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Externalizing Disorders and the Treatment of Child Anxiety: A Preliminary Study

Christopher J. Ferguson

University of Central Florida

Abstract

Recent research has suggested that individuals may respond to differing treatment approaches with varying degrees of success depending upon their personality characteristics. The current paper attempts to examine how a tendency to engage in externalizing behaviors, as measured by the Child Behavior Checklist, may impact on treatment success for anxiety in a sample of 71 children. Results lent preliminary support to the hypothesis that the presence of an externalizing behavior disorder in a child may interfere with treatment success for anxiety disorders.

Externalizing Disorders and the Treatment of Child Anxiety: A Preliminary Study

Much of the first century of modern psychology was spent in the development of theoretically derived treatment modalities for psychological problems. Ultimately this has led to a plethora of competing treatment approaches from which a practitioner may choose each with differing techniques and philosophies (Gurman & Messer, 1995). While this is advantageous in that the practitioner may be presented with multiple tools from which her or she may choose, this also may lead to some confusion in regards to the efficacy of vying treatment approaches. As such the last few years have seen an increased interest into studies for treatment outcome for both children and adolescents for internalizing and externalizing disorders. It was hoped that such studies might elucidate once and for all which treatment modalities might prove most effective. Surprisingly, most of these studies suggested that there were, in fact, no leading therapeutic approaches, and that all therapeutic modalities, including behavioral, cognitive, psychodynamic and even psychotropic medications produce roughly equal success rates (Elkin et al., 1989; Robinson, Berman, & Neimeyer, 1990; Silverman et al., 1999). Unfortunately little of this research focuses exclusively on child populations, and continued investigation into the efficacy of therapy and psychotropic medications in children focuses primarily on attention-deficit hyperactivity disorder (ADHD; Brown & Ievers, 1999) rather than on phobic or mood disorders. Nonetheless it is gradually being accepted that no one therapeutic intervention is generally superior to any other (Imber et al., 1990) for treatment of internalizing disorders.

This observation that varying treatment modalities appear to work equally well may be explained in two possible ways. The first of these is that any therapy is better than no therapy, and exactly what takes place in therapy is relatively unimportant so long as therapy happens.

This is, in essence, the “common factors” explanation of psychotherapy (Weinberger, 1995).

This explanation suggests that the “common factors” of psychotherapy, namely the caring therapist, optimism for success, a treatment plan, etc. are all that are necessary for treatment success. Indeed this is in keeping with research which suggests that even non-directive therapy (used as a control group) appears to work in the treatment of child phobias (Silverman et al., 1999) or that placebo treatment appear to work nearly as well as psychotherapy or psychotropic medication (Elkin, et al., 1989). However, it must be pointed out that this conclusion makes a potential error that is common to psychology and the social sciences: namely that group tendencies can be blindly applied to individuals. The “common factors” explanation assumes that everyone in such groups are attaining equal levels of success for each treatment modality, regardless of individual characteristics. Unfortunately, group data tend to blur the role of individuals in their own treatment. For instance, it may be true that different individuals are improving in behavioral psychotherapy than those improving in cognitive therapy or by the use of psychotropic medications. Unless looked for, studies of group data would not likely notice such subtle effects, and thus reach erroneous conclusions about group trends.

Alternatively, it may be argued that a number of characteristics of the individual client may effect the outcome of psychotherapy (Beutler, 1991). For instance a patient who is higher in intelligence and more comfortable with verbal exchange may do well in a cognitively oriented treatment, but may find a more behaviorally oriented treatment to be rigid and unrewarding. This may be as true for children as it is adults. Although many individuals may wish to think of children as equal in all qualities, and essentially blank slates, research is clear that children are actually quite different from each other in personality and temperament (Caspi, Henry, McGee, Moffitt, & Silva, 1995), intelligence (Bouchard, Lykken, McGue & Segal, 1991) and even

empathy (Hare, 1993). Exactly how children come to have such diverse abilities and temperaments, whether biological, sociological or simply a function of personality is beyond the scope of this paper. However, it may be that individual differences play an important role in treatment success. Similarly, the nature of a child's symptomatology, and potential combinations of symptoms from multiple disorders may have a moderating and potentially negative effect on treatment success. Research aimed at elucidating possible interacting mechanisms between therapeutic modality and the individual child client may be helpful to practitioners, clinicians and pediatricians as they seek to tailor treatment approaches to individual children. The alternative is a trial-and-error approach by which varying therapies or medications are attempted on the child with relatively little theoretical or empirical guidance to suggest how and why such efforts would work.

