

The Relationship Among Knowledge of Effective Behavioral Strategies, Parental
Self-Efficacy, and Child Behavior: Implications for Early-Intervention Parent-
Training Programs

Mairi Kirk

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Thesis Committee:

Kimberly Ujcich Ward, PhD, Chair

Michelle Boyer-Pennington, PhD, Committee Member

ABSTRACT

This study examined the relationship among parental knowledge of effective behavioral strategies, parental self-efficacy, and parent-reported child externalizing behavior. A nonclinical sample including 36 parents of preschool-age children was included in the data analysis. Multiple regression analyzing the relationship of the variables revealed that when parental knowledge was held constant, both task-specific self-efficacy (i.e., sense of self-efficacy in responding to disruptive behaviors in various situations) and self-efficacy in the parenting role were significant predictors of child behavior. Self-efficacy in the parenting role was a better predictor of child behavior than task-specific self-efficacy. Knowledge of behavioral principles was not a significant predictor of child behavior; however, a significant relationship was found between knowledge and self-efficacy in the parenting role. This information could be useful in the development and betterment of early-intervention parent-training programs.

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CHAPTER I

LITERATURE REVIEW

Research suggests that disruptive behavior in preschool-age children can be a predictor of more serious problems later in life, including conduct disorders, juvenile delinquency, and adulthood psychological dysfunction (Bell & Eyberg, 2002; World Health Organization, 2004). Data further indicate that intervening early, when problematic behavior first emerges, may prevent exacerbation and increase the quality of life for the child, the family, and society (Bell & Eyberg, 2002). An early-intervention program serving preschool-age children, where disruptive and/or noncompliant behaviors are emerging, yet have not escalated to a clinical level, offers the opportunity to preclude more serious conduct problems. Unfortunately, the availability of efficacious mental health programs targeting this population is scarce. There is evidence that parent-training programs teaching behavior management techniques can improve the child's behavior (e.g., increase compliance, decrease disruptiveness). There is further evidence to suggest that parental self-efficacy (i.e., perception of parenting ability) plays an important role in child-rearing. However, demonstration of the relationship among parental knowledge of effective behavioral strategies, parental self-efficacy, and child behavior in nonclinical, preschool-age samples has been limited. In order to design an efficacious early-intervention program targeting this population, further investigation of the relationship among these variables is warranted.

Parenting Knowledge and Child Behavior

Teaching parents effective behavior management strategies is usually an aim in parent-training programs. A parent's knowledge of such strategies would be expected to have a positive correlation with appropriate child behavior; however, few studies have explored how these factors are related. A study by Morawska, Winter, and Sanders (2009) evaluated the relationship of parental knowledge and child behavior using 68 parents (65 mothers, 3 fathers) of children ages 2 to 5. Participants were recruited from a nonclinical sample and administered the *Eyberg Clinical Behavior Inventory* (ECBI; Eyberg & Pincus, 1999), which measures the parental perceptions of the intensity (i.e., frequency) of the child's externalizing behavior (e.g., aggression, tantrums, opposition, defiance, property destruction, etc.), and *Parenting Knowledge Scale* (PKS; Morawska, Winter, & Sanders, 2007), which assesses knowledge regarding promotion of child development, effective parenting strategies, causes of problematic behaviors, and the use of discipline. The results of this study indicated no significant relationship between the parent's knowledge and the intensity of the child's disruptive behavior. This study, however, is limited by its use of a nonclinical population, where significant differences in child behavior would not be expected. A study by Winter, Morawska, and Sanders (2012a) used a clinical sample when they examined the relationship between parental knowledge and child behavior. Participants included 91 parents (44 mothers, 47 fathers) of children ages 2 to 10. The parents were separated into two groups based on level of education (i.e., higher and lower). The *Knowledge of Effective Parenting Scale* (KEPS; Morawska,

Sanders, & Winter, 2005) was used to assess the parent's knowledge of strategies for handling and preventing problematic behavior in children. Despite the higher education group scoring higher on the KEPS than the lower education group, there were no significant differences between groups regarding the intensity of the children's problematic behavior, as measured by the ECBI. Being that both groups consisted of children with clinical levels of problematic behaviors, it is not surprising, however, that there were no significant differences in behavior intensity found. As part of the study, parents participated in a parent-training program. Following completion of the program, both the higher and lower education groups demonstrated significant increases in knowledge and significant decreases in child behavior intensity; however, a direct relationship between the two variables was not found.

A study by Winter, Morawska, and Sanders (2012b) also sought to evaluate the relationship between parental knowledge and child behavior. Similar to Morawska et al. (2009), Winter et al. (2012b) utilized a nonclinical sample. Participants included 62 parents (60 mothers, 2 fathers) with children ages 2 to 3 years. Parents were administered the ECBI, as a measure of children's disruptive behaviors, and the KEPS, as a measure of parenting knowledge. Similar to the aforementioned studies, they did not find a significant relationship between the two variables. As part of their study, they also administered the Emotions subscale of the *Strengths and Difficulties Questionnaire* (SDQ; Goodman, 1997) as a measure of the child's internalized problematic behavior (e.g., physical complaints, worry, nervousness, clinginess, and fearfulness). Interestingly, a significant negative

correlation between parental knowledge of effective behavioral strategies and the child's internalized problematic behavior was found.

Neither Winter et al. (2012a) nor Morawska et al. (2009) used the SDQ or any other measure to evaluate internalized behavior; therefore, it cannot be determined whether a significant negative correlation between parental knowledge and internalized problematic behavior is a consistent finding or if it is related to some other factor, such as different populations (i.e., nonclinical vs. clinical and ages 2 to 3 vs. 2 to 10) or different assessment tools for measuring parenting knowledge (i.e., PKS vs KEPS). As a direct relationship between parenting knowledge of effective behavioral strategies and child externalizing behavior has presently not been established, future research on this relationship is warranted.

