and valuing in ACT for children. Adequate reliability and validity has been found for the Child Acceptance and Mindfulness Measure (CAMM; Greco, Dew & Baer, 2005), and the Avoidance and Fusion Questionnaire for Youth (AFQ-Y; Greco, Murrell, & Coyne, 2005). For a review of the development and properties of each of these measures, see Greco, Ball, Dew, Lambert, & Baer, in review). It appears there are no standardized measures of valuing for children, although several methodologies were proposed in Murrell, Coyne, and Wilson or have been used (Heffner et al., 2002; Wicksell, Dahl et al., 2005). Several other measures of for use with ACT and adults have been assembled in a package by Ciarrochi and Bilich (no date), although none of the instruments specifically address the uniqueness of the situations presented for parents.

The most frequent study designs have been case studies and uncontrolled group-design studies. However, in order to compare to gold-standard for treatment studies found in the bulwark of psychology journals, researchers need to use larger samples and controlled designs, such as the integrative model created by Metzler et al. (2000). Although this may be expensive and is not always feasible, such treatment studies provide the highly-credible standard that is lacking in research on ACT with children, adolescents, and parents.

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A One Year Study Of Adolescent Males With Aggression and Problems Of Conduct and Personality: A comparison of MDT and DBT

Jack A. Apsche, Christopher K. Bass and Marsha-Ann Houston

Abstract

This study examines the effectiveness of Mode Deactivation Therapy, (MDT) and Dialectical Behavior Therapy, (DBT) in a Residential Treatment Center for adolescent males. All clients were admitted to the same Residential Treatment Center. Clients presented with physical aggression, suicidal ideation, with mixed personality disorders/traits. One group of clients was treated with MDT, while the other group received DBT treatment.
Keywords: Mode Deactivation Therapy (MDT), Dialectical Behavior Therapy (DBT), Treatment Adolescents, Conduct Disorder, Personality Disorders, Aggression, Suicidal Ideation.

Introduction

Mode Deactivation Therapy, (MDT) was developed by Apsche (2004,2006) to treat issues among adolescent clients that were not successfully addressed in previous treatment events. These adolescents had complex topologies and were heterogeneous in their complex problems. In numerous studies, Linehan (1993) has shown that DBT can be effective in treating Borderline Personality Disorder in adult females. In a one year randomized study, Linehan, et. al., (1991), (who recently reported that DBT is effective in treating *suicidal* adolescents) found that DBT significantly reduced psychiatric inpatient stays and lessened parasuicidal behavior. Its use also encouraged treatment compliance. Miller, et.al., (2006) found DBT effective in reducing suicidal ideations in adolescents being treated in an inpatient setting.

Apsche, Siv & Matteson, (2005) presented a case study comparing the effects of MDT and DBT. It appeared that MDT reduced physical aggression and self injurious behavior; whereas DBT, in this case, had been less than effective. Apsche & Bass, (2006) presented a study comparing 40 adolescent males presenting with aggression and suicidal ideations. MDT was significantly more effective than DBT treatment in this study. For a complete review of MDT, see Apsche, (2006). For a complete review of DBT, see Linehan, (1993).

The sample size for each group type, MDT and DBT, was calculated based on the potential residential length of stay. Each group participant was randomly assigned to groups based on a census of 30. Since this was a clinical study, there were no study drop-outs. Also, due to the nature of the residential treatment center, the clients in the study were not homogenous and presented with more severe behavioral problems than target populations in typical research therapy. Kazdin & Weisz (2003).

Written informed consent was obtained from all of the clients' parents or guardians. The sample was composed of twenty adolescent males, ten for each group, within ages ranging from 15-18, (mean=16.1 MDT 15.9 DBT.)

Method

Participants

The sample was comprised of 20 male adolescents at a residential treatment center. All subjects were referred to the residential treatment center for anger, aggressions, and externalizing problem behaviors. The clients were referred to their treatment group randomly. The first client assignment was to the DBT group and was determined by a "coin toss". The second assignment was to the MDT group, followed by DBT client assignment on an alternating basis, until each group was filled. The DBT group

therapists were all trained in DBT at the official DBT training center. The MDT group therapists were trained by the creator and developer of MDT (the first author of the paper).

Dialectical Behavior Therapy

A total of ten male adolescents were assigned to the DBT group. The group consisted of African Americans, 3 European Americans and 1 Hispanic American, the principal Axis I diagnosis was conduct disorder (5), Oppositional Defiant Disorder (4) and Post Traumatic Stress Disorder (6). Axis II diagnoses for the group included Mixed Personality Disorder (3), Borderline Personality traits (3), and Narcissistic Personality Traits (2), and Dependent Personality Disorder (2). DBT consisted of weekly individual therapy and at least one DBT skills group per week.

Mode Deactivation Therapy

A total of ten male adolescents were assigned to the MDT condition. The group was comprised of 5 African Americans, 4 European Americans, and 1 Hispanic American, with an average age of 15.7. The principal Axis I diagnosis for this group included Conduct Disorder (6), Oppositional Defiant Disorder (2), Post Traumatic Stress Disorder (6), and Major Depressive Disorder, primary or secondary (1). Axis II diagnoses for the group included Mixed Personality Disorder (4), Borderline Personality traits (4), and Narcissistic Personality Traits (1), and Dependent personality Disorder (1). The MDT condition used the methodology described earlier in this paper.