Treatment for Child Anxiety

It has been noted (Brown & Ievers, 1999) that the majority of treatment outcome studies for children have been for children with the diagnosis of ADHD. Relatively little attention has been paid to the treatment of phobic and other internalizing disorders. Studying the relative effectiveness of varying treatment modalities has been compromised somewhat by the tendency for many therapists to combine treatment methods, using an eclectic approach, rather than diligently following a single theoretical framework (Hill, 1989). Most psychotherapeutic approaches designed to treat phobic disorders have as a principle component exposure to the feared object (Silverman, et al., 1999). However, treatment approaches may differ in the extent to which the child's parents or the child he or herself may control the exposure process. Contingency management approaches for instance focus on parental initiated rewards for exposure behavior by the child. By contrast, self-control therapy is more cognitive, in that

greater emphasis is placed on the child's ability to self regulate his or her own exposure and approach behavior. Although, both contingency management and self-control therapy have received attention in the literature, empirical studies are sparse and often combine strategies, or rely on case reports, thus presenting an unclear or incomplete picture of treatment efficacy.

Kendall and Braswell (1982) attempted to discern if the cognitive component was an improvement over the behavioral contingency management. They studied 27 children (aged 8-12) with low self-control randomly assigned to a cognitive-behavioral, a behavioral, or an attention-control group. In this study self-control was measured by the Self-Control Rating Scale, and referred to an ability to refrain from impulsive behavior. Both the cognitive-behavioral and the behavioral therapy approaches were found to lower teachers' ratings of hyperactivity. However, only the cognitive-behavioral approach was found to increase teacher's ratings of self-control, or the child's self-concept of their ability to control their actions. The results of this study suggest that the cognitive components to cognitive-behavior therapy produce additive and positive effects. While this is an interesting and positive finding, it still is not clear that cognitive approaches are beneficial to all children. For example, it was not clear from this study if the intellectual or verbal capabilities of the children played a role in their treatment success.

Silverman et al. (1999) conducted a treatment comparison study for anxious children examining the treatment success of contingency management, self-control and educational support treatment. In this study, contingency management referred to an operant behavioral treatment in which parents of the child provided pre-determined reinforcers for a target behavior. Self-control treatment referred to a cognitive-behavioral approach that attempted to teach the child how to identify his or her symptoms of anxiety and develop the ability to control their

anxious symptoms through cognitive restructuring. Education support referred to a comparison treatment approach in which anxiety disorders were discussed, but no specific interventions were conducted with the child. As educational support was a non-directive treatment and did not specifically encourage exposure, the group of children who received this treatment approach were used as a control group. It was hypothesized that children in exposure based groups would demonstrate greater treatment success than those in the educational support treatment group. Similarly it was expected that self-control therapy would demonstrate greater success than contingency management, as a factor of the added cognitive component of that approach. Surprisingly, all three treatment groups demonstrated treatment success, with little difference between the three. The success of the educational support control group may be possibly explained in two fashions. The first factor which may have facilitated treatment success in that group, is that the therapy itself may have raised optimism and self esteem in the children and their parents, and this may have fostered self-initiated exposure. The second factor is simply that maturation may have naturally lessened some of the phobic symptoms regardless of therapy. Once again, however, it remains unclear which treatment approaches may be valuable to which clients. That not all clients in any of the treatment groups were successful leads to the question of how those clients differed from those who did succeed. Furthermore, it may be that client drop out from therapy may have been related to frustration with treatment modality. For example, a child with relatively poor self-control abilities may find self-control therapy to be frustrating and thus drop out. Ultimately it can be taken from this study that therapy for child phobic disorders works, but it is not clear for whom it works.

