2003

Further validation of the Child Routines Inventory (CRI): relationship to parenting practices, maternal distress, and child externalizing behavior

Sara Sytsma Jordan
Louisiana State University and Agricultural and Mechanical College

FURTHER VALIDATION OF THE CHILD ROUTINES INVENTORY (CRI):
RELATIONSHIP TO PARENTING PRACTICES, MATERNAL DISTRESS
AND CHILD EXTERNALIZING BEHAVIOR

A Dissertation

Submitted to the Graduate Faculty of the
Louisiana State University and
Agricultural and Mechanical College
in partial fulfillment of the
requirements for the degree of
Doctor of Philosophy

in

The Department of Psychology

by
Sara Sytsma Jordan
B.A., Western Michigan University, 1995
M.S., Eastern Michigan University, 1998
M.A., Louisiana State University, 2001
August 2003

ACKNOWLEDGMENTS

TABLE OF CONTENTS

LIST OF TABLES

ABSTRACT

The importance of establishing predictable routines during early childhood has been consistently emphasized by parenting experts in the popular press, despite limited empirical study or understanding of their relationship to child behavior. The lack of research may be partially due to a lack of instruments suitable for measuring children's routines. The Child Routines Inventory (CRI) was developed as an empirically based parent-report measure of commonly occurring routines in school-aged children. Since its development, the CRI has demonstrated moderate correlations with related constructs, including family routines, child behavior problems, parenting stress, and maternal depression. However, child routines have not been evaluated in relation to parenting practices. Furthermore, research on children's daily stress has demonstrated a moderating impact of family routines on internalizing and externalizing behavior in children. The present study aimed 1) to further evaluate the psychometric properties of the CRI, 2) to determine factors that promote and disrupt routines in children, and 3) to examine the potential moderating role of children's routines on the relationship between maternal distress and externalizing behavior problems. Participants included 153 mothers of children between the ages of 6 and 12, comprising a heterogeneous sample. Mothers completed measures of child routines, child adjustment, parental adjustment, and parenting practices, including the Child Routines Inventory, Behavior Assessment System for Children – Parent Report Form, Brief Symptom Inventory-18, Parent Behavior Inventory, Alabama Parenting Questionnaire, and a demographics questionnaire. Results provided additional support for the construct validity of the CRI, demonstrating strong evidence of convergent validity and weaker evidence of divergent validity. Hierarchical regression analysis suggested that positive parenting practices promote and negative parenting practices disrupt child routines, with parenting

practices accounting for more variance in child routines than demographic factors or maternal distress. A second multivariate regression analysis indicated that while lack of child routines was significantly predictive of externalizing behavior problems, child routines did not moderate the impact of maternal distress on externalizing behavior problems. Future studies should continue to develop and validate the CRI and further explore the function of child routines within parenting models.

INTRODUCTION

Popular parenting resources consistently hail the benefits of structured child routines, encouraging parents to establish predictable routines for their children throughout their childhood years (Eisenberg, Murkoff, & Hathaway, 1996; Kennedy, 2001; Nelson, Erwin, & Duffy, 1998; Nelson, Lott, & Glenn, 1999). Structured routines are believed to facilitate children's emotional, behavioral, and moral development. Although there is some empirical literature in the area of family routines and family rituals (Fiese et al., 2002), systematic evidence for many of the claims pertaining to child adjustment is quite limited, particularly regarding the impact of routines specific to individual children. Consequently, the relationship between routines and child adjustment is poorly understood and the clinical benefits of child routines remain unclear.

In part, limited scientific evidence regarding the relation among child routines and child adjustment may be due to limited assessment tools for measuring child routines. Recent development of the Child Routines Inventory (CRI; Sytsma, Kelley, & Wymer, 2001) has provided a mechanism for studying child routines and their relationship to various aspects of child adjustment, thus expanding opportunity for empirical evaluation of commonly accepted claims. Although initial estimates support the reliability and validity of the measure, further evaluation of its psychometric properties is necessary.

The scientific parenting literature has identified a number of demographic variables, parental adjustment factors, and parenting practices consistently related to various aspects of child adjustment, focusing largely on correlates of children's externalizing behavior problems (Brenner & Fox, 1998; Fox, Platz, & Bentley, 1995; Gelfand & Teti, 1990; Webster-Stratton & Hammond, 1988; Webster-Stratton & Hammond, 1990). Yet, it remains unclear how child

routines relate to many of these variables, and thus, fit in to existing models of child functioning. Therefore, further exploration of the relationships between contextual factors (i.e., demographic and parental adjustment variables), parenting behaviors, and child routines, is necessary, as they pertain to the development of child behavior problems.

Furthermore, given knowledge of a wide variety of contextual factors predictive of externalizing behavior problems in children (e.g., maternal depression), researchers have recognized a need to identify additional factors which may protect children these harmful effects (Forehand, McCombs, & Brody, 1987). Some limited research on family routines suggests routines may serve a protective function, buffering children from the harmful effects of stress (Kliewer & Kung, 1998; Fiese & Wamboldt, 2000). Since early research in the area of child routines has demonstrated negative relationships with child behavior problems, maternal depression, and parenting stress and positive correlation with family routines, it is probable that child routines may serve to moderate the relationship between maternal distress and child behavior problems.

The present study describes an attempt to expand understanding of the psychometric properties of the CRI, examining the relationship among child routines and well-studied aspects of parenting and child adjustment, while beginning to identify key factors predictive of child routines, and testing the potential moderating function of child routines on the relationship between maternal distress and child behavior problems. The following literature review will examine the popular, theoretical, and empirical literature relevant to child routines, followed by a discussion of the development of the Child Routines Inventory (CRI), studies evaluating its psychometric properties, and limitations of the measure. Secondly, a review of the parenting literature evaluating theoretical models and empirical studies of variables related to externalizing

behavior problems in children will be presented. Relationships among demographic characteristics, parental psychological factors, parenting practices, and externalizing child behavior problems are discussed, in conjunction with available evidence regarding the role of family routines in child adjustment.

Child Routines Literature

Popular Press Literature on Child Routines

Parenting books and magazines consistently emphasize the importance of providing routines and structure for children from infancy through adolescence (Eisenberg et al., 1996; Kennedy, 2001; Nelson et al., 1998; Nelsen et al., 1999). Routines have been defined as activities that occur in the "same order and at about the same time each day" (Cassidy, 1992, p. 52), "a predictable sequence of events followed day after day" (Curtis, 2000, p. 27). Common routines include morning routines, mealtime routines, departure routines, and bedtime routines (Eisenberg et al., 1996; Nelson et al., 1998, 1999). A typical bedtime routine may consist of bathing, brushing teeth, saying goodnight to family members, reading a story, and being tucked into bed.

Routines are reported to be critical in the establishment of children's sense of predictability (Kase, 1999b), stability (Baker, 1998; Kase, 1999a), and feelings of security (Cassidy, 1992; Hall, 1997). In toddlers, routines are believed to foster smooth transitions (Handler, 1997) and to be related to the development of independence, trust, and security (Cassidy, 1996; Eastman, 1994; Kase, 1999a; Shimm & Ballen, 1995). Routines are thought to moderate impulsivity and overactivity in preschool and elementary children, while aiding in the development of self-control (Pruitt, 1998). In older children, routines typically focus on chores and homework (Nelson et al., 1998; Umansky, 1997). Routines are also believed to benefit

parents by decreasing parent-child conflict (Nelson et al., 1998), increasing positive parent-child interactions (Berg, 1991), helping parents feel calmer and more relaxed (Snyder, 1999), and decreasing nagging (Hogan, 1994).