Table 1. Composition of both treatment groups

Axis I	**DBT**	**MDT**
Conduct Disorder	5	6
Oppositional Defiant Disorder	4	2
Post Traumatic Stress Disorder	6	6
Major Depression	0	1
Axis II		
Mixed Personality Disorder	3	4
Borderline Personality Traits	3	4
Narcissistic Personality Traits	2	1
Dependent Personality Traits	2	1
Avoidant Personality Traits	0	0
Race		
African American	6	5
European American	3	4
Hispanic/Latino American	1	1
Total	10	10
Average Age	15.9	16.1

Instruments

Pre and Post treatment assessments involved a battery of self-report measures targeting multiple risk factors. The baseline (pre-treatment) measure of physical aggression indicated the average number of incidents that occurred during the first 60 days following admission; the post-treatment measure was the incident occurrence rate during the 60 day period prior to discharge. In addition, key measurements of physical aggression used in this study consisted of Daily Behavior Reports and Behavior Incident Reports.

The Daily Behavior Reports and Behavior Incident Reports were completed by all levels of staff, professional and paraprofessional, across all settings of the residential treatment program (e.g., schoolroom,

psycho-educational classes, treatment activities, residential dormitories, etc.). The Behavior Incident Reports were only completed following the occurrence of serious or critical incidents; namely, acts of physical aggression. Inter-rater reliability in the use of the measures was determined by independently totaling the number of physical aggression incidents on both the Daily Behavior Report cards and the Behavior Incident Report forms and calculating the percentage of agreement of the data. The agreement for this study was at the 96% level.

The self-report measures consisted of the following assessments which were used to determine the clients' state in pre and post treatment phases. The Beck Depression Inventory, (BDI) (Beck and Beck, 1972; Beck et al., 1961) (designed to measure depression), and the Reynolds Suicidal Ideation Questionnaire (SIQ) (Reynolds, 1988), used to assess changes in suicidal ideation pre and post treatment. Subjects completed these measures upon admission and at discharge.

Following the subjects' completion of one year of treatment, the numbers of incident reports filed by the staff were calculated for both MDT and DBT groups.

Table 2. Descriptive Statistics of Measures for MDT and DBT Groups for Baseline and Post-treatment Results

Descriptive Statistics

Measure	Tx Type	N	Mean	Std. Dev.	Std. Error	Range Min	Range Max
Baseline Physical Aggression	DBT	10	12	2.48	.18	1	14
	MDT	10	11.8	2.32	.14	1	14
	Total	20	23.8	2.50	.166	1	14

In this first analysis, the Descriptive Statistics show that both types of treatment, Mode Deactivation Therapy and Dialectical Behavior Therapy, had positive effects of reducing rates of physical aggression over the course of treatment.

Mode Deactivation Therapy showed a statistically significant reduction in rates of physical aggression from baseline to post-treatment. MDT showed a reduction of 92.23% in Physical aggression compared to DBT at 27.9%. Post-treatment rates of physical aggression were 1.05 (incidents per month) for MDT and 8.76 (incidents per month) for DBT. The results clearly show that MDT produced significantly superior results when compared to DBT. These differences in magnitude of effect are graphically represented in Figure 1.

Table 3
Comparison of Post-Treatment Incident Average of Aggressive Incidents for Both Treatment Groups

	MDT		DBT	
	Post-Treatment Monthly Avg.	Percent reduction	Post-Treatment Monthly Avg.	Percent reduction
Physical Aggression	**1.05**	**92.23%**	**8.76**	**27.9%**

Again, the measurements used were the Beck Depression Inventory (BDI), (Beck and Beck, 1972; Beck, et al. 1961) which is designed to measure depression and the Reynolds' Suicidal Ideation Questionnaire (SIQ) (Reynolds, 1988 to assess the change in suicidal ideation pre and post-treatment. Subjects were administered these measurements at three time intervals. Results are shown in Table 4 and Table 5, and the mean scores are shown graphically in Figures 1 and 2.

Table 4.
Means and Standard Deviations on Assessment Measures at Three Time Points By Treatment Groups

	MDT						DBT					
	Baseline		3 Months		6 Months		Baseline		3 Months		6 Months	
	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD
BDI-II	38.4	**14.25**	**14.6**	**9.16**	**8.9**	**6.1**	**36.9**	**19.21**	**18**	**14.3**	**13.1**	**12.90**
SIQ-HS	**58.4**	**29.19**	**10.9**	**14.43**	**7.0**	**7.20**	**58.2**	**45.38**	**19.2**	**18.8**	**2.89**	**13.16**

Note: All baseline comparisons between groups were non-significant (p> .05)
BDI-II = Beck Depression Inventory 2nd Edition; SIQ-HS= Suicidal Ideation Questionnaire High School Form; MDT= Mode Deactivation Therapy; DBT=Dialectical Behavior Therapy