Parenting Self-Efficacy and Child Behavior

Although strengthening self-efficacy is often a goal in parent-training programs, research evaluating the relationship among parental self-efficacy and child behavior is limited. Sanders and Woolley (2005) recognized the need for such research and sought to analyze it using the ECBI and three different measures of self-efficacy: (a) the *Parenting Sense of Competence* (PSOC; Johnston & Mash, 1989); (b) the *Parenting Tasks Checklist* (PTC; Sanders and Woolley, 2001); and (c) the *Global Self-Efficacy Scale* (GSE; Jerusalem & Schwarzer, 1992). The justification for three measures of self-efficacy was to determine if any specific domain of self-efficacy was more strongly correlated with child behavior. The PSOC was used to measure the domain related to self-efficacy in the parenting role, such as the parents'

sense of satisfaction in their parenting abilities and their self-efficacy in solving parenting problems. The PTC is a measure of the parents' sense of self-efficacy in responding to difficult behaviors in various common situations. The domain measured by the GSE is the more stable view of self-efficacy held by the parents in regards to handling stressful situations in general. In their study, 45 mothers of clinical and 79 mothers of nonclinical children ages 2 to 8 were recruited. As would be expected, they found that the clinical sample had significantly higher scores on the ECBI, indicating greater intensity of disruptive behavior, than the nonclinical sample. In comparison to the nonclinical sample, the parents of children in the clinical group were also found to have significantly lower task-specific self-efficacy on 27 out of 28 situations as measured by the PTC. The GSE similarly revealed a significant discrepancy between groups, with the parents in the clinical sample again reporting less self-efficacy than the nonclinical group. The findings of the study suggests that parents of children with clinically significant behavior problems likely have low task-specific self-efficacy and low self-efficacy in handling stressful situations. A surprising finding was that the groups did not differ in maternal self-efficacy as measured by the PSOC. This finding lends support to the hypothesis that child behavior may be better predicted by certain domains of self-efficacy and not necessarily all domains. This information could be helpful when designing an effective parent-training program.

As previously mentioned, the study by Morawska et al. (2009), which used a nonclinical population, did not find a significant relationship between parental

knowledge and child behavior. They did, however, find that confidence, as measured by the PSOC, was a significant predictor of the intensity of reported child behavior, as measured by the ECBI. In fact, of all relationships they examined, confidence was the only significant predictor of child behavior that they found. These findings by Sanders and Woolley (2005) and by Morawska et al. (2009) suggests that the relationship between parental self-efficacy and child behavior deserves further attention.

Parenting Knowledge and Parenting Self-Efficacy

Bandura's theory of self-efficacy postulates that as a person learns effective strategies for managing a problem, their perceived self-efficacy is raised, and this affects their actions (Bandura, 1994). In the design of parent-training programs, this theory is often utilized. A great emphasis is therefore placed on teaching parents behavior management strategies with the anticipation that it will raise the parental self-efficacy and, thereby, change their parenting behavior. As the research examining the relationship between parenting knowledge and parental self-efficacy has been minimal, further evaluation continues to be needed. Included in the aforementioned study by Morawska et al. (2009), on a nonclinical population, was an analysis of the relationship of parental knowledge, as measured by the PKS, and parental self-efficacy, as measured by the PSOC. Their results did not yield a significant relationship between parental knowledge and parental self-efficacy. It should be taken into consideration, however, that in the study by Sanders and Woolley (2005), where three measures of self-efficacy were utilized, the PSOC was the only measure of self-efficacy where a difference between clinical and nonclinical

groups was not found. Perhaps, a relationship was not found between knowledge and self-efficacy in the study by Morawska et al. (2009) because of the assessment tool (i.e., the PSOC). An additional limitation was that the sample consisted of only a nonclinical population and, therefore, there may not have been enough variability within the group to allow for significant differences to be found. Winter et al. (2012b) also assessed the relationship between parental knowledge and self-efficacy using a nonclinical sample. They, however, used the KEPS to measure parental knowledge and the PTC to measure self-efficacy. They, too, found no support for a significant relationship between the two variables. A study by Winter et al. (2012a) likewise explored the relationship between parental knowledge and confidence, but did so in a clinical sample. Utilizing the KEPS to measure parental knowledge and the PTC to evaluate self-efficacy, they found that the self-efficacy of parents with a greater amount of knowledge was not any higher than the self-efficacy of parents who scored lower on the KEPS. Their findings also suggested there was not a significant relationship between parental knowledge and parental self-efficacy. There subsequently remains a continued need to further explore this relationship, and also to seek whether there may be other variables that have an important influence on the relationship.

Parental Report and Observed Parent-Child Interactions

An observational measure of the parent-child interaction could assist in validating self-report measures of child behavior, parental self-efficacy, and parental knowledge of behavior management techniques. A better picture of parental

knowledge and self-efficacy could be obtained by observing how the parents respond to their child's behavior and whether they are able to properly apply their knowledge of effective behavioral strategies. In their study, Conrad, Gross, Fogg, and Ruchala (1992) used an observational measure to assess the relationship between maternal confidence and the quality of parent-child interactions using a nonclinical sample of 50 mother-toddler (age 12 to 35 months) dyads. The *Nursing Child Assessment Teaching Scale* (NCATS; Barnard, et al., 1989) was used to score the mother's responsiveness and sensitivity to her toddler, as well as the child's behavior in response to the mother. Maternal confidence was assessed with the *Toddler Care Questionnaire* (TCQ; Gross & Rocissano, 1988), which is a self-report measure of the parent's perceived competency in managing her child in a variety of situations. No measurement targeting knowledge of effective behavior strategies was administered; however, participants did complete the *Knowledge of Infant Development Questionnaire* (KIDI; MacPhee, D., 1981), which assesses parents' understanding of child development from birth to 36 months of age. Initially, no significant correlation was found between maternal self-efficacy and quality of parent-child interaction. However, when mothers were divided into six groups based on amount of child development knowledge and level of confidence (i.e., least knowledgeable and less confident, least knowledgeable and more confident, knowledgeable and less confident, knowledgeable and more confident, most knowledgeable and less confident, most knowledgeable and more confident), a significant relationship was noted. Mothers in the most knowledgeable-more

confident group had a significantly more positive parent-child interaction than those in the most knowledgeable-less confident group, suggesting that confidence may play an important role in the parent-child relationship. In less confident mothers, the quality of interactions, however, was not related to knowledge of child development. Interestingly, parents in the least knowledgeable-more confident group had the least positive interaction with their toddlers. These findings provide some support for the hypothesis that having greater confidence is an important factor, but it also suggests that having greater confidence, alone, may not be enough to positively impact the parent-child relationship.