Guidelines for developing child routines have emphasized components such as developing a set sequence for task completion, establishing specific rules pertaining to each task, and providing consistent consequences for compliance or noncompliance with the task, including praise for attempting steps (Christophersen, 1982). Despite this extensive emphasis on structuring children's lives through the use of rules, routines, and consistency, the parenting literature largely lacks empirical evidence to substantiate these claims, relying mainly on expert opinion in lieu of data.

<center>Theoretical Behavioral Analysis of Child Routines</center>

The concept of routines is theoretically consistent with a behavioral view of child development and psychopathology. In this model, routines may serve as setting events, distal antecedents for child compliance with instructions and positive parent-child interactions, through two or more mechanisms: by improving the predictability of stimulus cues in the environment and through aiding in the development of rule-governed behavior (Sytsma et al., 2001).

Routines may serve as setting events by improving the predictability of stimulus cues in the environment. Researchers have generated some empirical support for the notion that oppositional behavior in children may function to restore predictable, yet often aversive, maternal responses. For instance, Wahler and Dumas (1986) found that single episodes of aversive child behavior were correlated with indiscriminate maternal responses; whereas, multiple episodes of aversive child behavior were correlated with more consistent aversive maternal attention. Their predictability hypothesis suggests that a change from unpredictable indiscriminate maternal responses to more predictable maternal responses (even if they are

increasingly aversive) may negatively reinforce, and thus, contribute to the maintenance of coercive mother-child interactions. Structured routines may function as a setting event for compliance, providing the predictability and order sought by the child, thus reducing motivation for coercive interactions.

Routines also may serve as setting events for child compliance by aiding in the development of rule-governed behavior. Parent instructions or "rules" (Skinner, 1969) may be conceptualized as contingency-specifying stimuli that serve as verbal discriminative stimuli for child compliance (e.g., rule-following behavior). This general notion is the basis for many popular parent training programs (e.g., Forehand & McMahon, 1981; Barkley, 1997; Hembree-Kigin & McNeil, 1995) that teach parents to give effective instructions, to praise child compliance, and to mildly punish noncompliance. Routines may be established as part of the process during the development of instructional control. Predictable occurrence of "routine" activities may increase the probability of compliance with subsequent instructions, as the best predictor of child compliance is prior child compliance (Williams & Forehand, 1984). Through this mechanism, daily routines may come to function as setting events by occasioning child compliance. In contrast, children in a chaotic home with random occurrence of stimulus events may be unable to discriminate appropriate response times, with lack of routines contributing to unpredictable child behavior.

<center>Support for Routines in the Behavioral Treatment Literature</center>

Support for routines as an effective treatment for reducing circumscribed problem behaviors has been previously established. A variety of studies have included establishment of routines alone or as part of multicomponent packages in the treatment of mealtime difficulties (Bauman, Reiss, Rogers, & Bailey, 1983; Dadds, Sanders, & Bor, 1984), bedtime problems (Adams & Rickert, 1989; Galbraith, Hewitt, & Pritchard, 1993; Milan, Mitchell, Berger, &

Pierson, 1981; Sanders, Bor & Dadds, 1984; Seymour, 1987), morning dawdling (Adams & Drabman, 1995; Drabman & Creedon, 1979; McGrath, Dorsett, Calhoun, & Drabman, 1987; Wolfe, Kelly, & Drabman, 1981), and problem behaviors while shopping (Clark et al., 1977). Smith (2001) found that completion of daily morning and afternoon routines could be improved using a treatment comprised of pictorial cues for routines and parent education, with corresponding improvements in on-task behavior, compliance, and task completion in children with ADHD. Furthermore, a recent review of empirically supported treatments for bedtime problems in young children identified positive routines as a promising intervention (Mindell, 1999).

<div align="center">Assessment of Routines</div>

A few assessment instruments related to routines have been developed for the study of home environments (Boyce, Jensen, James & Peacock, 1983; Bradley & Caldwell, 1981). However, the Family Routines Inventory (FRI; Jensen, James, Boyce, & Hartnett, 1983) was the first instrument developed specifically to measure routines. The FRI is a self-report rating scale assessing the extent of routinization or predictability in the ongoing life of a family. The FRI has demonstrated adequate reliability and initial evidence of validity and has shown no significant relation with race or social position (Jensen et al., 1983). The measure has been used in several studies evaluating the role of family routines on various factors including the prevention of illness (Boyce et al., 1977) the prediction of social competence in low-income minority preschoolers (Keltner, 1990), the moderation of hassles and problem behavior in inner city children (Kliewer & Kung, 1998), and within multivariate models addressing family functioning, maternal psychological functioning, and child adjustment (Brody & Flor, 1997).

Limitations of existing measures are apparent. Most measures only generally assess structure and predictability in the home (Caldwell & Bradley, 1984; Coons, Gay, Fandal, Ker, &

Frankenburg, 1981) or contain a very small number of items specifically addressing routines (Ertem, Forsyth, Avni-Singer, Damour, & Cicchetti, 1997; Fiese & Kline, 1993; Moos & Moos, 1981). Although the FRI resolves these issues, it focuses on the family unit rather than specific individuals, on events occurring at the same *time* each day while neglecting other potentially important antecedent factors, has dated items, and lacks any direct evaluation with measures of child functioning. These problems precipitated the development of a new measure.

Child Routines Inventory

Definition of Child Routines. Prior to developing the measure, *child routines* were operationally defined as "observable, repetitive behaviors which directly involve the same child and at least one adult acting in an interactive or supervisory role, and which occur with predictable regularity in the daily and/or weekly life of the child" (Sytsma, 2001, p. 29). Consequently, routines are activities or events that may occur at a regular time, in the presence of a regular adult, in a regular place, and/or in a regular sequence.

CRI Development, Scales, and Psychometric Properties. The Child Routines Inventory (CRI; Sytsma, 2001; Sytsma et al., 2001) was developed in order to improve upon some of the limitations of the FRI. The CRI is a 36-item parent-report measure of child routines, designed to report the frequency of routines in the daily lives of school-age children. The items were generated through parent survey of typical child routines and examination of the relevant literature. The item pool was then subjected to expert review for preliminary item elimination and content validation. An initial sample of 80 items was administered to a large, heterogeneous sample (n=363) and underwent item analysis. Infrequently endorsed items and items with low means or item-total correlations were selected for elimination. The remaining 56 items of the CRI were evaluated in a new sample of 216 mothers of children ages 5 to 12 along with

validation measures including the Eyberg Child Behavior Inventory (ECBI) and the Family Routines Inventory (FRI).

The CRI was factor analyzed, resulting in further item reduction to yield an internally consistent, content valid scale consisting of 36 items and 4 factors (see Appendix A). The factors include Daily Living Routines, Household Responsibilities, Discipline Routines, and Homework Routines. The Daily Living Routines factor includes 11 items centered on activities of daily living, such as morning routines, bedtime routines, meals, and typical family social interaction. The Household Responsibilities factor consists of 9 items related to personal responsibilities, household chores, and hygiene. The Discipline Routines factor consists of 11 items pertaining to rules, methods of discipline, and structured family activities. Finally, the Homework Routines factor consists of 5 items related to homework and adult supervision. Routines are rated on a 5-point likert scale, with values ranging from 0 (almost never) to 4 (nearly always).

The scale has excellent internal consistency, with the total scale yielding a coefficient alpha of .90 and subscales ranging from .79 to .83, and test-retest reliability of .86 for the total scale with subscales ranging from .77 to .85. Item-total correlations ranged from .21 to .54 (M=.42). Initial validity estimates were significant, demonstrating a modest negative relationship with child behavior problems ($\underline{r}$ = -.35) and a positive relationship with family routines ($\underline{r}$ =.54). In addition, the CRI was not significantly correlated with socioeconomic status (SES).