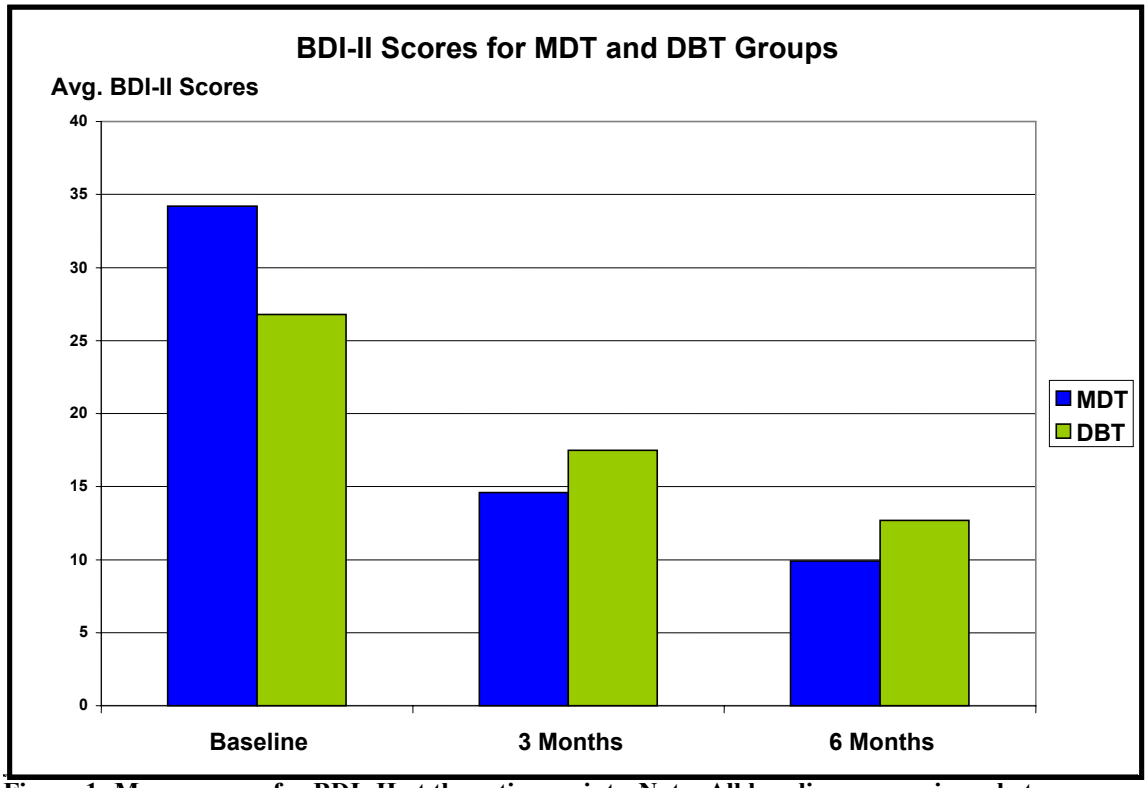

Figure 1: Means scores for BDI- II at three time points. Note: All baseline comparisons between groups were non-significant (p> .05) BDI-II = Beck Depression Inventory 2nd Edition; MDT= Mode Deactivation Therapy; DBT=Dialectical Behavior Therapy

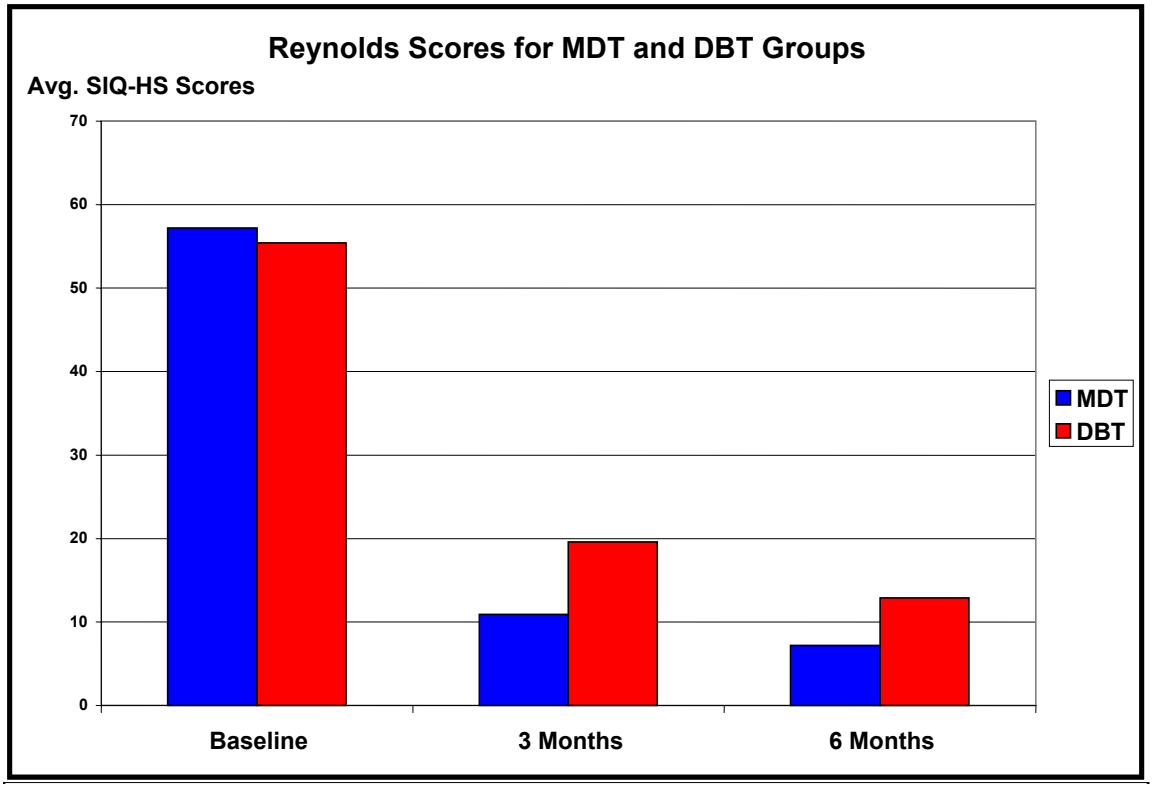

Figure 2: Mean Scores for SIQ-HS at three time points. Note: All baseline comparisons between groups were non-significant (p> .05) SIQ-HS= Suicidal Ideation Questionnaire High School Form; MDT= Mode Deactivation Therapy; DBT=Dialectical Behavior Therapy