The aforementioned study by Winter et al. (2012b) on a nonclinical sample of 2 to 3 year olds included a 15-minute observation of parent-toddler interaction and compared the observation to the scores on self-report measures. The observation was coded using the *Family Observation Schedule* (FOS; Sanders, 2000). The FOS measures parenting competence by tracking the number of time intervals where the parent praises the child, is affectionate towards the child, and/or has positive physical contact with the child. Researchers assessed potential relationships among knowledge of behavioral principles, reported parental self-efficacy, observed parenting competence, reported child behavior, and observed child behavior. Results revealed a positive correlation between observed parenting competence and the KEPS; however, there was no significant relationship between the observed parenting competence and the self-report measure of parent's self-efficacy. The question arises whether these parents are more competent than they believe or whether the definition

of parenting competence provided by the FOS is not analogous to that used in the PTC. As the FOS characterizes competence as the parent's use of praise and affection, it could be argued that the FOS may actually be a measure of the parent's ability to practice the skills defined within the KEPS or that it is instead a measure of the quality of the parent-child interaction. An interesting finding was that parents with higher observed competence also experienced higher rates of aversive child behavior during the observation. This could be attributed to the researchers' discovery that these parents attempted to use soothing and affection to calm their children when their children became disruptive, which may actually have served to reinforce the aversive behavior. Based on their findings, it could then be suggested that, although parents may have the knowledge of positive behavior techniques and are able to demonstrate these skills, they may be less able to apply their knowledge when disruptive behaviors occur.

Relationship Among Parental Knowledge, Self-Efficacy, and Child Behavior

The research reviewed, thus far, has been unable to establish a relationship between knowledge of effective parenting strategies and parental self-efficacy. Also, as previously discussed, the research has been unable to establish a clear relationship between parental knowledge of behavior management techniques and the child's externalizing behavior. There is, however, some evidence to suggest a negative correlation between parenting knowledge and child internalizing behavior (Winter et al. 2012b). The only variable found to be related to child externalizing behavior was parental self-efficacy (Morawska et al., 2009; Sanders & Woolley, 2005). Overall,

when isolating the variables of parental self-efficacy, child behavior, and parental knowledge, a consistent effect has not been seen. Little research has been done to determine whether child behavior would be better predicted when parenting knowledge and parental self-efficacy are considered together. Morawska et al. (2009) sought to evaluate this with the hypothesis that parents with greater knowledge paired with greater reported parental self-efficacy would present with less intense child behavior problems. Their findings, however, did not support the hypothesis.

In the study by Winter et al. (2012a), parental self-efficacy, child behavior, and knowledge of effective behavioral strategies were evaluated prior to participation in a parent-training program, and then reevaluated post intervention. Following treatment, parents demonstrated significantly greater knowledge, as measured by the KEPS, significantly greater self-efficacy, as measured by the PTS, and a significant decrease in the intensity of the child's externalizing behaviors, as measured by the ECBI. They additionally measured parenting dysfunction (i.e., degree of permissiveness, level of over-reactivity, use of verbal or physical coercion) using the *Parenting Scale* (PS; Arnold, O'Leary, Wolff, & Acker, 1993) and found a significant improvement in this variable following the intervention, as well. When evaluated together, parenting knowledge, parental self-efficacy, and parenting dysfunction significantly accounted for 27% of the change in child behavior. When each variable was evaluated separately, it was actually parenting dysfunction changes that explained the greatest variance in the change in child behavior.

Summary and Purpose of the Current Study

Research has found, in nonclinical populations, a significant negative correlation between a child's internalizing behaviors and the parent's knowledge of effective behavioral strategies, and also that parental self-efficacy serves as a predictor of the intensity (i.e., frequency of occurrence) of child externalizing behavior (Morawska et al., 2009; Winter et al., 2012b). In a study comparing clinical and nonclinical participants, parents in the clinical group were found to have significantly lower task-specific self-efficacy than nonclinical parents on 27 out of 28 situations as assessed by the PTC (Sanders & Woolley, 2005). A study comparing pre- and post-intervention findings, demonstrated an improvement in knowledge of effective parenting techniques, parental self-efficacy, and child behavior following treatment (Winter et al., 2012a). A limitation when comparing results of these studies includes their use of different populations (i.e., clinical versus nonclinical, and varied age ranges). A second limitation is that the studies use non-analogous definitions of parental self-efficacy. A third limitation is that the measures of parental knowledge, parental self-efficacy, and child behavior used were not the same in each study. These studies do provide, however, some support for a relationship among knowledge of effective behavioral strategies, parental self-efficacy, and child internalizing and/or externalizing behavior, but there remains a paucity of research on the subject. As a better understanding of these relationships may aid the development and betterment of early-intervention parent-training programs, further investigation is warranted.

The current study sought to add to the existing research by analyzing the relationship among parental knowledge of effective behavior strategies, parental self-

efficacy, and reported child behavior in a nonclinical sample of preschool-age children. Justification for measuring knowledge of effective behavioral strategies is that there is a paucity of research that measures this variable, yet increasing the knowledge of behavior management skills is a focus of many parent-child interventions. The aim of the current study, additionally, was to evaluate and determine whether parental self-efficacy (i.e., self-efficacy in parenting role and/or task-specific self-efficacy) was either predictive of child behavior or was potentially a mediator between parental knowledge of behavioral principles and reported child behavior. Self-efficacy as a mediator would indicate that, instead of parental knowledge directly affecting child behavior, parental knowledge would affect parental self-efficacy, which would then affect child behavior. The reasoning behind using two different measures of parental self-efficacy was prompted by the research of Sanders and Woolley (2005), where they found that the clinical and nonclinical groups differed from each other in task-specific and global self-efficacy, but did not differ in self-efficacy in the parenting role. A goal of this study, therefore, was to also evaluate the possibility that separate measures evaluating different domains of self-efficacy may yield different results. Gaining a better understanding of whether particular domains of self-efficacy are more predictive of child behavior could be valuable in designing more effective parent-training programs.