CRI and Demographic Variables. Although the parenting literature has found various demographic variables (e.g., low SES, low income, and marital status) to be significantly related to maternal distress, negative parenting practices, and poor child adjustment (Brenner & Fox, 1998; Dadds, 1987; Webster-Stratton & Hammond, 1990), the CRI was not significantly

correlated with mother's age, mother's education level, SES, income level, or number of children in the home. There were also no mean differences across ethnicity. There were significant mean differences by marital status, with children of single parents having significantly fewer routines than children of married parents.

CRI Child Gender and Age Studies. The CRI development sample was evaluated for mean differences across child gender and age. After statistically controlling for treatment history, gender differences on the CRI were no longer present, suggesting that separate norms for males and females are not necessary.

CRI Discriminative and Construct Validity. A second study evaluated the discriminative and construct validity of CRI (Sytsma & Kelley, 2002; Sytsma-Jordan, Kelley, & Henderson, 2002). The sample consisted of children referred to a behavioral pediatrics clinic for treatment of ADHD and/or behavior problems (clinic-referred group) and non-referred children from a general pediatric clinic (control group).

It was predicted that the ADHD group would have fewer routines, higher rates of maternal depression, and higher rates of parenting stress than the Control group. Preliminary results strongly supported all initial hypotheses and were in the predicted direction at the p =.001 or .0001 level. These findings support the use of the CRI in discriminating clinic-referred from nonreferred children based on frequency of routines. Means and standard deviations can be found in Table 1.

Results also indicated a high inverse relationship between child routines and parenting stress as measured by the Parenting Stress Index-Short Form, $r(104) = -.57$. The CRI was found to have a moderate negative relationship with maternal depression as measured by the Beck Depression Inventory II, $r(118) = -.29$.

Table 1

Means and Standard Deviations Across Groups.

	CRI		PSI-SF		BDI-II	
	Mean	SD	Mean	SD	Mean	SD
ADHD Group (n=50)	96.63	18.72	96.17	24.36	15.61	9.86
Control Group (n=50)	115.12	17.45	73.64	26.55	8.39	7.59

CRI Limitations

Although the CRI appears to be a psychometrically sound, promising new measure of children's routines, it is in need of additional validation. Several puzzling findings have been generated from studies to date. For instance, it was predicted that children from families of lower SES would have fewer routines, greater parenting stress, higher rates of maternal depression, and more child behavior problems than families of higher SES. Yet none of the studies using the CRI have found any relationship between child routines and SES. While these findings are consistent with the FRI development studies (Jensen et al., 1983), they remain inconsistent with anecdotal clinical observations and research demonstrating relationships between low SES and poor child adjustment (Brenner & Fox, 1998; Webster-Stratton & Hammond, 1990).

Secondly, although there is preliminary evidence that children with ADHD perform differently than non-clinical children on the CRI and have mothers with higher rates of depression and parenting stress, there is only a moderate relationship between child routines and behavior problems and between child routines and maternal depression. Furthermore, studies on family routines (Brody & Flor, 1997; Kliewer & Kung, 1998) suggest that routines may serve a mediating or moderating function within a larger model. Therefore, further research should be

conducted to evaluate the relationship between contextual factors (e.g. demographics, parental psychopathology), parenting behaviors, and children's routines, as well as the relationship between children's routines and children's behavioral problems. A review of the parenting literature follows.

<div align="center">Parenting Literature</div>

The parenting literature has generated a great deal of theory and empirical evidence to better understand the relationship between different aspects of parenting and their impact on child behavior. For many years, theoretical models such as Baumrind's (1971, 1991) parenting styles dominated the literature. Since then, more complex models have been borne from empirical study, focusing on the role of various demographic, parental psychological factors, and parenting practices on parent-child interactions and child adjustment. A summary of these models and specific determinants of externalizing behavior problems is provided, followed by a discussion of the role of routines and child adjustment.

<div align="center">Parenting and Child Adjustment: Models and Empirical Research</div>

Theoretical Models of Child Adjustment

Early childhood theorists generally agreed that parenting behavior influenced child development. However, psychodynamic and learning theorists disagreed on the relative importance of parenting attitudes compared with specific parenting practices, and their mechanism of influence on child behavior (Darling & Steinberg, 1993). In the 1960's, Baumrind developed the first unified theory of child socialization focusing on the role of parenting style and belief systems regarding parental authority in child development (Darling & Steinberg, 1993). Her tripartite model, encompassing Authoritative, Authoritarian, and Permissive parenting styles, has remained a popular theory for conceptualizing parental influence on child behavior (Baumrind, 1971, 1991).

Empirically Based Models of Child Adjustment

In recent years, more empirically based models of externalizing behavior have surfaced. Several noteworthy models have been based on Patterson's (1982) Coercive Family Process Model. Patterson's coercion model states that parental mismanagement of aversive behavior and failure to promote prosocial behavior in infancy and early childhood shapes and maintains coercive parent-child interactions. As a result, children fail to learn age-appropriate social skills and are reinforced for resorting to coercive behaviors because escalation of aversive child behavior is frequently followed by termination of parent commands. This model also predicts that changes in disciplinary practices, such as increased consistency, increased supervision, reduced harshness, and altered patterns of negative reinforcement in parent-child interactions are related to reductions in externalizing behavior.

Since then, similar models have expanded on interrelationships among environmental features such as stressors, parental psychopathology, marital functioning, social support, extrafamilial interactions, and parenting skills deficits in the development and maintenance of oppositional behavior in children (Dadds, 1987; Forehand, 1986; Wahler & Dumas, 1987) and on general child adjustment (Cummings & Davies, 1994). For example, the recent model proposed by Cummings and Davies (1994) attempted to integrate interrelationships among family relationship variables (i.e., parental characteristics, parent-child relations, and marital functioning) to explain the broad impact of maternal depression on child development.

In summary, theoretical and empirically based models of child functioning have changed over time from a focus on parenting style to broader environmental and familial factors associated with the development and maintenance of externalizing behavior problems in children. Next, these specific determinants will be reviewed.

Determinants of Externalizing Behavior Problems in Children

Researchers consistently have established relationships between certain demographic and extrafamilial features, parental adjustment, parenting practices, and poor child adjustment. First, demographic and extrafamilial features such as single marital status, lower parental education level, younger parental age, and lower family SES have been shown to predict behavior problems in children (Brenner & Fox, 1998; Fox et al., 1995; Webster-Stratton & Hammond, 1990). Extrafamilial variables such as life stressors (e.g., economic problems, divorce, and illness of a family member) and insular interactions have also been related to poor child adjustment (Dadds, 1987; Forehand, 1986; Wahler, 1980). While various demographic variables have consistently demonstrated relationships with externalizing behavior, they appear to account for a small proportion of variance, with parenting practices accounting for more variance in behavior problems than all demographic variables combined (Brenner & Fox, 1998).

Second, parental psychological variables such as marital problems (Jouriles, Pfiffner, & O'Leary, 1988), lack of social support, maternal depression (Dadds, 1987), and parenting stress (Eyberg, Boggs, & Rodriguez, 1992; Webster-Stratton & Hammond, 1990), have all been associated with externalizing problem behavior. Research also suggests that the impact of marital dysfunction on child maladjustment may be due to lack of social support. As a result, some researchers have proposed that social and marital support may moderate the relationship between stressors and perceptions of child adjustment (Dadds, 1987), with positive extrafamilial interactions inversely relating to child behavior problems (Wahler, 1980).

The majority of research on parental psychological variables has focused on the relationship between maternal depression and children's adjustment (for reviews, see Cummings & Davies, 1994; Downey & Coyne, 1990; Gelfand & Teti, 1990). Perhaps this is because children of depressed mothers are 2 to 5 times more likely to develop behavior problems than

children of nondepressed mothers (Welsh-Allis & Ye, 1988). Maternal depression has been consistently associated with cognitive biases and poor parenting practices (Cummings & Davies, 1994). For instance, depressed mothers tend to provide less structure, guidance, and rule enforcement (Goodman & Brumley, 1990), resulting in more coercive disciplinary practices and fewer positive parent-child interactions (Gelfand & Teti, 1990). Maternal depression reportedly affects multiple aspects of family life, including marital functioning, family stress levels, and social isolation, all of which subsequently influence child development (Gelfand & Teti, 1990).