Barrett (1998) examined the addition of a family management component to cognitive behavioral treatment for child phobic disorders. Family management referred to fostering a

family's ability to identify problem behaviors, engage in problem solving as well as mutual support. The rationale for such an addition was that treatment of the child singularly may be less effective if the family unit continues to foster an atmosphere that promotes the child's phobic behavior. Compared to both a wait-list group and to cognitive behavioral therapy without family management, those children who received both cognitive behavioral therapy and family management demonstrated a greater degree of treatment success. This study is important in demonstrating an important interaction between family, child and therapy. As such, this study represents an increased degree of sophistication over many of the other studies available. Yet while involvement of the family into the therapeutic process is an important step, the specific role of the child has still been largely ignored.

A question that may be important for researchers and therapists to consider may be not only which treatment modality is more effective, but under what circumstances is one treatment modality more effective than another? Specifically, given the heterogeneity of the population of phobic children, which children would benefit from one treatment strategy compared to another, and what individual characteristics may be prognostic of treatment success or failure with the use of certain strategies? To date little research has been conducted on variables that may moderate the effectiveness of treatments for childhood anxiety disorders. It may be possible that many of the children who present to practitioners with phobic disorders may have other comorbid conditions, or even personality-related disturbances that may interfere with therapy. Thus even the child's temperament or personality may impact on treatment success. For example, although anxiety disorders have been found to have a significant degree of comorbidity with externalizing disorders (Clark, Smith, Neighbors, & Skerlec, 1994; Russo & Beidel, 1994), few studies have considered the impact which externalizing symptoms may have on treatment outcome. Indeed,

there is very little literature in regards to what child variables may moderate treatment success, either for treatment in general, or as a means for comparing the relative success of varying treatment modalities.

With the goal in mind of examining whether some children may respond to therapeutic interventions differently as a factor of their own behavioral characteristics, the purpose of the present study was to examine the role of children's externalizing behavior problems as a moderating variable for the treatment of phobia in children. Specifically, the role of externalizing behavior problems was considered in comparing the relative effectiveness of self-control therapy and contingency management as well as educational support in the treatment of specific phobias. Given that self-control therapy is more highly dependent upon internal regulatory systems that may or may not be possessed by specific children, it may be that this modality will be particularly vulnerable to impulsive or oppositional behavior on the part of the child. A child who demonstrates externalizing behavior problems may not be able to manage the cognitive skills necessary to organize and direct their own thoughts and behavior consistently. As such, cognitive self-control therapy may ultimately prove counter-productive for such children. In the current study it was hypothesized that externalizing behavior problems have a negative impact on treatment success across all treatment conditions. It also was hypothesized that externalizing behavior problems will predict significantly treatment failure in self-control therapy, relative to the contingency management and control conditions. This may be due to a block in the transfer-of-control from parents to children brought on by the inability of children to assume rational control of their own behavior. Transfer-of-control refers to the treatment goal of transferring the responsibility for improving target behaviors from the parent to the child. For instance, parents may initially control a target behavior through reinforcement of that behavior,

though it may be desirable for the child to ultimately demonstrate the ability to exercise self-control (thus transferring control from parent to child) over that behavior. For the purposes of this study, externalizing behavior problems were operationally defined by behaviors as measured by the externalizing sub-scale of the Childhood Behavior Checklist (Achenbach & Edelbrock, 1983). This study is viewed as important in the determination of specific utility of these cognitive-behavioral strategies for children with different levels of internal self-control. The ultimate goal of this study is to provide empirical data by which specific treatments may be matched to a child's unique requirements.

Methods

Participants

Participants of the study were 71 children and adolescents between the ages of 6 and 17 (mean age=10.37) who presented at a university sponsored child phobia program with a primary diagnosis of specific or social phobia. Thirty-seven of the subjects were boys and thirty-four were girls. Participants were referred to the clinic most often either by clinicians, school counselors and psychologists, or by self-referral. Although children referred to the clinic presented with a variety of symptoms and disorders, only those with a primary diagnosis of specific phobia or social phobia were included in this study.