We additionally hypothesized that parental self-efficacy would mediate the relationship between parental knowledge and child behavior, such that knowledge would be found to be more predictive of child's behavior when a parent has a higher

self-efficacy. It was further hypothesized that this relationship would be stronger for task-specific self-efficacy, as measured by the total score (average of the behavioral-specific and setting-specific scales) on the PTC, than for a parent's sense of self-efficacy in the parenting role, as measured by the PSI-4 Competence subscale. This hypothesis is based on the findings of Sanders and Woolley (2005) where they found no significant difference in self-efficacy in the parenting role when comparing the clinical and nonclinical group, but found the groups differed from each other in task-specific self-efficacy.

CHAPTER II

METHOD

Participants

Participants were recruited from the undergraduate psychology research pool at Middle Tennessee State University (MTSU), as well as from two local daycares. To be eligible for the study, participants had to meet the following inclusion criteria: (1) have a preschool-age child between the ages of 2 and 5, (2) child not yet started in kindergarten, (3) child currently living with the participating guardian, and (4) participating guardian being the primary caregiver. Exclusion criteria included: (1) an ECBI Intensity Scale score above 156, indicating the presence of severe behavior problems. If the guardian had more than one child meeting inclusion criteria, he/she was asked to choose one child to be rated. One hundred and fifty packets were delivered to the participating daycares. Thirty-eight packets were returned; however, three participants were excluded due to incomplete surveys. One participant was recruited from the MTSU undergraduate psychology research pool; therefore, a total of 36 participants were included in the final sample. See Table 1 for frequencies of categorical demographic variables.

Measures

Demographic Questionnaire. A demographic questionnaire was used to collect information about participating dyads, including gender, age, race, caregiver's relationship to the child, caregiver's highest education level, and marital status. A copy of this questionnaire is included in Appendix A.

Table 1
Frequencies for categorical demographic variables

Variables	<i>n</i>	Percentage
Gender		
Female	34	94
Male	2	6
Parental Age		
< 21	2	6
21 – 25	4	11
26 – 30	8	22
31 – 35	13	36
36 – 40	5	14
> 40	4	11
Relation to Child		
Biological	34	94
Foster	1	3
Adoptive	1	3
Marital Status		
Never Married	2	6
Divorced	2	6
Married	29	81
Living as married to biological parent	3	8
Race		
African Am	3	8
Caucasian	32	89
Hispanic	1	3
Korean	1	3
Education		
H.S./GED	1	3
Tech/Vocational	2	3
Some college	8	22
College graduate	11	31
Some postgrad	2	6
Postgrad degree	13	36

Note. *N* = 36.

Eyberg Child Behavior Inventory (ECBI). The ECBI (Eyberg, 1992) is a 36-item, parent-report scale designed to measure behavior problems in children ages 2 to 16. The ECBI consists of two scores: (a) the intensity score, which is a measure of how frequently the disruptive behaviors arise, and (b) the problem score, which indicates the number of behaviors the parent finds to be problematic. Children are considered to be within the “conduct problem range” when intensity scores are greater than 127 and when problem scores are greater than 11. Because the population studied was nonclinical, the problem scores among participants would likely demonstrate little variation, whereas the intensity score would provide a greater amount of information regarding parents’ perceptions of the disruptive behavior. Therefore, only the intensity score was analyzed for the present study. An ECBI intensity score above 156 is indicative of severe behavior problems and would exclude the dyad from participation because the focus of the present study is nonclinical behavioral concerns. The ECBI has been established as a valid assessment tool sensitive to change following parent training (Eyberg, 1992). The item to total score correlation reveals a high internal consistency ($r = .98$) of both the intensity and problem scores, good test–retest reliability for both intensity ($r = .86$) and problem ($r = .88$) scores, and clearly discriminates problem from non-problem children (Robinson, Eyberg, & Ross, 1980).

Knowledge of Behavioral Principles as Applied to Children-Abbreviated (KBPAC). The KBPAC (O’Dell, Tarler-Benlolo, & Flynn, 1979) is a questionnaire evaluating parent’s knowledge of effective behavioral strategies. The measure

provides examples of common situations a parent may encounter with his or her child. The respondent is to select a technique from multiple-choice answers that the parent believes would best handle the presented scenario. There is only one correct answer to each question, and each response is either right or wrong. Each correct answer is worth one point. Based on the number of correct responses, the KBPAC can ascertain a parent's level of knowledge regarding application of behavioral techniques, such as reinforcement, punishment, and extinction. The KBPAC has demonstrated reliability and internal consistency with a Kuder-Richardson reliability coefficient of .94 and with odd-even split-half correlations of .93 (O'Dell et al., 1979). A replication study provided further support of the reliability with Kuder-Richardson reliability coefficient of .71 and Cronbach's alpha of .87 (see Sturmey, Newton, Milne, & Burdett, 1987). Short forms of the KBPAC have additionally been robust with Cronbach's alpha ranging from .66 to .89 (Furtkamp, Giffort, & Schiers, 1982; Sturmey, et al., 1987). Because shortened forms have been demonstrated to maintain internal consistency, an abbreviated version was used for the present study (see Appendix B).