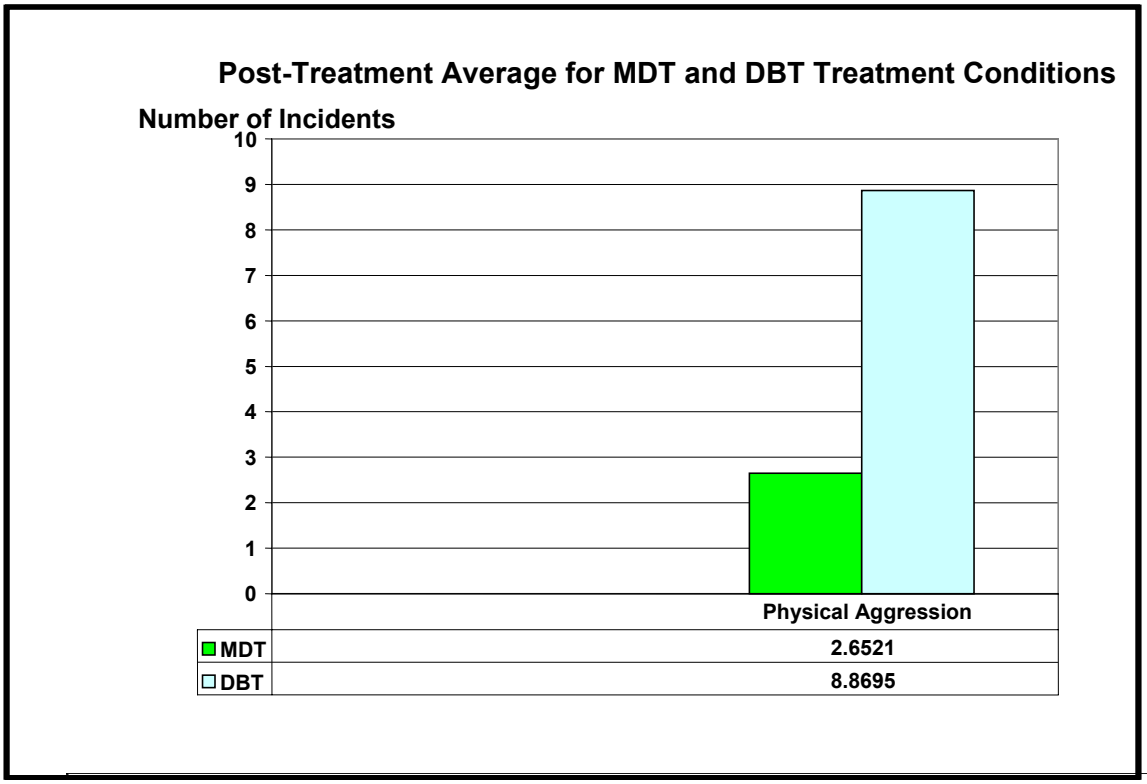

Figure 3. Baseline Avg. of Physical Aggression for MDT vs. DBT

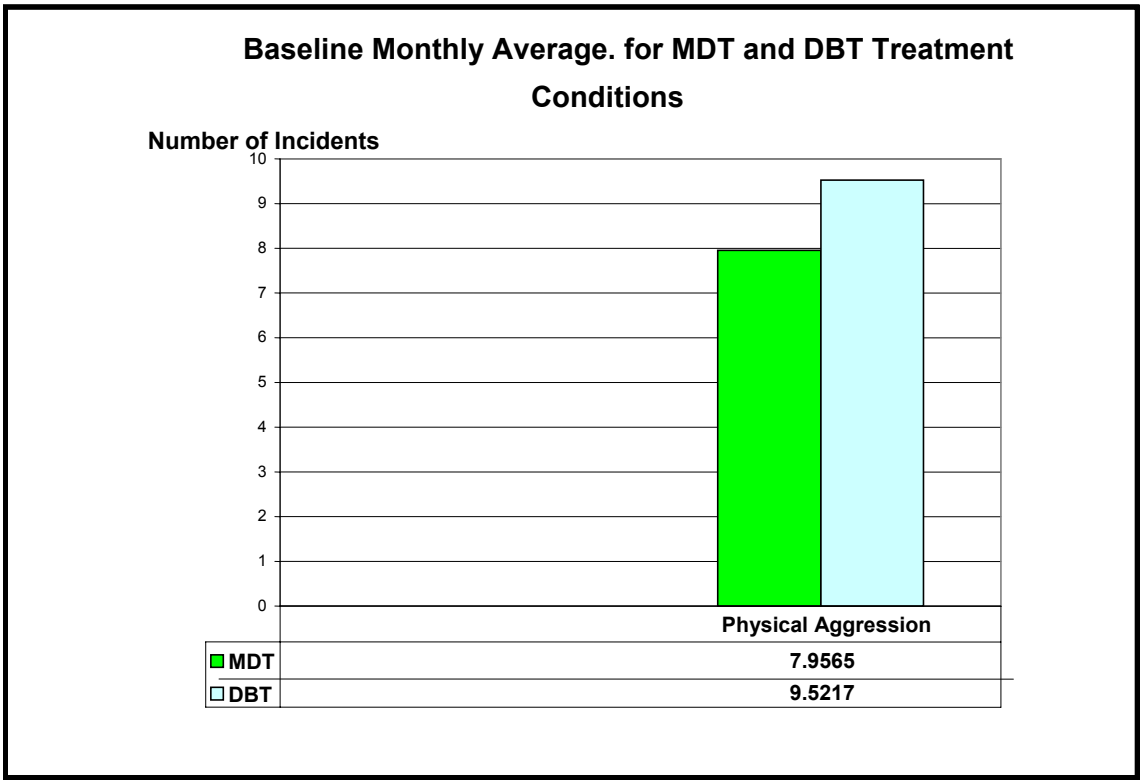

Figure 4. Baseline Avg. of Physical Aggression for MDT vs. DBT

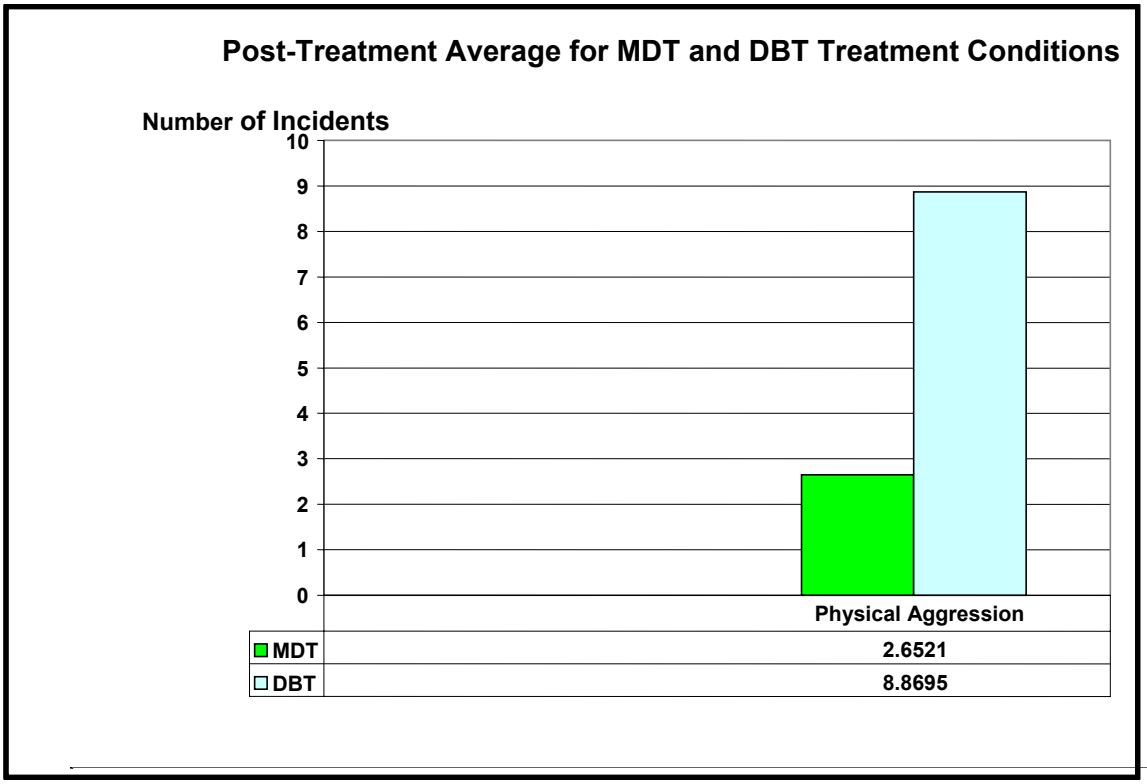

Figure 5. Post-Treatment Avg. for Physical Aggression and Therapeutic Holds for MDT vs. DBT

Results

This study was initiated to compare Mode Deactivation Therapy (MDT) and Dialectical Behavior Therapy (DBT) in the treatment of aggressive adolescent males in residential treatment. The analysis of the Daily Behavioral reports, which indicated a number of observed aggressive acts, was compiled; statistical analysis of the results ensued. It was found that all participants benefited from treatment regardless of theoretical orientation (see Figure 1).

The baseline average rate of aggression across all groups was 23.8 with a total standard deviation of 2.50 and standard error of .16. The MDT group had a 92.23 percent reduction in rate of aggression, with a post treatment mean of 9.80, with a standard deviation of 2.32 and standard error of .14. The baseline mean across both groups was 7.31 with a total standard deviation of 5.14 and standard error of .108.

On the BDI-II both DBT and MDT performed well in measurements of the difference between baseline and post-treatment rates of depression. The baseline mean BDI-II scores of were 36.9 DBT and 38.4 MDT; post-treatment scores were 13.1 and 8.9, with standard deviation of 6.1 and 12.90, respectfully. Data suggests that MDT is more effective in reducing symptoms of depression than DBT in this study.