Measures

Child Behavior Checklist (CBCL). The CBCL (Achenbach & Edelbrock, 1991) is designed to measure a variety of behavioral problems and social factors in children. The behavior problems portion of the CBCL consists of 118 items rated on a scale from 0-2, with 0 indicating not true for the child, 1 indicating somewhat true, and 2 indicating very true within past 6 months. Profiles have been revised and standardized in 1991 for boys and girls of age

ranges 4-11 and 12-18. Two global factors, Internalizing and Externalizing have been identified for the CBCL, with reported reliabilities of .87. Validity of the CBCL has been supported by its ability discriminate between clinically referred and non-referred children, as well as convergent validation with other behavioral measures. (Achenbach & Edelbrock, 1991). The Externalizing factor contains a number of items related to impulsivity and hyperactivity, and thus will be considered as a part of this study.

Anxiety Disorders Interview Schedule for Children (ADIS-C and ADIS-P). The ADIS-C/P (Silverman & Nelles, 1988) is a semi-structured interview schedule designed for the assessment of anxiety disorders in children and adolescents. Interviews are conducted with both children and their parents, from which a composite diagnosis is attained, as well as an indication of distress and interference. The ADIS has been found to have satisfactory reliability, both interrater (Silverman & Nelles, 1988) and test-retest (Silverman & Rabian, 1995), as well as good validity (Rabian, Ginsburg & Silverman, 1994). Composite ratings of the severity of diagnosis for phobic disorders, based upon child and parent interviews will be used as a primary outcome measure.

Revised Children's Manifest Anxiety Scale (RCMAS, RCMAS-P). The RCMAS (Reynolds & Richmond, 1978), consisting of child and parent versions, is a 37-item scale designed to measure anxious symptomatology. Responses are answered 'yes' or 'no'. The scale consists of a total score, an 11-item lie scale, and three factor scales, 'Physiological Anxiety', 'Worry/Oversensitivity' and 'Social Concerns/Concentration'. Reliability, internal consistency, and validity were measured extensively for total scale score, factor scales and the lie scale with all results within the satisfactory range (Reynolds & Richmond, 1978).

Fear Survey Schedule for Children-Revised (FSSC-R, FSSC-R/P). The FSSC-R (Ollendick, 1983) is an 80-item self-report measure, with both child and parent versions designed to measure the frequency, severity and type of fears experienced by children. Factor analysis revealed 5 factors for the FSSC, these being Fear of Danger and Death, Fear of Minor Injury and Small Animals, Fear of the Unknown, Fear of Failure and Criticism, and Medical Fears. Test-retest reliabilities for the FSSC have been reported at .81 to .89 at a one-week interval. Internal consistency has been reported at .94, and validity of the FSSC was found to be satisfactory (Ollendick, 1983).

State-Trait Anxiety Inventory for Children-Trait version (STAIC-T). The STAIC-T (Spielberger, 1973) is a 20-item self report measure is designed to assess relatively stable individual differences in anxiety proneness. Children are asked to respond on a three-point scale about general feelings of anxiety. Good reliability and validity have been reported (Spielberger, 1973).

Children's Depression Inventory (CDI). The CDI (Kovacs, 1981) is a 27-item self-report measure which includes items relating to the cognitive affective and behavioral symptoms of childhood depression. For each item, children are given three choices from which they select the one which best describes them over the past two weeks. Satisfactory reliability and validity have been reported (Kovacs, 1981).

Child Anxiety Sensitivity Index (CASI). The CASI (Silverman, Rabian, Fleisig & Peterson, 1991) is an 18 item self-report measure designed to assess sensitivity to aversive anxious symptoms in children by asking them to state how they view anxiety symptoms. Satisfactory reliability and validity have been reported (Silverman, Rabian, Fleisig & Peterson, 1991).

Procedure

Children were assessed using a structured interview, the Anxiety Disorders Interview Schedule (ADIS), with both the child and the parents. Children and parents also were administered a battery of self-report measures at pre-treatment, post-treatment and follow up conditions, including the Child Behavior Checklist (CBCL), Child Depression Inventory (CDI), Fear Survey Schedule for Children (FSSC), Revised Child Manifest Anxiety Scale (RCMAS), Child Anxiety Sensitivity Index (CASI), and State-Trait Anxiety Inventory for Children-Trait Version (STAIC-T).