Finally, negative, hostile, and coercive parenting practices have been consistently correlated with generally poor adjustment in children, and with externalizing behavior problems in particular (Gelfand & Teti, 1990). For instance, Wakschlag and Keenan (2001) found that parental harshness, low behavioral responsiveness, and parenting stress were correlated with disruptive behavior in low-income preschool-aged children. Furthermore, Webster-Stratton and Hammond (1988) found that depressed mothers with conduct problem children engaged in higher rates of commands and criticism, and spanked more often. On the other hand, positive parenting practices have been shown to have a protective function in resiliency models of child adjustment. For example, Lanclos (2001) evaluated the role of parenting practices as a moderator of children's exposure to violence and children's psychosocial adjustment. Findings suggested that positive parenting practices buffered the effects of exposure to violence on children's social skills/conduct. Therefore, it seems parenting practices can have either positive or detrimental effects on child adjustment.

In summary, available evidence indicates that child adjustment results from a series of interdependent relations among contextual, familial, and parental behavioral influences. However, it is likely that many of these demographic and psychological variables influence one another and are related to child adjustment through parenting practices.

Routines and Child Adjustment

Despite a plethora of research on models and specific determinants of externalizing behavior problems in children, the role of routines in child development is largely unexplored. Research on routines has suggested that many demographic factors (e.g., SES, ethnicity) have not significantly correlated with routines (Sytsma et al., 2001; Jensen et al., 1983), while others (e.g., marital status) have. Contrary to expectations, routines have only moderately correlated with child behavior problems and maternal depression, while highly correlating with parenting stress. No research has evaluated the relationship between child routines and parenting practices, another critical determinant of behavior problems in children. Also, very little is known about factors that predict the establishment and use of routines in children or about their impact on existing relationships between parental adjustment, parenting practices, and externalizing behavior problems. Clearly, a better understanding of these relationships is necessary before embarking on interventions targeting their use.

Child Routines and Parenting Practices

Currently, research fails to clearly delineate how to conceptualize and incorporate variables such as child routines into existing models of child psychopathology. Some may categorize children's routines as child behavior, others as parenting practices. However, routines do appear to differ conceptually from traditional parenting behaviors such as disciplinary practices. Exploration of the relationships among children's routines, parenting practices, and child behavior is needed.

Additionally, more research is needed to better understand puzzling findings, such as lower than expected relationships with child behavior problems. A systematic evaluation of potential factors that may predict and disrupt children's routines would be beneficial. Parenting behaviors are of particular interest, for several reasons. First, children's routines are generally

established and enforced by parents. Second, routines are neither clearly child or parent

behavior, but rather, a product of parent-child interaction. Finally, both parenting behaviors and

child routines have been related to maternal depression and child behavior problems. Findings

have generally supported interrelationships among maternal depression, negative parenting

practices, and externalizing behavior problems and between positive parenting practices and

positive adjustment. Therefore, it is expected that negative parenting practices would be related

to low rates of routines and positive parenting practices would be related to high rates of

routines.

The Role of Routines on Child Adjustment

Moderators and Mediators. Moderator variables are variables that affect the strength or

direction of the relation between a predictor variable and the criterion variable. By contrast,

mediator variables are those that account for or explain the relation between the predictor and

criterion variables (Baron & Kenny, 1986; Holmbeck, 1997). According to Kliewer and Kung

(1998), moderators influence the degree of association between a predictor and a criterion

variable, but fail to explain why this relationship is observed, whereas mediators indicate the

circumstances in which a particular effect occurs.

Family Routines Research. Research exploring the role of family routines on child and

adolescent adjustment has supported both mediating and moderating functions. Brody and his

colleagues have found that family routines mediate the relationship between financial resources

and child adjustment through children's self-regulation (Brody & Flor, 1997; Brody, Flor, &

Gibson, 1999). Initially, they found that high levels of family routines were positively related to

children's self-regulation, which in turn, was positively related to academic achievement and

negatively related to internalizing and externalizing behavior problems in school-aged children.

An alternative model directly linked family routines to academic achievement and lower levels

of internalizing problems. However, contrary to predictions, these models failed to confirm a link between maternal depression and family routines (Brody & Flor, 1997). These results are particularly interesting in light of our research showing moderate negative relationships between child routines and maternal depression in a more diverse sample (Sytsma & Kelley, 2002).

Other researchers have supported moderating functions of family routines. For instance, Markson and Fiese (2000) found that family rituals and routines served to partially buffer children with asthma from development of anxiety. In addition, Kliewer and Kung (1998) found that various family interaction variables, including routines, moderate the relationship between daily stressors and internalizing and externalizing behavior problems in inner-city children.

In summary, models have suggested that routines may function as mediating or moderating variables. Family routines have been have conceptualized both as protective or buffering factors relative to internalizing and externalizing behavior problems (Markson & Fiese, 2000; Kliewer & Kung, 1998) and as mediators of economic factors and child outcomes (Brody & Flor, 1997). Yet the role of children's routines has not been specifically evaluated in parenting models. However, differences found in studies of family routines and child routines highlight the importance of evaluating routines specific to children when studying adjustment of children. Furthermore, Forehand and colleagues (1987) identified a need to determine factors that either place children at-risk or buffer them from the deleterious effects of setting events such as parental depression. Further exploration of the relationships between child routines and known relations among demographic variables, parental adjustment, and parenting practices in the development of child psychopathology is needed.

<div align="center">Summary and Rationale for Current Study</div>

Childhood routines have been hailed as essential for promoting positive child adjustment across a range of domains. Routines have been effective in the management of bedtime

problems (Milan et al., 1981; Sanders et al., 1984), mealtime problems (Dadds et al., 1984), and morning dawdling (Adams & Drabman, 1995; McGrath et al., 1987). However, systematic study of the impact of child routines on child development has been largely untested, in part, due to lack of adequate measurement tools. The recent development of the CRI has allowed for further empirical analysis of the role of children's routines in child development. The CRI has demonstrated good reliability and adequate content, factorial, construct, and discriminative validity (Sytsma et al., 2001; Sytsma & Kelley, 2002). Although preliminary research supports use of the CRI, additional validation of the measure is warranted.

One form of construct validation is convergent and divergent validity. This method states that the CRI should show strong correlations with theoretically similar constructs and low or no correlation with dissimilar constructs (Anastasi, 1988). Although preliminary evidence supports the convergent validity of the CRI, correlations have been slightly lower than expected and divergent validity has not been examined. Further construct validation attempts should be focused on demonstrating relationships with parenting practices and child outcomes. In addition, further research with the CRI should incorporate methods for detecting socially desirable and inconsistent response sets.

Research on parenting has consistently demonstrated relationships between many demographic variables, parental psychological variables, parenting practices, and poor child adjustment. Demographic variables such as low SES, single parenthood, low education, low income, and young maternal age consistently have been related to child behavior problems (Brenner & Fox, 1998; Webster-Stratton & Hammond, 1990). Similarly, children whose mothers experience significant levels of psychological distress, marital discord, or high rates of parenting stress tend to be maladjusted (Cummings & Davies, 1994; Gefand & Teti, 1990). Finally, negative, hostile, and coercive parenting practices have been consistently related to

negative parent-child interactions, resulting in poor parent-child relationships and behavior problems (Forehand, 1986; Gelfand & Teti, 1990), while positive parenting practices have been related to positive adjustment in children (Lanclos, 2001).