On the SIQ both DBT and MDT performed well in measuring the difference between baseline and post-treatment rates of depression and suicidal ideation. Data shows the baseline mean SIQ scores of 55.4 DBT and 57.2 MDT; and post-treatment scores of 12.97 and 7.20, with standard deviations of 13.66 and 7.93, respectfully. These suggest that MDT is effective in reducing symptoms of depression and suicidal ideation.

Discussion

Findings indicate that Mode Deactivation Therapy (MDT) may achieve superior results in reducing physical aggression in conduct-disordered and personality-disordered youth in a residential treatment setting. While both MDT and DBT reduced physical aggression in these adolescents; MDT was significantly more effective in reducing aggression in this particular study. These findings also support earlier studies indicating that MDT can be used as an effective treatment for reducing depression and suicidal ideation, as shown by BDI and SIQ results.

Participating therapists shared the comparable professional degrees, training and clinical experience in each of the two methodologies. Training and supervision was provided by a doctorate level clinician for both groups. The MDT group was trained by the developer of MDT in order to reduce confounds that may have been produced by additional trainers.

The authors do not propose that MDT is more effective than DBT in any manner except in this particular, "real world study." The authors also do not propose that MDT is effective with any population other than that represented in this or other MDT studies, Apsche, (2006).

The strength of the outcomes could be further enhanced with the inclusion of additional outcome measures and, ideally, with long-term follow-up of the youth who participated in the study.

Use of MDT demonstrated a significant decrease in all levels of behavior and psychological distress.

It is important to note that the authors do not purport that MDT will generalize to any groups other than adolescents with conduct and personality disorders. As in many clinical trials, the client population was not fully homogenous and the clients' issues were multi-problem focused. Also, as Kazdin & Weiss, (2003) suggested that clinical trials and studies tend to include participants who have more severe disorders,

not volunteers and are often coerced into treatment by adjudication and referring agencies. Both groups in this study presented with issues which were multi-problematic focused, with complex diagnoses on both DSM IV Axis I and Axis II. Many participants had no family involvement or had absentee parents. Clients in both were referred to treatment due to court order and were considered coerced.

It is important to understand that clinical studies pose more difficulties than University based research studies; however, "real world" study is done with "real clients" in clinical settings. Real world studies are important in the development and validation of evidenced based treatment.

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Conceptualization and Treatment of Kleptomania Behaviors Using Cognitive and Behavioral Strategies

Carolynn S. Kohn

Abstract

Kleptomania is a serious disorder that affects a small percent of the general population and a larger percent of the clinical population. It is frequently accompanied by other co-occurring problems, including depression, anxiety, obsessive-compulsive disorder, and substance abuse. Currently, little research on effective treatments exists; although behavioral and cognitive-behavioral treatments show great promise. Methods of behavioral assessments and intervention, as well future direction for research, are discussed.
Keywords: kleptomania, cognitive behavior therapy

Background

The DSM-IV-TR (American Psychological Association, 2000) classifies kleptomania as an impulse control disorder in which the essential feature is a recurring failure to resist impulses to steal items, even though those items are not needed for personal use or their monetary value (Criterion A). The individual experiences an increasing sense of tension just prior to the theft (Criterion B) and feels pleasure, gratification, or relief when committing the theft (Criterion C). The stealing is not committed in order to express anger or vengeance, is not done in response to a delusion or hallucination (Criterion D), and is not better accounted for by conduct disorder, a manic episode, or antisocial personality disorder (Criterion E). Historically, kleptomania has been considered a disorder seen mainly in white, upper- and upper middle-class women (Abelson, 1989; Goldman, 1991; Grant & Kim, 2002a, 2002b; McElroy, Hudson, Pope, & Keck, 1991; Sarasalo, Bergman, & Toth, 1996). With few exceptions (Kohn & Antonuccio, 2002; Wiedemann, 1998), comparatively little is known about males or individuals of ethnic minority or lower economic statuses. Given that, Criterion A may be an artifact of studying mainly upper-class, white females, because it presumes that only individuals who can otherwise afford the stolen items should be considered to be exhibiting kleptomania behaviors; recent research belies this notion (Kohn & Antonuccio, 2002; McElroy, Pope, Hudson, Keck, & White, 1991).

Prevalence & Diagnosis

A consensus about the origins and development of kleptomania has remained elusive to the field of psychology. Although this is due in part to the usual theoretical differences in perspective, it is exacerbated by a paucity of research into the disorder and because kleptomania appears to be a relatively rare problem, with an estimated prevalence rate ranging from 0.6 to 0.8% (Dannon, 2002; Goldman, 1992; Lepkifker, Dannon, Ziv, Iancu, Horesh, & Kotler, 1999). However, rates as high as 7.8% have been found when clinical populations are examined (Grant, 2006a). Different researchers have concluded that from none to a quarter of all shoplifters may suffer from kleptomania (Bradford & Balmaceda, 1983; Goldman, 1991; McElroy, Hudson, Pope, et al., 1991). Others suggest that kleptomania may be more common than previously thought, but is under-diagnosed due to secrecy, bias, or constricted diagnostic criteria (Abelson, 1989; Kohn & Antonuccio, 2002; McElroy, Pope, et al., 1991; McElroy, Keck, & Phillips, 1995; Murray, 1992). Some researchers have likened kleptomania to theft and refute the notion that there are psychological components involved (Bresser, 1979 as cited in Wiedemann, 1998). Others view kleptomania as part of an affective spectrum disorder (McElroy, Hudson, et al., 1991), and still others tend to classify kleptomania as more of an obsessive-compulsive disorder (Grant, 2006a; Tynes,