Two main intervention strategies were employed in the individual treatment sessions. The first of these was contingency management, which stressed the importance of causal relationships between stimuli and behavior. Contingency management relied upon a child's parents as primary reinforcing agents, through manipulation of environmental stimuli. In an initial session, parents and child would identify target behaviors, such as approach behavior to anxiety-producing stimuli as well as reinforcing stimuli such as food treats or family outings that the child enjoys. Each week a behavior assignment was given involving greater degrees of approach to the anxiety-producing stimuli. If the child were successful in their assignment, he or she was allowed the reinforcing stimuli as a reward. Gradual shaping was employed over time until the child was able to approach the phobic or anxiety-producing stimuli with little hesitation. The second strategy was self-control procedures that stressed the importance of cognitions as an instrument of behavioral change, and focused on developing the child's ability to direct and self-regulate their own behavior. The child was taught to identify his or her own anxious symptoms, as well as their thoughts and cognitions while being exposed to an identified anxiety-producing stimuli. The child was taught to restructure their cognitions and to stop anxious beliefs. The

child was given behavior assignments each week to employ increasing amounts of approach behavior to anxiety-producing stimuli, which practicing the cognitive approaches learned in therapy. Thus, self-control relied upon the child as the primary reinforcing agent, manipulating his or her own cognitions and behavior.

After participants were assessed and diagnosed, they were randomly assigned to one of three treatment conditions: self-control therapy, contingency management or a control group of educational support. Educational support simply involved discussions between therapist and clients regarding anxiety without any behavioral or cognitive interventions or exposure-related assignments. The treatment phase consisted of ten once-a-week sessions, lasting approximately one-hour each with both child and parent. After the treatment phase was complete, participants were once again assessed using the ADIS and self-report measures. Outcome measures were obtained at 3,6 and 12 month follow up.

Results

Demographic information for the treatment groups, as well as for the externalizing and non-externalizing children are presented in Table 1. Chi-square analyses were performed on the sample to assure that all groups were similar in terms of demographic information. No significant differences were found for demographic variables among the treatment groups or between those children who were externalizing and those who were not. Chi-square analysis on the treatment groups revealed no significant differences in the number of externalizing children or in the severity of their externalizing symptomatology. However visual examination of treatment conditions suggested that the contingency management condition contained a higher percentage of children with high externalizing behaviors as measured by the Child Behavior Checklist (6 out of 24, 25%) than did the self-control condition (2 out of 26, 8%). This

indicated that, although the chi-square analysis of the number of externalizing children across treatment groups were not significant, the contingency management condition may have contained proportionally more externalizing children than other conditions. To account for any possible effects that this may have on the degree of externalizing behaviors across treatment groups, the pre-scores of the CBCL externalizing subscale were used as a covariate on all further analyses. Analyses of the primary diagnosis between treatment groups revealed no significant differences in diagnosis or in severity. However, significant differences were found for parent ratings on both the FSSC-Parent version $F(2, 74) = 4.08, p. < .03$, as well as on the RCMAS-Parent version $F(2, 71) = 3.67, p. < .04$. Prescores on both of these measures were used as covariates in subsequent analyses so that group differences among pretreatment scores would not spuriously inflate the significance of these analyses.

Mean scores on each of the outcome measures for high and low externalizing behavior groups across all conditions are presented in Table 2. ANCOVA analyses for the effects of externalizing behaviors across all treatment conditions generally did not have enough power due to the small cell sizes of the externalizing group ($n=12$). However, a significant effect for the Group by Time interaction was found for the FSSC-child version $F(1,53) = 5.97, p. < .02$, as well as for the CASI $F(1, 55) = 7.34, p. < .01$. The Group by Time interaction for improvement of diagnostic severity on the ADIS-C approached significance $F(1, 65) = 2.99, p. < .089$. Examination of the means in both cases revealed that children with high externalizing behavior showed less improvement after treatment than did children without high externalizing behaviors. This trend was generally supported in visual examination of the cell means of other measures, including the RCMAS-child version, the STAIC-Trait, and the CDI. Interestingly, the parent report measures (FSSC-parent and RCMAS-parent) were least supportive of this trend.