A few demographic and parental adjustment variables have been evaluated in relation to children's routines, with only marital status, maternal depression, and parenting stress showing significant relationships (Sytsma et al., 2001; Sytsma-Jordan et al., 2002). Parenting practices have not been evaluated in relation to children's routines. However, it is expected that positive parenting practices would promote establishment of children's routines, while negative parenting practices would disrupt children's routines.

Finally, variables such as family routines have been suggested as buffers or protective factors in the relationship between contextual variables and child outcomes. It is presumed that child routines may serve a similar function, and that children's routines may moderate the negative impact of parental distress on child maladjustment.

The purpose of the present investigation is to 1) evaluate the stability of the psychometric properties of the CRI and provide further evidence to support the validity of the CRI, 2) to determine factors that promote and disrupt routines in children, and 3) to further examine the potential moderating role of children's routines on the relationship between maternal distress and child externalizing behavior problems.

Hypotheses

1. The psychometric properties of the CRI will be upheld in the current sample (e.g., comparable internal consistency and validity coefficients).

2. There is no significant relationship between child routines and socioeconomic status.

3. The convergent/divergent validity of the CRI will be upheld.

a) <u>Convergent</u>: Child routines will be positively correlated with positive parenting behaviors. Child routines will be inversely correlated with negative, coercive, and passive parenting methods, externalizing behavior problems, and adaptability.

b) <u>Divergent</u>: The CRI will demonstrate low correlation with internalizing behavior problems and attention problems and insignificant correlation with theoretically unrelated constructs such as adaptive skills and atypicality.

4. Marital status, maternal psychological functioning, and parenting behavior will account for a significant proportion of the variance in the use of child routines. It is expected that single parent status, higher maternal distress, and negative parenting practices will disrupt routines, with married status, lower maternal distress, and positive parenting practices predicting more consistent routines. It is further expected that demographic variables will account for little variance in the prediction of routines relative to maternal distress and parenting practices.

5. Child routines will moderate the relationship between maternal distress and child externalizing behavior. The interaction of Maternal Distress x Child Routines will be significant after controlling for covariates and for the main effects of Maternal Distress and Child Routines. More specifically, mothers with high levels of maternal distress but who also report high levels of child routines will report lower levels of child behavior problems than mothers who report high levels of distress but lower levels of child routines. In addition, mothers with low levels of distress and high rates of child routines will report the lowest amount of child behavior problems. Finally, mothers who report low distress and low child routines will report rates of child behavior problems similar to those found in the mothers who reported high distress and high routines

METHOD

Participants

Mothers (defined as female primary caretakers) of 153 children between the ages of 6 and 12 (M=8.76, SD=1.96) were recruited from pediatric clinic waiting rooms at two large pediatric practices in Baton Rouge, Louisiana. One of the clinics was a public pediatric clinic predominantly serving socioeconomically disadvantaged, African-American patients through the charity hospital system in Louisiana. The other clinic was a private pediatric clinic serving predominantly middle and upper SES, Caucasian families. SES was measured using Hollingshead's (1975) four-factor index of social position, which takes into account education, occupation, sex, and marital status in estimating SES. Using this index, a value ranging from 8 to 66 is calculated, which can be further subdivided into five levels, with lower levels indicating lower SES. Table 2 shows the demographic characteristics and SES distribution among participants.

Overall, mothers had a median age of 36 years (range = 22 to 55), 64.7% were Caucasian, 70.6% were married, and 69.2% had education beyond high school. The median SES value fell in level IV, corresponding to medium-sized business, minor professional, and technical occupations. This indicates that half of our sample was predominantly middle-to-upper SES. Yet, approximately 30% of the sample reported an annual income less than $25,000.

Children comprising the sample were quite evenly distributed by gender (50.3% male) and age, as shown in Table 2. In addition, 7.9% of the children received special education services and 15.8% either had previously or currently received treatment for behavior problems.

Measures

Several parent-report scales were used to gather information regarding demographic variables, child routines, child and maternal adjustment, and parenting practices.

21

Table 2

Demographic Characteristics of the Sample

	Public clinic Freq. (%) (n=53)	Private clinic Freq. (%) (n=100)	TOTAL Freq. (%) (n=153)
Mother's Race			
White	6 (11.3)	93 (93.0)	99 (64.7)
Black	45 (84.9)	7 (7.0)	52 (34.0)
Hispanic	1 (1.9)	0 (0)	1 (0.7)
Asian	1 (1.9)	0 (0)	1 (0.7)
Parent Marital Status			
Never Married, Living Alone	17 (32.1)	3 (3.0)	20 (13.2)
Never Married, Living with Someone	5 (9.4)	2 (2.0)	7 (4.6)
Married	22 (41.5)	86 (86.0)	108 (70.6)
Separated	2 (3.8)	1 (1.0)	3 (2.0)
Divorced	7 (9.4)	8 (8.0)	15 (9.8)
Child's Gender			
Male	25 (47.2)	52 (52.0)	77 (50.3)
Female	28 (52.8)	48 (48.0)	76 (49.7)
Child's Age			
6	8 (15.1)	17 (17.0)	25 (16.3)
7	6 (1.3)	19 (19.0)	25 (16.3)
8	7 (13.2)	13 (13.0)	20 (13.1)
9	11 (20.8)	17 (17.0)	28 (18.3)
10	8 (15.1)	12 (12.0)	20 (13.1)
11	5 (9.4)	12 (12.0)	17 (11.1)
12	8 (15.1)	10 (10.0)	18 (11.8)
SES Level			
I	6 (11.8)	0 (0)	6 (4.0)
II	18 (35.3)	0 (0)	18 (12.1)
III	18 (35.3)	7 (7.1)	25 (16.8)
IV	8 (15.7)	56 (57.1)	64 (43.0)
V	1 (2.0)	35 (35.7)	36 (24.2)

Demographics Questionnaire

A demographics questionnaire was used to gather descriptive information about each participant and target child. Information requested on the demographics questionnaire included descriptive information about the parent(s) and target child, including age, gender, race, education level, income, and occupation (see Appendix B).

Child Routines Inventory (CRI)

The CRI (Sytsma et al., 2001) is a 36-item parent-report measure of child routines, designed to report the frequency of routines in the daily lives of children. The scale consists of 4 factors: Daily Living Routines, Household Responsibilities, Discipline Routines, and Homework Routines (see Appendix A for factor loadings). Routines are rated on a 5-point likert scale, with values ranging from 0 (almost never) to 4 (nearly always). The scale has excellent internal consistency, with coefficient alpha of .90, and test-retest reliability of .86. Initial validity estimates were significant, demonstrating a modest negative relationship with child behavior problems ($\underline{r}$= -.35) and a positive relationship with family routines ($\underline{r}$=.54). Results from another study supported the discriminative validity of the CRI between children referred for ADHD and pediatric controls and indicated inverse relations between child routines and parental stress ($\underline{r}$=-.57) and maternal depression ($\underline{r}$=-.29) (Sytsma-Jordan et al., 2002). The CRI has a sixth grade reading level (Sytsma et al., 2001). For the present study, two new validity scales were piloted. Three low frequency items from the initial development study that were rarely endorsed as occurring 'often' or 'nearly always' were included and summed to create a Defensive Responding scale to identify respondents with a tendency to present their children's behavior as unrealistically favorable (Gerard, 1994) (see Appendix C for new 39-item version of the CRI). In addition, several highly correlated item pairs from the development sample were

identified to create an Inconsistency Index to aid in detection of random or inconsistent responding (Gerard, 1994).