White, & Steketee, 1990). Finally, some researchers view kleptomania as an addiction spectrum disorder (Wiedemann, 1998), along the lines of pathological gambling. Because kleptomania is often diagnosed in conjunction with many of these other disorders, it is unclear whether it is a symptom of these other disorders or a separate but co-morbid problem. What is clear, however, is that symptoms of kleptomania rarely occur in isolation, and frequently occur in conjunction with other mental health problems. Additionally, there exist higher rates of affective and substance use disorders in first-order family members of individuals with kleptomania (Grant & Kim, 2002a) and reports of social isolation, dysfunctional cognitions, and high levels of perceived stress are also associated with increased frequency and/or intensity of kleptomania behaviors (Grant, Kim, & Grosz, 2003; Kohn & Antonuccio, 2002).

Behavioral and Cognitive-Behavioral Etiological and Assessment Models

Behavioral and cognitive-behavioral models of the etiology of kleptomania (e.g., Gauthier & Pellerin, 1982; Kohn & Antonuccio, 2002) have largely supplanted psychoanalytic models (e.g., Cupchik & Atcheson, 1983, as cited in McNeilly & Burke, 1998; Fullerton & Punj, 2004) and are generally complementary to biological models (e.g., Dannon, 2002; Grant, 2006a; Grant & Kim, 2002b; Kohn, Kalal, Kastell, & Viera, 2006). For example, Grant and Kim (2002b) propose a psychobiological model of etiology that combines neurochemistry with behavioral theories of classical and operant conditioning. They posit that certain individuals become conditioned to react to certain stimuli or cues (e.g., desired items) or to crave or desire stealing because of the rewarding sensation that follows it, both of which cause changes in the brain. This is largely complementary to the behavioral and cognitive etiological models of kleptomania, without the requisite need for an exact diagnosis.

In fact, a particular strength of the cognitive and behavioral models is the use of functional assessments, functional analyses, and operationally defined behaviors (e.g., Haynes, Leisen, & Blaine, 1997; Haynes & O'Brien, 1990) that greatly reduce the need to rely on a singular etiological model or specific diagnosis prior to beginning treatment (Hickey, 1998). Often, kleptomania is conceptualized as a set of unwanted behaviors which are the result of operant and respondent conditioning, shaping, behavioral chaining, distorted cognitions, and impoverished coping skills (e.g., Gauthier & Pellerin, 1982; Kohn & Antonuccio, 2002), all of which are treatable within a behavioral framework once the underlying functions and maintaining consequences are identified.

The behavioral framework is ideal for conceptualizing the development and maintenance of kleptomania behaviors. For example, assume an individual steals some item that has a strong associated meaning through repeated pairings in the past (e.g., through advertisements, learning history of the individual, etc). The stealing behavior is positively reinforced through the gain of that tangible item, sense of gratification, or other positive emotion; it is also negatively reinforced when preceding anxiety or other negative thoughts and feelings decrease or are completely eliminated. If this individual experiences minimal or no negative consequences or punishment, then the likelihood that the behavior will reoccur is increased. As the behavior continues to occur, stronger antecedents or cues become contingently linked with it, in what ultimately becomes a powerful behavioral chain. Additionally, ever more bold and daring stealing behaviors may be shaped if reinforcement of the stealing behaviors continues to occur in the absence of any type of punishing consequences. Eventually, individuals with kleptomania come to rely upon stealing as a way of coping with stressful situations and distressing feelings, which serve to further maintain (via positive and negative reinforcement) the behavior and decrease the number of available alternative coping strategies. According to cognitive-behavioral theory, both antecedents and consequences may either be in the environment or in the mind, as with cognitions. For example, Kohn and Antonuccio (2002) described a client's antecedent cognitions, which included thoughts such as "I'm smarter than others and can get away with it"; "they deserve it"; "I want to prove to myself that I can do it"; and "my family deserves to have better things." All of these thoughts were precipitated by additional

antecedents further back in the behavioral chain that were thoughts about family, financial and work stressors, or feelings of depression. "Maintaining" cognitions provided additional reinforcement for stealing behaviors and included feelings of vindication and pride, for example: “score one for the ‘little guy’ against the big corporations” and “I knew I could get away with it”. Although those thoughts were often followed by feelings of remorse, this came too late in the operant sequence to serve as a viable punisher.

Self-report questionnaires can be useful adjuncts to a functional assessment examining the antecedents, consequences, and correlates of kleptomania behavior, particularly given the high co-morbidity rate of affective, impulse control, substance use, and obsessive-compulsive disorders (Grant, 2006a). Measures such as the Beck Depression Inventory-II (BDI-II; Beck, Steer, & Brown, 1996) and the Beck Anxiety Inventory (BAI; Beck & Steer, 1993) can help identify the severity (i.e., dimensional aspects) of depressive and anxiety symptoms. Discussions of the Abstinence Violation Effect (AVE; e.g., Larimer, Palmer, & Marlatt, 1999) may also help to elicit dysfunctional cognitions. Research indicates that among shoplifters, individuals who experience stable, global feelings of shame (e.g., “I’m a bad person”) are more likely to continue stealing; whereas those who experience situation-specific feelings of shame (e.g., imagining getting caught stealing when one is an otherwise “good” person) are more likely to stop (Tibbetts, 1997). Finally, circumstances that may decrease motivation for change (Miller & Rollnick, 2002), including personality disorders such as antisocial personality disorder (e.g., Grant & Kim, 2002b; Kohn & Antonuccio, 2002) should be identified and appropriately addressed.