Parenting Tasks Checklist (PTC). The PTC (Sanders & Woolley, 2005) measures parents' sense of efficacy in handling specific disruptive child behaviors in a variety of settings. The PTC consists of two 14-question subscales on which parents rate their confidence on a scale from 0 (*certain I cannot do it*) to 100 (*certain I can do it*). The Behavioral Self-Efficacy subscale assesses parental confidence in dealing with specific difficult behaviors (e.g., tantrums, whining, and

noncompliance). The Setting Self-Efficacy subscale focuses on measuring the parent's confidence in handling behaviors in a variety of settings where a child may misbehave (e.g., while parent is on the phone, shopping, preparing dinner, etc.). The two scores are then averaged in order to obtain an overall measure of task-specific self-efficacy. The overall measure of task-specific self-efficacy was used in the present study. Both scales have been shown to have good internal consistency ($\alpha = .97$ and $.91$; Sanders & Woolley, 2005). The PTC was used in the current study as a measure of task-specific self-efficacy.

Parenting Stress Index-4 (PSI-4) Competence Subscale. The PSI-4 (Abidin, 2012) consists of 13 subscales, including one assessing parenting self-efficacy, which was the only subscale of the PSI-4 used in the present study. The Competence subscale consists of 13 questions designed to assess the parent's sense of self-efficacy in the parenting role (i.e., perception of their ability to make parenting decisions, to handle parenting situations in general, to understand their child, etc.). Parents respond to statements on a 5-point scale, ranging from strongly agree to strongly disagree. Higher scores on this scale indicate lower self-efficacy. The Competence subscale has demonstrated a $.88$ correlation with the Parent factor score on the PSI-4, and the internal consistency of the Competence subscale is $.86$ (Abidin, 2012).

Procedure

A packet of assessments was delivered to individuals who signed up to participate through the MTSU research pool. Also, a total of 150 packets was delivered to the offices of the two participating daycares, which were then distributed

to all parents. Included in the packets was a consent letter (Appendix C). Returning the completed packet indicated consent. Packets also included the Demographic Questionnaire, ECBI, PTC, Competence subscale of the PSI-4, and a shortened form of the KBPAC. The order of surveys was randomized within packets. The parents did not include any identifying information in the packet to allow for anonymity. Packets completed by participants through the research pool were collected by the researcher, and packets completed by participants recruited through the daycares were returned to the office of the participating daycares, and then picked up by the researcher.

CHAPTER III

RESULTS

Table 2 presents descriptive statistics for the dependent variables. Despite the sample consisting of only a nonclinical population, there was still notable variability in the participants' scores on measures, as illustrated by the standard deviations in scores.

In the present study, it was predicted that a parent's self-efficacy would mediate the relationship between parental knowledge and the child's behavior, such that the parent's knowledge would be found to be more predictive of child behavior when the parental self-efficacy was higher. It was further hypothesized that task-specific self-efficacy would be a stronger predictor of child behavior than self-efficacy in the parenting role, as measured by the PSI-4 Competence subscale.

Because of the small sample size and lack of statistical power, tests of mediation could not be carried out. Therefore, we first evaluated the correlations among the dependent variables. A significant relationship between knowledge of behavioral principles, as measured by the KBPAC, and parent's self-efficacy in the parenting role, as measured by the PSI-4 Competence subscale, was found. There was, however, no significant relationship found between the KBPAC and task-specific self-efficacy, as measured by the PTC, nor was there a significant relationship found between the KBPAC and child behavior, as measured by the ECBI. The ECBI also was found to have a significant relationship with the PSI-4 Competence subscale, as well as with the PTC. See Table 3 for all correlations.

Table 2

Descriptive statistics for dependent variables

Variables	<i>M</i>	<i>SD</i>
PTC	88.35	14.4
KBPAC	3.78	2.09
PSI4 Comp	27.11	5.61
ECBI	101.11	23.12

N = 36. KBPAC = Knowledge of Behavioral Principles as Applied to Children-Abbreviated, ECBI = Eyberg Child Behavior Inventory, PTC = Parenting Task Checklist, PSI4 = Parenting Stress Index-4, Competence subscale

Table 3

Correlations among dependent variables

<i>Variable:</i>	ECBI	PTC	PSI4
KBPAC	.341	.139	.003**
ECBI	--	.004***	.000***
PTC – Task Efficacy	.004**	--	.000***
PSI4 – Comp	.000***	.000	--

Note. $N = 36$. KBPAC = Knowledge of Behavioral Principles as Applied to Children-Abbreviated, ECBI = Eyberg Child Behavior Inventory, PTC = Parenting Task Checklist, PSI4 = Parenting Stress Index-4, Competence subscale.

* $p < .05$. ** $p < .01$. *** $p < .001$.

Multiple regression then was used to further analyze the relationships among the dependent variables. An omnibus test of the regression found that, as a whole, knowledge of effective behavioral strategies, as measured by the KBPAC, and task-specific self-efficacy, as measured by the PTC, significantly predicted child behavior, $F(2, 33) = 4.79, MSE = 439.38, p = .015, Adj. R^2 = .18$. When knowledge was held constant, task-specific self-efficacy was found to be a significant predictor of child behavior $B = -.74, SE = .25, t(33) = -2.91, p = .007$. This finding indicates, when knowledge is held constant, for every 1 point increase in PTC score (higher scores indicate higher self-efficacy), ECBI scores decrease by .74 points (lower scores indicate less frequent disruptive behavior).

The omnibus test of the regression for parental knowledge and self-efficacy in the parenting role, when considered together, also significantly predicted the intensity of child behavior $F(2, 33) = 8.09, MSE = 380.48, p = .001, Adj. R^2 = .29$.