<center>Behavior Assessment System for Children (BASC)</center>

The BASC (Reynolds & Kamphaus, 1992) is a broadband measure of child and adolescent psychopathology comparable in many ways to the Child Behavior Checklist (Achenbach, 1991). While the BASC has clinical subscales similar to the CBCL, the BASC has the added benefit of validity indicators and scales measuring adaptive skills. The parent-report version has 126 to 138 items, rated on a 4-point likert scale ranging from "never" to "almost always". The BASC is comprised of a global measure (Behavioral Symptoms Index), 3 composite scales (Externalizing, Internalizing, and Adaptive Skills), and 12 subscales, which vary slightly by age group (Hyperactivity, Aggression, Conduct Problems, Anxiety, Depression, Somatization, Atypicality, Leadership, Withdrawal, Attention Problems, Adaptability, and Social Skills). The reliability of the parent-report version of the BASC has been demonstrated through good internal consistency, with composite scores ranging from .84 to .93 and subscales generally in the mid to upper .70s, and good test-retest reliability, with median values of .70 (adolescent) to .88 (child). A variety of studies have also demonstrated its factorial and construct validity. The factor structure of the BASC has been examined through both exploratory and confirmatory methods. Subscales of the BASC also have been shown to correlate highly with the CBCL, with Externalizing composites (.71 to .84) being more highly correlated than Internalizing composites (.65 to .74). In addition, the BASC includes group profiles for a variety of clinical groups such as children with conduct disorders, ADHD, learning disabilities, and mild mental retardation.

<center>Brief Symptom Inventory 18 (BSI-18)</center>

The BSI-18 (Derogatis, 1996) is an 18-item self-report measure of psychological symptoms in medical and community adult populations. The BSI –18 is a short form of the

SCL-90-R (Derogatis, 1994) consisting of 1 broad factor (Global Severity Index) and 3 subscales (Somatization, Depression, Anxiety). Symptoms are rated on a 5-point likert scale, with values ranging from 0 (not at all) to 4 (extremely) rating degree of distress experienced due to each symptom over the past seven days. The purpose of the scale is to screen for psychological problems in normal populations, to evaluate symptoms changes over time, and to support managed care decisions (Derogatis, 1996). The SCL-90-R has been used extensively in research (Derogatis, 1994), with the Global Severity Index of the SCL-90-R being used in the child clinical literature as a global measure of parental distress (Linares et al., 2001). The subscales of the BSI-18 have correlated highly with the SCL-90-R (>.90). The subscales of the SCL-90-R have demonstrated high internal consistency (.77 to .90) and one-week test-retest reliability (.78 to .90) and generated adequate evidence supporting its concurrent, convergent, discriminant, and construct validity (Derogatis, 1994). The BSI has a sixth grade reading level (Derogatis, 1996).

Parent Behavior Inventory (PBI)

The PBI (Lovejoy, Weis, O'Hare, & Rubin, 1999) is a 20-item measure of parental responses to the behavior of their preschool and school-aged children. Items address common disciplinary practices and quality of typical parent-child interaction. The scale consists 2 factors: Hostile/Coercive and Supportive/Engaged. Items are scored on a 6-point likert scale ranging from 0 (not at all true) to 5 (very much true). The PBI has demonstrated good internal consistency (.81-.83), adequate test-retest reliability (.69-.74) and excellent interrater reliability (.87-.90). The validity of the PBI has also been supported through content and construct validation, moderately relating to measures of parental affect, parental stress, and child behavior problems. The factorial validity of the measure has also been supported through confirmatory factor analysis.

<u>Alabama Parenting Questionnaire (APQ)</u>

The APQ (Frick, 1991) is a 42-item measure of parenting practices related to disruptive

behavior problems in children aged 6 to 13. The scale consists of 6 subscales: Involvement,

Positive Parenting, Poor Monitoring/Supervision, Inconsistent Discipline, Corporal Punishment,

and Other Disciplinary Practices. Items are scored on a 5-point likert scale ranging from 1

(never) to 5 (always). The parent global report version of the measure has been found to be

reliable, with generally adequate internal consistency (.67 to .80), aside from the Corporal

Punishment subscale (.46), and adequate test-retest reliability (.66 to .89). The APQ has also

demonstrated adequate convergent validity. For the present study, subscales with the highest

reliability were used (i.e., Involvement, Positive Parenting, Poor Monitoring/ Supervision, and

Inconsistent Discipline).

Procedure

Mothers of children between the ages of 6 and 12 years were asked by the experimenter

and/or a research assistant to participate in a research study about parenting and child routines.

Written and verbal explanations of the study purpose and protocol were provided and

participants were given an opportunity to ask questions about the study. All mothers were

offered $5 cash for completion of the research packet.

Following informed consent, questionnaire packets consisting of a consent form, written

instructions, and all measures were distributed. Monetary incentives were distributed after

reviewing measures for completeness. Twenty-seven mothers refused the $5 offer. All

participants were offered information regarding referral sources and procedures for obtaining

psychological treatment for themselves and their child.

RESULTS

Prior to analysis, variable distributions were evaluated to detect violation of assumptions for multiple regression analysis, as recommended by Tabachnick and Fiddell (2001). No significant violations were detected for the proposed models.

Psychometric Features of the CRI

The first main purpose of the study was to demonstrate support for the psychometric features of the CRI. Three hypotheses were tested. The first hypothesis stated that the psychometric properties of the CRI would be upheld in the current sample. To test this hypothesis, coefficient alpha was calculated to verify internal consistency reliability. Results were comparable to those found in the initial development of the CRI and are shown in Table 3.

Table 3

Internal Consistency of the Child Routines Inventory

	Coefficient α (Present Sample)	Coefficient α (CRI Development Sample)
1: Daily Living Routines	.80	.81
2: Household Responsibilities	.80	.83
3: Discipline Routines	.79	.82
4: Homework Routines	.82	.79
CRI Total Scale	**.90**	**.90**

Means and standard deviations for the CRI subscales and Total score were comparable to previous samples (see Table 4). Validity coefficients were also evaluated and found to be comparable to previously obtained correlations with maternal depression and child behavior problems (see Table 5).

27

Table 4

CRI Means and Standard Deviations Across Samples

	Sample 1[a] M (SD)	Sample 2[b] M (SD)	**Current Sample M (SD)**
Daily Living Routines	36.91 (5.80)	35.14 (7.18)	**36.10 (5.74)**
Household Responsibilities	24.60 (6.41)	26.58 (5.97)	**24.73 (5.83)**
Discipline Routines	36.38 (5.92)	35.78 (5.96)	**34.55 (5.65)**
Homework Routines	16.86 (4.02)	17.54 (3.60)	**17.02 (3.82)**
CRI Total Score	114.74 (16.31)	115.04 (17.78)	**112.44 (16.52)**

[a] Heterogeneous sample ages 5 to 12 (Sytsma et al., 2001).
[b] Non-clinical sample ages 5 to 12 (Sytsma-Jordan et al., 2002).

Table 5

CRI Validity Coefficients in Prior and Present Samples

	Child Behavior Problems		Maternal Depression	
	BASC Externalizing (Present) (n=149)	ECBI Intensity (Prior[a]) (n=211)	BSI-18 Depression (Present) (n=153)	BDI-II (Prior[b]) (n=118)
Daily Living	-.32**	-.33**	-.26**	-.18*
Household Resp.	-.35**	-.29**	-.21*	-.32**
Discipline	-.26**	-.14	-.22**	-.26**
Homework	-.41**	-.27**	-.18*	-.24**
CRI Total Score	**-.42****	**-.35****	**-.28****	**-.29****

Note: BASC = Behavior Assessment System for Children - Parent Report Form (General T-scores); ECBI = Eyberg Child Behavior Inventory; BSI-18 = Brief Symptom Inventory-18; BDI-II = Beck Depression Inventory-II
* $p<.05$, ** $p<.01$, [a] Sytsma, et al., 2001, [b] Sytsma-Jordan, et al., 2002

SES and the CRI

Based on prior studies in the area of family routines (Jensen et al., 1983) and child

routines (Sytsma et al., 2001; Sytsma & Kelley, 2002), the second hypothesis stated that there

would be no significant relationship between child routines and socioeconomic status. A

Pearson Product-Moment correlation was calculated correlating CRI Total score and SES, as

measured by the Hollingshead four-factor index of SES (Hollingshead, 1975). As expected,

there was no significant relationship between child routines and socioeconomic status, r(149) =

.138, p > .05, 2-tailed. However, there was a significant relationship between the CRI Daily

Living Routines and SES, r(149) = .334, p<.01, 2-tailed. In follow-up analyses, lower SES was

found to be significantly related to more negative parenting practices, r(149) = -.36, p < .01, most

notably poor monitoring/supervision, r(149) = -.54, p < .01, as well as higher levels of maternal

distress, r(149) = -.24 p, < .01.