Behavioral and Cognitive-Behavioral Treatment Model

Although many of the disorders that co-occur with kleptomania behaviors are frequently treated with medication, to date there have been no large-scale controlled treatment studies for kleptomania. Selective Serotonin Reuptake Inhibitors (SSRIs), antiepileptics, and opiod antagonists have all been used to treat kleptomania with varying results (Burstein, 1992; Dannon, 2003; Dannon, Iancu, & Grunhaus, 1999; Grant & Kim, 2002b; Kraus, 1999). However, pharmacological interventions are frequently accompanied by side effects (e.g., Antonuccio, Danton, DeNelsky, Greenberg, & Gordon, 1999; Dalfan & Stewart, 2001; Grant & Kim, 2002b; Kindler, Dannon, Iancu, Sasson, & Zohar 1997), which individuals may find disagreeable, leading to poor compliance with the medication (e.g., Dannon, 2003; Dannon, et al., 1999). Proponents of pharmacological treatments of kleptomania behaviors maintain an idiographic stance to the treatment of kleptomania suggesting that “[t]reatment should begin with understanding the particular subtype of kleptomania” (Grant, 2006a, p.85).

Fortunately, a growing body of research suggests the effectiveness of using several fundamental components of behavior and cognitive-behavioral approaches to treat kleptomania and co-occurring behavior problems (e.g., Gauthier & Pellerin, 1982; Glover, 1985; Grant, 2006a; Kohn & Antonuccio, 2002), including covert sensitization, shaping, behavioral chaining, problem-solving, cognitive restructuring, and homework (O’Donohue, Hayes, & Fisher, 2003). A thorough functional analysis drives the unique implementation, format, and structure of each of these techniques for each individual (Haynes & O’Brien, 1990; Kanfer & Saslow, 1965; Kohn & Antonuccio, 2002). For example, covert sensitization, the “pairing of imagined consequences of stealing with the desire to steal” (Goldman, 1991, p. 993), can use kleptomania-specific consequences (e.g., getting arrested, going to jail), rather than the commonly used images of nausea or vomiting (e.g., Cautela, 1966, Glover, 1985) as the aversive event, with high rates of success (Gauthier & Pellerin, 1982; Kohn & Antonuccio, 2002). In this approach individuals describe the scenario aloud, in vivid detail, allowing their anxiety to increase until they reach a predetermined end-point, such as spending time in jail or the conclusion of a court trial. Repeated pairings of aversive imagined consequences can lead to a decrease in expressed stealing behaviors, but also must be accompanied by reinforcement of appropriate behaviors.

A hallmark of behavioral and cognitive-behavioral interventions is the use of the scientist-practitioner model, and the systematic measurement of treatment progress which, albeit, relies largely on self-report. As such, an individual's initial treatment gains can be assessed using Improvement Scaling (IMS; Smith, Cardillo, Smith, & Amezaga, 1998), a versatile self-report measure tailored to each client's treatment goals that has been successfully utilized in the assessment and treatment of kleptomania (Kohn & Antonuccio, 2002). The Kleptomania Symptom Assessment Scale (K-SAS; Grant, 2006b) a self-report measure, appears to have adequate psychometric properties, and is designed to assess change in cognitions, behaviors, and urges during treatment. The BDI-II (Beck, et al., 1996) and BAI (Beck & Steer, 1993) can also be used to gauge increases and decreases in depressive and anxiety symptoms.

Conclusion and Implications

Although behavior and cognitive-behavioral theories have much to add to our knowledge of kleptomania, research regarding kleptomania is still in its early stages. Few behaviorists appear to be investigating or treating kleptomania, as such, the bulk of the research has occurred in the area of prevalence estimates and biological etiology and treatment of kleptomania. Historically, kleptomania has been considered a disorder mainly seen in white, upper- and upper middle-class women. It is possible that the current criteria for kleptomania only capture a limited segment of the population (e.g., upper middle class, white women) and ostensibly ignores others that may be suffering from kleptomania, but instead are labeled as criminals (e.g., lower SES, males). Therefore, we suggest that researchers continue to examine the characteristics of those diagnosed with kleptomania, while not constraining themselves to the current, commonly accepted criteria. Including kleptomania in future Catchment or large population studies can help to provide more information about the disorder in an empirical, less self-selected manner. Moreover, although psychotropic interventions have shown some success, to date cognitive-behavioral interventions appear credible, effective, and safer, due of their lack of side effects, and thus should be considered the first line of treatment for kleptomania (Antonuccio, Burns, & Danton, 2002).

The idiographic nature of behavioral interventions, combined with the nomethetic nature of behavioral principles (e.g., Haynes & O'Brien, 1990), makes behavioral and cognitive-behavioral interventions highly advantageous for individuals struggling with kleptomania behaviors. Behaviorists have a powerful etiological and treatment theory but only a small amount of evidence currently exists in the published literature. Future research should continue to delineate the use of a functional analysis and assessment in the treatment of kleptomania, providing more detailed guidance for clinicians and researchers in the field.

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