The means for high and low externalizing children for each of the three treatment conditions are presented in Table 3. Cell sizes for ANCOVA analyses were too small ($n = 2, 6, 4$ in the self-control, contingency management and educational support groups, respectively) to allow for adequate power in determining the differential moderating effects of externalizing behavior problems among the three treatment conditions. However, in the regression analysis with improvement on clinician-rated severity as the dependent variable, socioeconomic status was entered on the first step, and the interaction between type of treatment and externalizing behavior problems entered on the second step. The interaction between type of treatment and externalizing behavior problems was positively related to higher clinical severity after treatment. For the total model, $R=.399$, $F(2,54)=5.10$, $p. < .01$.

Discussion

The small number of children rated as having high externalizing behavior problems by the CBCL ($n=12$) prevent the results of this study from being interpreted broadly. Rather this study is conceptualized as an exploratory first step in identifying the complex interactions between individuals and the therapeutic process. Despite the small number of children rated as having high externalizing behavior problems by the CBCL, the results of this study in part supported the first hypothesis, specifically that a high degree of externalizing behavior problems has a detrimental effect for treatment of phobic disorders. Though this trend was not robust across all measures, it is likely that, with a greater sample size, these effects would be more statistically pronounced.

Thus it may be interpreted that children with high externalizing behavior problems show less treatment success for phobic disorders, across all treatment types. The reasons for this might be twofold, first that parents, while able to understand the concepts relevant to behavior change

in phobic disorders, are ultimately distracted from phobic behavior change by their children's externalizing behavior problems. Parents who are drawn off task by externalizing behavior problems may not be responding consistently to phobic symptoms, which may sometimes seem of lesser immediate significance, and as such do not adequately implement the strategies necessary for behavior change. Parents of children without high externalizing behavior problems may have the simple luxury of having more time and energy to focus on implementing the treatment strategies for behavior change of phobic disorders.

Second, children with high externalizing behavior problems may be more resistant to contingencies placed, not only on their externalizing behaviors, but on other behaviors as well, including phobic or avoidant behaviors. In this situation, even parents who employ treatment strategies for behavior change in a consistent manner may not receive the relatively immediate results they may expect. Children with higher externalizing behaviors may view their parents' efforts as punishment, rather than constructive attempts to effect a more adaptive set of behaviors, and as such may behave oppositionally. As children with higher externalizing behaviors may be more impulsive and oppositional, they may view their parent's efforts to place contingencies on their behavior as attempts to restrict their behavior. Such children may have some difficulty understanding the link between their behavior and the reinforcers. Thus, when parents withhold a reinforcer if a target behavior has not been reached, the child may view this as a hostile, unfair act, rather than a reasonable consequence. As such, the parents may not be reinforced for their efforts, and in the face of continued phobic or avoidant behaviors, as well as oppositional behaviors, may abandon the treatment strategies too quickly to effect behavior change. Of course, neither of these two explanations explores the possibility that parents of

children with high externalizing behavior problems may themselves have high externalizing behavior problems, and as such, never attempt to implement treatment strategies.

Although the small number of subjects with high externalizing behavior problems ($n=12$) did not allow for a causal exploration of the potential differential moderating effect for externalizing behavior problems for Self-Control Therapy, the regression analysis did lend tentative support to the second hypothesis. The regression analysis demonstrated that externalizing behavior problems do have a differential predictive role for success in Self-Control Therapy, relative to other therapeutic techniques. It seems, thus, that externalizing behavior problems, while detrimental to treatment in general, may be particularly detrimental to therapeutic strategies that emphasize the child's self-control techniques in increasing approach behavior toward fear stimuli. The presence of externalizing behavior problems in children may have a negative impact on a child's ability to acquire the skills necessary to direct his or herself toward positive behavior change through cognitive restructuring and self-reward. Children with higher levels of externalizing behavior problems may not be able to weigh the advantages of behavior change against the immediate discomfort that accompanies approach behaviors. As such, they may not be successful in attempts to restructure their negative cognitions, or may not be able to focus themselves toward longer-term goals. In such children, the crucial component of exposure to fear stimuli may not occur, and treatment of a phobic disorder will not succeed.