CRI Validity Scales

Preliminary analyses also included examination of pilot data from two new validity

scales, Defensive Responding and Inconsistency Index, to evaluate their utility. The Defensive

Responding scale was constructed by identifying items with low frequency of endorsement in the

initial CRI development sample. The purpose of the scale was to detect respondents with a

tendency to present their child as having a unrealistically high frequency of routines or

respondents prone to a high rating response set (Gerard, 1994). Items from the initial CRI

development sample were rank-ordered by lowest percentage of endorsement as occurring

"often" or "nearly always" to identify infrequently endorsed items. Three items were selected,

including "My child makes bed each morning," "My child practices for lessons, such as piano or

dance at about the same time each day," and "My child reads or listens to the Bible or other

devotional book with family each day." When these three items were summed, 6.9% of the CRI

development sample had a summary score of 9 or higher, 3.7% had a score of 10 or higher. We presumed that if these percentages were consistent in the current sample, the new scale could potentially be used to identify defensive responding or favorable response sets. In the present sample, 13.7% of respondents obtained a summary score of 9 or higher, 7.8% obtained a score of 10 or higher, and 3.3% obtained a summary score of 11 or higher. These results suggest that a more conservative cut-off guideline of 10 is preferred when identifying potential cases of defensive responding and that further evaluation of reliability and validity of this scale is necessary.

The Inconsistency Index also was constructed following guidelines demonstrated by Gerard (1994). In theory, highly correlated item pairs are tapping a similar construct, so items within each pair should be scored similarly and significant intra-pair score deviations should indicate inconsistent, inattentive, or random responding. Therefore, to develop the scale, item pairs from the initial CRI development sample with high inter-item correlations were identified and ranked ordered by inter-item correlation. Seven pairs were identified with inter-item correlations comparable to the range identified by Gerard (1994) ($\underline{r}$=.57 to .73). Next, intra-pair differences were calculated and the number of pairs with a 2-point or higher discrepancy were tallied. The mean score was .76 and the standard deviation was 1.01. Inconsistent responses to 3 or more of these pairs were rare in the normative sample, occurring in 6.2% of cases. When absolute differences across all pairs were summed, less than 5% of the normative sample had a sum or 9 or higher. In the present sample, the mean score was .86 and standard deviation was 1.01. Inconsistent responses to 3 or more pairs occurred in 9.2% of cases. When absolute differences across all pairs were summed, 6.5% of the sample had a sum or 9 or higher and 3.3% had a sum of 10 or higher. These preliminary results suggest a summary intra-pair difference score may be more reliable in detecting potentially inconsistent responding across samples.

Further evaluation of the reliability and validity of this scale should be conducted in new samples.

<center>CRI Convergent and Divergent Validity</center>

The third hypothesis stated that the convergent/divergent validity of the CRI would be supported. To evaluate this hypothesis, bivariate correlations between the CRI Total score and various subscale and composite scales of the BASC, PBI, and APQ were calculated (see Table 6). As evidence of convergent validity, it was expected that child routines would show positive relationships with positive parenting behaviors and inverse relationships with negative, coercive, and passive parenting methods; externalizing behavior problems; and adaptability. As evidence of divergent validity, it was further expected that the absolute value for the relationships between child routines and internalizing behavior problems and attention problems would be smaller and the relation between routines and adaptive skills and atypicality would be non-significant.

The present findings provide further evidence in support of the convergent validity of the CRI, but generally weak evidence of divergent validity (see Table 6). As predicted, the CRI Total Score had significant positive correlation with positive parenting measures, and significant negative correlation with negative parenting measures and measures of child externalizing behavior problems. An overall Positive Parenting Composite comprised of standardized forms of the three positive parenting subscales was significantly correlated with the CRI Total, r(153)=.51, p<.001, and individual positive parenting subscales ranged from r(153)=.31 to .51, p<.001. An overall Negative Parenting Composite comprised of standardized forms of the three negative parenting subscales showed a significant inverse relationship with routines, r(153) = -.38, p<.001, with individual negative parenting subscales ranging from r(153) = -.23 to -.34, p<.01. The CRI Total scale also demonstrated significant negative correlations with measures of externalizing behavior problems. A significant relationship was observed for the CRI and the

Table 6

Convergent/Divergent Validity of the Child Routines Inventory

| | Child Routines Inventory | | | | |
	1. DL	2. HR	3. DIS	4. HW	**TOTAL**
Parenting Measures					
Positive Parenting Composite (n=153)	**.43****	**.28****	**.56****	**.30****	**.51****
1. PBI Supportive/Engaged	.43**	.27**	.45**	.20*	**.44****
2. APQ Involvement	.45**	.28**	.53**	.31**	**.51****
3. APQ Positive Parenting	.19*	.14	.41**	.24**	**.31****
Negative Parenting Composite (n=153)	**-.39****	**-.23****	**-.27****	**-.31****	**-.38****
1. PBI Hostile/Coercive	-.14	-.22**	-.19*	-.19*	**-.23****
2. APQ Poor Monitoring/Sup.	-.47**	-.04	-.22**	-.36**	**-.34****
3. APQ Inconsistent Discipline	-.24**	-.25**	-.19*	-.13	**-.27****
Clinical Adjustment Measures					
BASC BSI Composite (n=149)	**-.32****	**-.37****	**-.25****	**.36****	**-.41****
Externalizing Composite	**-.34****	**-.36****	**-.28****	**-.43****	**-.44****
1. Hyperactivity	-.35**	-.34**	-.27**	-.37**	**-.42****
2. Aggression	-.24**	-.34**	-.23**	-.34**	**-.36****
3. Conduct Problems	-.34**	-.29**	-.25**	-.47**	**-.41****
Internalizing Composite	**-.18***	**-.25****	**-.14**	**-.28****	**-.26****
1. Anxiety	-.02	-.23**	-.05	-.05	**-.12**
2. Depression	-.17*	-.21*	-.12	-.30**	**-.24****
3. Somatization	-.23**	-.15	-.16*	-.30**	**-.26****
Adaptive Skills Composite	**.43****	**.30****	**.34****	**.27****	**.43****
1. Adaptability (n=133)	.32**	.30**	.26**	.31**	**.37****
2. Social Skills	.42**	.32**	.36**	.22**	**.44****
3. Leadership	.38**	.21**	.29**	.20*	**.35****
Atypicality	-.34**	.21*	-.20*	-.29**	**-.33****
Withdrawal	-.11	-.05	-.08	-.06	**-.10**
Attention Problems	-.33**	-.37**	-.29**	-.31**	**-.42****

Note: DL = Daily Living Routines, HR = Household Responsibilities, DISC = Discipline Routines, HW = Homework Routines; PBI = Parenting Behavior Inventory; APQ = Alabama Parenting Questionnaire; BASC = Behavior Assessment System for Children – Parent Report Form (Gender T-scores); BSI = Behavioral Symptoms Index
* $p < .05$, ** $p < .01$

BASC Externalizing Composite score, $r(149) = -.44$, $p<.001$, with individual externalizing subscales ranging from $r(149) = -.36$ to $-.42$, $p<.001$. All of these findings support the convergent validity of the CRI.