Additionally, the PSI-4 Competence subscale was found to be a significant predictor of child behavior when knowledge was held constant, $B = 2.59, SE = .67, t(33) = 3.85, p = .001$. This finding indicates, when knowledge is held constant, for every 1-point increase in the PSI-4 Competence subscale score (higher scores indicate lower self-efficacy), the behavior intensity score increases by 2.59 (higher scores indicate more frequent disruptive behaviors). The higher R^2 for the PSI-4 Competence subscale suggests that it is a stronger predictor of child behavior than the PTC. Exploratory regression analysis was conducted to further evaluate the strength of prediction, which confirmed that the PSI-4 Competence subscale is indeed a stronger

predictor of child behavior than the PTC. This was determined by using enter/block analysis. In this procedure, the first analysis only included the PSI-4 Competence subscale, and the second added the PTC to see if the predictive value increased by doing so. The F change of .265 indicated the second procedure (i.e., variable entered) was not significant in predicting child behavior. This means that adding the PTC does not increase the power to predict child behavior. When conducting enter/block analysis, where the first model only included the PTC, and the second model added the PSI-4 Competence subscale, a significant change in the predictive value was found (F change = .001). This affirmed the finding that the PSI-4 Competence subscale was a better predictor of child behavior than the PTC.

The relationship between parenting knowledge of effective behavioral strategies, as measured by the KBPAC, and child behavior, as measured by the ECBI, was evaluated also using an omnibus test of the regression. Analysis revealed there was no significant relationship between knowledge and child behavior, $F(1, 34) = .93$, $MSE = 535.52$, $p = .341$, $Adj. R^2 = -.002$. Knowledge was additionally not found to be a significant predictor of behavior when task-specific self-efficacy was held constant, $B = .53$, $SE = 1.76$, $t(33) = .30$, $p = .765$. Again, when self-efficacy in the parenting role, as measured by the PSI-4 Competence subscale, was held constant, knowledge was not found to be a significant predictor of behavior, $B = -1.57$, $SE = 1.81$, $t(33) = -.87$, $p = .391$.

In summary, it was hypothesized that task-specific self-efficacy and self-efficacy in the parenting role would mediate the relationship between parental

knowledge of behavioral principles and the intensity of the child's externalizing behaviors. Tests of mediation could not be conducted, therefore, multiple regression was used to evaluate correlations among dependent variables. A significant relationship between knowledge of behavioral principles and the parental self-efficacy in the parental role was found; however, there was no significant relationship between knowledge and task-specific self-efficacy. Knowledge was not found to be a significant predictor of child behavior; however, as a whole, knowledge and task-specific self-efficacy, as well as knowledge and self-efficacy in the parenting role were found to significantly predict child behavior. An interesting finding was that the average score on the test of knowledge was found to be only 3.78 out of 10 possible points, indicating that participants generally had very little knowledge of behavior management techniques. Self-efficacy in the parenting role and task-specific self-efficacy were both found to be significantly related to child behavior. It was hypothesized that task-specific self-efficacy would be a stronger predictor of child behavior than self-efficacy in the parenting role; however, it was self-efficacy in the parenting role that was found to be the stronger predictor of child behavior.

CHAPTER IV

DISCUSSION

The purpose of this study was to evaluate the relationship among knowledge of effective behavioral strategies, parental self-efficacy, and child externalizing behavior, as reported by parents of preschool age children in a nonclinical population. As there is presently a dearth in the research on the subject, the present study was conducted to add to the literature. It is believed that information gained from this present study, regarding the relationship among these variables, would be useful in the development and betterment of early-intervention parent-training programs.

Prior research evaluating the relationship among knowledge of behavior management techniques, parental self-efficacy, and child behavior has yielded inconsistent results. For example, Morawska et al. (2009), no significant relationship among knowledge, self-efficacy, and child behavior was found, but Winter et al. (2012a), comparing pre- and post-intervention measures, showed an improvement in knowledge of effective parenting techniques, parental self-efficacy, and child behavior following treatment, which would suggest a possible relationship among these variables. In the present study, when combining the variables of parental knowledge and task-specific self-efficacy, a significant prediction of child behavior was found. A significant prediction of child externalizing behavior also was found when combining parental knowledge and self-efficacy in the parenting role. It is therefore suggested that a parent-training program which aims to increase parental

knowledge of behavioral strategies and parental self-efficacy may result in improvement in the child's externalizing behavior problems.

A study within a nonclinical population showed a significant negative correlation between a child's internalizing behaviors and the parent's knowledge of effective behavioral strategies; however, in studies of clinical and of nonclinical populations, a significant relationship between parental knowledge and a child's externalizing behavior was not found (e.g., Morawska et al., 2009; Winter et al., 2012a; Winter et al. 2012b). Findings of the present study also found that parental knowledge of behavioral strategies was not significantly related to or predictive of child externalizing behavior. These findings would suggest that a parent-training program focused only on increasing parental knowledge would likely not be adequate enough to elicit significant changes in the externalizing behaviors of the child.

One consistent finding in the research was regarding the relationship between self-efficacy and child behavior. Sanders and Woolley (2005) found that parents in a clinical population had lower self-efficacy scores than parents in the nonclinical population. Morawska et al. (2009) utilized parents of 2 to 5 year olds in a nonclinical sample and found that self-efficacy served as a predictor of the intensity (i.e., frequency of occurrence) of child behavior. The findings of the present study, which utilized a sample similar to Morawska et al. (2009), also revealed that, when knowledge was held constant, task-specific self-efficacy and self-efficacy in the parenting role were both individually predictive of child behavior. The implication of

the findings of these three studies would suggest that greater focus should perhaps be placed on improving parental self-efficacy than on increasing parental knowledge.

Utilizing a nonclinical sample, Morawska et al. (2009), assessed the relationship between parental knowledge and self-efficacy in the parenting role and found no significant relationship between the variables. In the present study, however, a significant relationship was found between the two variables. The inconsistency in findings could possibly be related to the use of different assessment tools of knowledge (PKS vs. KBPAC) and parental self-efficacy (PSOC vs. PSI-4 Competence subscale). In both clinical and nonclinical populations, Winter et al., (2012a) and Winter et al. (2012b) found no significant relationship between parental knowledge and task-specific self-efficacy. Similarly, in the present study, no significant relationship was found between the two variables.