The findings of this study have both theoretical and practical value for the research and application of treatment for phobic disorders. Until recently, little effort has been put forth to determine why therapeutic techniques may or may not work for certain individuals. Although few therapists would argue treatment does not always work equally well for all individuals, little consistent effort has been made to determine which factors, both historical (such as demographic

risk factors), as well as personal (such as behavioral patterns or cognitive styles) have a moderating effect for treatment success. The current study begins to support the hypothesis that individual factors, in this case high externalizing behavior problems, have a moderating effect on treatment. As a prognostic variable of interest to practitioners, with information on moderating factors that effect treatment, therapists may be better able to identify patients who may be more at risk for treatment failure, and alter or adjust their therapeutic strategies and goals appropriately. Some therapists may be tempted to target certain behaviors in therapy, without considering moderating individual variables, but it becomes evident from the current study that this is not the most pragmatic approach to behavior change.

Clearly more research into this area is needed. While the current study lends credence to the importance of moderating variables for treatment success, a more comprehensive understanding of an entire spectrum of potential moderating variables needs to be obtained before therapists will be able to properly tailor therapeutic strategies to the specific needs of individuals. Specifically in the case of treatment for childhood phobic disorders, once moderating factors such as high externalizing behavior problems have been identified, the use of multiple regression procedures would be useful for the creation of models profiling the interacting effects of moderating variables. Such profiles might be applied on an individual basis for patients, in order for therapists to gather more accurate prognostic information that might be used to fine-tune or tailor treatment strategies.

In regards to the limitations of the present study, they fall into two categories, first regarding to the sample as a whole, the second regarding to the sample of children with high externalizing problems. It should be noted, for instance, that this sample differs from the general population in regards to family background. Specifically, the sample for the present study

primarily consists of children from families with a higher socioeconomic background.

Socioeconomic background may have implications both for the impact of externalizing behavior problems, as well as for the way in which a family approaches therapy in general. It could be hypothesized that families from a higher socioeconomic background have more resources with which to focus on therapy and behavior change. Indeed, socioeconomic status was included as a significant predictor in the regression model.

In reference to the sample of children with high externalizing disorders, there are two interrelated issues of concern. The first issue of concern is a low number of participants, which has effects both upon the power of the statistical procedures performed, as well as upon their generalizability. However, this low number of subjects has resulted from the screening procedures used by the clinic at which treatment was conducted to insure that children with primary externalizing diagnoses were referred to more appropriate treatment. Second, while the screening procedures are sound clinical procedures, it comes at the cost of a restricted range of externalizing behavior problems available to the current research. Children with primary externalizing disorders would be likely to show even higher degrees of moderation for the treatment of phobic disorders.

A further concern for the present study is in regards to a high number of dropouts ($n=23$). Chi-squared analysis between treatment groups did not reveal differing levels of dropout between treatment conditions. Thus differing dropout rates do not represent a threat to the internal validity of the present study. However, while dropouts are expected in a clinical population, it seems reasonable to suggest that children who dropout of a clinical study differ in some ways than those who remain in treatment. As a result, the ability to generalize the present study to all children with anxiety symptoms is limited.

The avenues for future research have already been discussed. This study is viewed as a necessary, important and interesting first step in the accumulation of knowledge regarding the moderation of treatment for childhood phobic disorders. Future research should be geared at the accumulation of more knowledge in regards to treatment moderation, and ultimately in the consolidation of that knowledge into pragmatic and applicable profiles for therapeutic use.

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Table 1.

Demographic Comparisons Between Treatment Groups.