In the current study, it had been hypothesized that task-specific self-efficacy, as measured by the PTC, would be a better predictor of child behavior than the sense of self-efficacy in the parenting role, as measured by the PSI-4 Competence subscale. This hypothesis was based on the study by Sanders and Woolley (2005) where they found parents in the clinical group to have significantly lower task-specific efficacy than a nonclinical group, but found no significant differences between groups regarding self-efficacy in the parenting role. The findings of the present study, however, did not support the hypothesis. Although both measures were found to predict child behavior, self-efficacy in the parenting role was more predictive of child behavior than task-specific self-efficacy. One possible reason for the inconsistent

findings between the two studies could be the different age groups studied (e.g., ages 2 to 8 vs. ages 2 to 5) and/or the different measures of self-efficacy used (PSOC vs. PSI-4 Competence subscale). Other demographic differences and/or other variables not assessed (e.g., parental mental health issues, familial stressors, etc.) could also account for the inconsistent findings.

Limitations and Future Directions

The present study had several limitations. First, the sample size was small, and, therefore, testing for mediation was unable to be carried out. A larger sample size could also have allowed for greater diversity in participants and broader ranges in scores on measures. Second, participants were recruited from only two local daycares and a single university within the same city, and the sample also consisted of mainly married, Caucasian women, many of whom held a graduate degree, which is not a good representation of the general population. As such, the findings have limited generalizability. Future research should be conducted utilizing a larger, more diverse sample. With a larger sample, tests for mediation could be conducted, which may provide greater insight into the relationship among parental knowledge, parental self-efficacy, and child behavior. Future research also should continue to make comparisons pre- and post-treatment, particularly in relation to early-intervention programs as this information would be useful in creating and bettering such programs.

The study was also limited by the use of self-report measures which can lack objectivity. Observational measures assessing child behavior and evaluating the

parent's responses to the child's behavior could provide validity for self-report measures, as well as provide a more accurate reflection of the child's behavior, the parent's knowledge of behavioral techniques, and the parent's ability to effectively utilize behavior management strategies. Observations could also provide information regarding the parent's sense of self-efficacy based on whether they appear to have confidence or be flustered when they handle their child's behavior. Although the study by Conrad et al. (1992) included an observational measure, they evaluated the parental knowledge of child development instead of the knowledge of behavioral principles. Therefore, there remains a need for more observational studies, particularly including a measure of knowledge of behavioral principles.

The results of the present study revealed that measures of self-efficacy were predictive of child behavior, such that greater levels of self-efficacy were associated with lower intensities of child behavior. This was consistent with the findings by Morawska et al. (2009) where parental self-efficacy was found to be related to child externalizing behavior, and to the findings by Sanders and Woolley (2005) who found improvement in both parental self-efficacy and externalizing child behavior post treatment. Together, these findings imply that increasing and improving the self-efficacy of parents may result in improvement in the intensity of externalizing child behavior. This would support the aim of early-intervention parent-training programs to improve parental self-efficacy. Such programs could seek to strengthen task-specific self-efficacy by providing parents with training on how to handle specific disruptive child behaviors in a variety of settings. This could be done in a graduated

process of modeling and role-play, followed by setting up contrived situations for parents to practice utilizing techniques with feedback provided. Improving task-specific self-efficacy may simultaneously help improve the parent's self-efficacy in the parenting role; however, if role-specific self-efficacy continues to be low, parents may benefit from receiving additional supports, such as mental health referrals, being taught skills for improving their role-specific self-efficacy (e.g., thought correction, positive self-affirmations, etc.), being provided with assistance with stress management, and being directed to any additional helpful resources (e.g., financial assistance, support groups, childcare, etc.).

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APPENDICES

APPENDIX A

Demographic Questionnaire**Sex:**

Age: ___ under 21 ___ 21 – 25 ___ 26 – 30
 ___ 31 – 35 ___ 36 – 40 ___ over 40

Relationship to the Child:

___ biological parent ___ biological grandparent ___ foster parent
 ___ step-parent ___ adoptive parent ___ other biological guardian

Current Marital Status:

___ never married ___ separated ___ divorced
 ___ married ___ widowed
 ___ living with a significant other who is not the participating child's biological parent
 ___ living as married to the participating child's biological parent

Race:

___ African American ___ Caucasian ___ American Indian
 ___ Hispanic ___ Other: _____

Education:

___ less than high school diploma ___ college graduate
 ___ high school diploma/GED ___ some post graduate work
 ___ technical or vocational training ___ post graduate degree
 ___ some college

APPENDIX B

Knowledge of Behavioral Principles as Applied to Children-Abbreviated

Directions: You, as a parent, are being asked for your advice by the parents in each of the examples listed below. Use your knowledge and experience as a parent and select what you believe is the most appropriate answer to the parents' dilemma.

- 1) A child begins to whine and cry when his parents explain why he can't go outside. The parents wish to know how to react. Your advice is that the parents should:
 - (a) Ask the child why going outside is so important to him.
 - (b) Explain that it is a parent's right to make such decisions.
 - (c) Explain to the child why he should not go outside.
 - (d) Ignore the whining and crying.

- 2) A child's parents have decided to punish their child every time he plays football in the house. They wish to know which punishment would be the best to use. You suggest they:
 - (a) Make the child do extra homework.
 - (b) Clearly express their disapproval.
 - (c) Remove the child to a boring situation every time.
 - (d) Give the child a reasonable spanking.

- 3) Every time Billy's mother starts to read, Billy begins to make a lot of noise which prevents her from enjoying her reading time. She wants to know the best way to get Billy to be quiet when she reads. Your advice is:
 - (a) Severely reprimand Billy when this occurs.
 - (b) Pay close attention and praise and hug him when he plays quietly while she is reading and ignore noisy behavior.
 - (c) Call him to her and carefully explain how important it is for her to have quiet time for herself each time this occurs.
 - (d) Tell him he won't get a dessert after dinner if he continues.