	Self-Control	Contingency Management	Ed-Support
Gender			
Male	17(53%)	16(48%)	8(53%)
Female	15(47%)	17(52%)	7(47%)
*Mean Age	10.91	9.85	10.00
Ethnic Background			
White	20(65%)	22(67%)	8(53%)
Hispanic	10(32%)	11(33%)	7(47%)
Other	2(3%)	0	0
Income			
<15,000	4(13.8%)	2(7.1%)	3(20%)
15-30,000	7(24.1%)	6(21.4%)	1(6.7%)
>30,000	18(62.1%)	20(71.4%)	11(73.7%)
*Dropouts	9	7	7
High-Externalizing	2	6	4
*Primary Diagnosis			
SIP	31(75.6%)	37(92.5%)	19(82.6%)
SOP	5(12.2%)	2(5%)	3(13%)
AGR	5(12.2%)	1(2.5%)	1(4.3%)

Table 2.

Mean Improvement Scores for Externalizing and Non-Externalizing Children on Main Outcome Measures.

	Behavioral Group			
	Non-Externalizing		Externalizing	
	Pre	Post	Pre	Post
FSSC-R-child	134.31	114.10	138.43	144.24
RCMAS-child	11.22	6.98	13.40	12.13
CDI	9.10	4.74	11.38	9.36
CASI	30.01	24.57	29.06	29.46
STAIC-T	34.11	28.64	36.19	33.58
FSSC-R-parent	131.33	117.97	144.27	129.26
RCMAS-parent	12.84	8.50	17.23	11.82
ADIS-C	6.73	1.45	6.46	2.73

Note: FSSC-R = Fear Survey Schedule for Children Revised, RCMAS = Revised Child Manifest Anxiety Scale, STAIC-T = State-Trait Anxiety Inventory for Children-Trait Version, ADIS-C = Anxiety Disorders Interview Schedule for Children.

Table 3.

Mean Improvement Scores for Externalizing and Non-Externalizing Children on Main Outcome Measures Between Treatment Conditions.

Measure	Group	Pre	Post
<u>Condition</u>			
FSSC-child			
	Non-exter		
	SC	128.61	106.82
	CM	143.77	122.55
	ES	133.67	120.14
	Exter		
	SC	113.85	126.00
	CM	145.89	134.48
	ES	136.67	163.33
RCMAS-child			
	Non-exter		
	SC	10.61	5.15
	CM	12.31	8.68
	ES	12.77	9.54
	Exter		
	SC	9.00	8.00
	CM	14.89	14.50
	ES	13.25	10.80
CDI			
	Non-exter		
	SC	7.29	2.52
	CM	10.20	6.13
	ES	12.22	8.49
	Exter		
	SC	11.00	12.28
	CM	11.96	9.00
	ES	11.00	8.25

CASI

Non-exte		
SC	30.16	22.84
CM	29.84	26.08
ES	29.88	26.71
Exter		
SC	19.00	24.00
CM	30.27	29.12
ES	29.75	31.25

STAIC-T

Non-exte		
SC	32.09	25.78
CM	35.50	31.54
ES	37.50	31.75
Exter		
SC	25.00	27.00
CM	43.42	35.75
ES	31.75	33.05

FSSC-parent

Non-exte		
SC	128.00	110.39
CM	131.18	122.51
ES	140.00	126.73
Exter		
SC	135.50	113.69
CM	137.77	130.24
ES	156.79	135.83

RCMAS-parent

Non-exte		
SC	14.12	8.39
CM	10.23	8.12
ES	16.00	10.10
Exter		
SC	15.50	12.71
CM	17.87	11.00

ES	17.62	11.99
ADIS		
Non-exte		
SC	6.44	.24
CM	7.05	2.86
ES	6.78	1.33
Exte		
SC	7.00	.00
CM	6.20	2.40
ES	6.50	4.50

Note: FSSC = Fear Survey Schedule for Children, RCMAS = Revised Child Manifest Anxiety Scale, CDI = Child Depression Inventory, CASI = Child Anxiety Sensitivity Index, STAIC-T = State-Trait Anxiety Inventory for Children-Trait Version, ADIS = Anxiety Disorders Interview Schedule.

SC = Self-Control

CM = Contingency Management

ES = Educational Support

Author Notes

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Requests for reprints should be sent to Christopher J. Ferguson at the Department of Psychology, University of Central Florida, PO Box 161390, Orlando, FL. 32816.