- 4) A young child often whines and cries when he is around his mother. The child's mother wishes to know why he cries. You suggest that the mother should consider the possibility that:
- (a) He is trying to tell her something.
 - (b) He needs more of her attention.
 - (c) She is somehow rewarding his crying.
 - (d) She is not giving him enough attention.
- 5) A child's parents wish to know the most likely reason their child misbehaves. You suggest that it is because:
- (a) He is expressing angry feelings which he often holds inside.
 - (b) He has learned to misbehave.
 - (c) He was born with the tendency to misbehave.
 - (d) He has not been properly told that his behavior is wrong.
- 6) You also suggest that what is probably most important in helping a child behave in desirable ways is:
- (a) To teach the child the importance of self-discipline.
 - (b) To help understand right and wrong.
 - (c) Providing consistent consequences for his behavior.
 - (d) Understanding his moods and feelings as a unique person.

- 7) A mother and father want to know the most effective way of getting their child to do homework. Your advice is that they:
- (a) Say, "When you finish your homework, you can watch T.V."
 - (b) Say, "You can watch T.V. if you promise to do your homework when the show is over."
 - (c) Say, "If you don't do your homework tonight, you can't watch T.V. at all tomorrow."
 - (d) Explain the importance of school work and dangers of putting things off.
- 8) A child's parents wants to make a behavior a long-lasting habit. You suggest that they should:
- (a) Reward it every time.
 - (b) First reward it every time and then reward it occasionally.
 - (c) Promise something the child wants very much.
 - (d) Give several reasons why it is important and remind the child of the reasons often.
- 9) A father tells a child she cannot go to the store with him because she didn't clean her room like she promised. She reacts by shouting, crying, and promising she will clean her room when she gets home. What do you suggest the father should do?
- (a) Ignore her and go to the store.
 - (b) Take her to the store but make her clean her room when they return.
 - (c) Calm her down and go help her clean her room together.
 - (d) Talk to her and find out why she doesn't take responsibility.

10) Jimmy sometimes says obscene words, but only in front of his mother. She has been shocked and makes her feelings clear to him. She wishes to know how she should react when Jimmy uses obscene words. Your advice is that she should:

- (a) Wash his mouth out with soap.
- (b) Ignore him when he uses obscene words.
- (c) Tell him how bad he is and how she doesn't like him to use those words.
- (d) Explain to him the reason such words are not used.

The correct answers are 1d, 2c, 3b, 4c, 5b, 6c, 7a, 8b, 9a, and 10b

APPENDIX C

Consent Letter

Dear Parent/Caregiver,

First of all, thank you for your interest in this project. We realize that as a parent/caregiver your time is limited and we appreciate your help with this project.

I am Mairi Kirk, a graduate student in Clinical Psychology at MTSU. I am working on a research project about relationships in families with young children (ages 2 to 5). The purpose of my project is to better understand how a caregiver's knowledge of behavior management, his/her confidence, and the child's behavior are related. We hope that this project will help professionals gain a better understanding of these relationships in order to potentially develop or improve parent-training programs.

Your help with this project will take approximately 20 to 30 minutes of your time. If you want to participate, please fill out the attached questionnaires, place them in the envelope, and return the packet to either your preschool/day care provider or the researcher. Please do not include your name, your child's name, or any other information regarding your identity on any of the questionnaires to ensure confidentiality.

By returning your completed packet, you are giving your consent to be a part of the project and for your responses to be used as a part of the results. If you have any questions, please contact me at mlk3i@mtmail.mtsu.edu, or you can contact my research supervisor at MTSU, Dr. Kim Ujcich Ward at Kimberly.Ward@mtsu.edu or (615) 898-2188. For additional information about giving consent or your rights as a participant in this study, please feel free to contact the MTSU Office of Compliance at (615) 494-8918.

If you decide not to participate, that is not a problem at all. We would still like for you to put the blank questionnaires in the envelope and bring them back to us.

If you feel as though you need supports for you and/or your child, we recommend you contact the Regional Intervention Program (RIP) at (615) 890-4622 or the Guidance Center (615) 898-0771.

Again, thank you for your participation. We truly appreciate your time and the valuable information and insight you can offer to help us better understand families who have young children.

Sincerely,

Mairi Kirk
Graduate Student, Clinical Psychology
Middle Tennessee State University
mlk3i@mtmail.mtsu.edu

APPENDIX D

MTSU IRB Approval Letter

September 30, 2015

Mairi Kirk, B.S.

Department of Psychology

mlk3i@mtmail.mtsu.edu (investigator)

Protocol Title: **The Relationship Among Knowledge of Effective Behavioral Strategies, Parental Self-Efficacy, and Child Behavior**

Protocol Number: **16-2050**

Dear Investigator,

The MTSU Institutional Review Board, or a representative of the IRB, has reviewed the research proposal identified above. The MTSU IRB or its representative has determined that the study poses minimal risk to participants and qualifies for an expedited review under 45 CFR 46.110 Category 7.

Approval is granted for one (1) year from the date of this letter for 100 participants.

According to MTSU Policy, a researcher is defined as anyone who works with data or has contact with participants. Anyone meeting this definition needs to be listed on the protocol and needs to provide a certificate of training to the Office of Compliance. If you add researchers to an approved project, please forward an updated list of researchers and their certificates of training to the Office of Compliance before they begin to work on the project. Any change to the protocol must be submitted to the IRB before implementing this change.

Please note that any unanticipated harms to participants or adverse events must be reported to the Office of Compliance at (615) 494-8918.

You will need to submit an end-of-project form to the Office of Compliance upon completion of your research located on the IRB website. Complete research means that you have finished collecting and analyzing data. Should you not finish your research within the one (1) year period, you must submit a Progress Report and request a continuation prior to the expiration date. Please allow time for review and requested revisions. Your study expires October 30, 2016.

Also, all research materials must be retained by the PI or faculty advisor (if the PI is a student) for at least three (3) years after study completion. Should you have any questions or need additional information, please do not hesitate to contact me.

Sincerely,

William H. Leggett
Associate Professor of Anthropology
Department of Sociology and Anthropology
PO Box 10
Middle Tennessee State University
Murfreesboro, TN 37130