Evidence of divergent validity was less robust. The CRI showed weak negative, yet significant correlation with BASC Internalizing Problems, $r(149) = -.26$, $p < .01$. The BASC Depression and Somatization subscales were weaker still, yet remained significant at the $p <.01$ level. Notably, the Anxiety subscale was not significantly correlated with the CRI Total score, $r(149) =-.12$, $p>.10$, although it was weakly correlated with the Household Responsibilities subscale, $r(149) =-.23$, $p<.01$. In addition, the BASC Withdrawal scale failed to demonstrate a relationship with the CRI Total, $r(149) = -.10$, or with any of the individual CRI subscales, $r(149) = -.05$ to $-.11$. These findings provide preliminary support for the divergent validity of the CRI.

Contrary to prediction, the CRI Total score was significantly related to a few subscales of the BASC expected to show minimal or insignificant relationships. The CRI Total had a significant inverse relationship with the Attention Problems subscale, $r(149) = -.42$, $p<.001$, and significant positive relationships with subscales measuring adaptive skills, including Social Skills, $r(149) = .44$, $p<.001$; Leadership, $r(149) = .35$, $p<.001$; and, most surprisingly, Adaptability, $r(133) = .37$, $p<.001$.

Predictors of Child Routines

The second main purpose of the study was to identify variables that significantly predict and disrupt children's routines. Hypothesis four stated that marital status, maternal psychological functioning, and parenting practices would significantly contribute to variance in frequency of child routines.

Since our prior data sets had suggested that parental marital status, when dichotomized to reflect parenting status as either single or co-parenting, was a small, but significant predictor of child routines (Sytsma et al., 2001; Sytsma & Kelley, 2002), marital status was dichotomized prior to data analysis. Single parenting status included mothers who were never married/living alone, separated, or divorced. Co-parenting status included mothers who were either married or never married/living with someone.

Prior to building the regression model, preliminary data analysis was conducted to identify variables to include in the model. This involved evaluating bivariate correlations of potential predictors with the dependent variable, identification of potential demographic covariates, and screening to prevent problems with multicollinearity. Bivariate correlations between measures of child routines, maternal distress, and the six parenting practices subscales were examined and are presented in Appendix C.

Next, potential covariates were identified by correlating the Child Routines Total score with demographic variables (i.e., child's age, single/coparenting status, etc.) (see Table 7 for a complete listing). There were no significant relationships between child routines and child age, child gender, child race, special education status, maternal age, maternal race, single/co-parenting status, or SES (see Table 7). However, children with a history of treatment for behavior problems (n=24), including those currently in treatment and those with a prior history of treatment, had significantly fewer routines ($\underline{r}$= -.19, $\underline{p}$<.05). Overall, these findings suggest that treatment history should be controlled in the proposed analyses. Also, since marital status was expected a priori to be a significant predictor of routines, but failed to demonstrate significant correlation in the present sample, it was determined that analyses would be run twice, both with and without controlling for single/co-parenting status.

Table 7

Correlations among Demographic Variables and Criterion Variables

Demographic Variables	CRI Total	BASC Externalizing
Child's age	-.05 (n=153)	.08 (n=149)
Child's gender	-.01 (n=153)	.23** (n=149)
Child's race	-.08 (n=151)	.11 (n=147)
Treatment history	-.19* (n=151)	.47** (n=148)
Special education	-.11 (n=152)	.38** (n=148)
Mother's age	-.10 (n=88)	-.04 (n=85)
Mother's race	-.09 (n=151)	.10 (n=147)
Single/co-parenting status	-.01 (n=153)	-.02 (n=149)
SES Index	.14 (n=149)	-.22** (n=145)

* $p < .05$, ** $p < .01$.

Finally, multicollinearity was assessed initially by evaluating intercorrelations among the six parenting behavior subscales. As shown in Appendix C, intercorrelations among parenting measures ranged from r= -.08 to .57. Since correlations in this range should not present significant problems with multicollinearity (Tabachnick & Fidell, 2001), individual parenting variables were entered rather than compiling composite variables.

Hierarchical multiple regression analysis by sets (Cohen & Cohen, 1983) was then conducted to evaluate the relative and unique contribution of expected predictors of child routines. Potential predictors included single/co-parenting status, maternal distress, and various parenting practices, and the dependent variable was the Child Routines Total score (see Table 8). In Step One, the demographic covariates (treatment history, single/co-parenting) were entered into the equation, and the model was not significant [F(2, 149)=2.92, p >.05]. In considering their independent contribution, treatment history was a significant predictor ($\beta = -.19$, $p < .05$) while single/co-parenting status was far from significant (β = -.001, $p > .90$). Next, maternal distress, as measured by the BSI-18 Global Severity Index, was entered in the second step, and was a significant predictor of total Child Routines [F (1, 148) = 12.36, p = .01; β = -.29, $p <$ .001], indicating that maternal distress accounts for variance in child routines beyond that accounted for by demographic covariates. Finally, the six parenting practices subscales were entered on the third step. As predicted, the results indicated that parenting practices explained considerable variance (ΔR^2 = .25) beyond the variance accounted for by demographic covariates and maternal distress [F (6, 142) = 9.29, p <.001]. However, once parenting practices were entered into the model, maternal distress was no longer a significant predictor of child routines (β = -.12, $p > .05$). Further examination of the variables within the third step revealed that parental Involvement was a significant positive predictor of child routines (β = .34, p <.0001),

Table 8

Hierarchical Regression Analysis Predicting Child Routines with Parenting Variables (Original Predicted Model) (N=152)

Step and Predictor Variable	R^2	ΔR^2	Results in Final Step	
			B	β
Step 1 (Covariates)	.04	.04		
Treatment history			-2.45	-.05
Single/co-parenting			-4.54	-.12
Step 2 (Maternal Distress)	.11**	.07**		
BSI-18 Global Symptom Index			-.21	-.12
Step 3 (Parenting Practices)	.36**	.25**		
PBI Hostile Coercive			-.05	-.03
PBI Supportive/Engaged			.43	.15
APQ Involvement			1.15**	.34**
APQ Positive Parenting			.04	.01
APQ Poor Monitoring/Supervision			-.50*	-.16*
APQ Inconsistent Discipline			-.33	-.08

*$p < .05$, ** $p < .01$.

indicating that high rates of parental involvement promote the establishment of child routines. By contrast, Poor Monitoring/Supervision was negatively related to child routines (β = -.16, $\underline{p}$ < .05), indicating that low rates of parental monitoring and supervision are disruptive to child routines. No other single predictor was significantly related to child routines, although Supportive/Engaged parenting was marginally significant at $\underline{p}$<.10.

In the second analysis, single/co-parenting was removed from the analysis. The revised model is presented in Table 9. Overall, results were not appreciably different from the first analysis; although, the model for Step One (treatment history) became significant [$F(1, 150)$ = 5.88, $\underline{p}$ <.05; β = -.19, $\underline{p}$ < .05], suggesting that the mothers of children currently receiving or with a prior history of treatment for behavioral problems reported significantly lower levels of child routines. But once maternal distress and parenting practices were entered into the model, treatment history was no longer a significant predictor of child routines (β = -.06, $\underline{p}$ > .05).

In summary, these results indicate that demographic variables generally were unrelated to child routines, aside from treatment history. Maternal distress was a significant predictor of child routines beyond that accounted for by treatment history. Yet when parenting practices were entered into the model neither treatment history nor maternal distress maintained significance. Although single/co-parenting status was expected to significantly predict child routines, this finding was not upheld in the present sample. However, consistent with our prediction, parenting practices accounted for the most variance in child routines, with both positive (Involvement) and negative (Poor Monitoring/Supervision) practices accounting for significant proportions of variance. Furthermore, it remains possible that moderately high intercorrelations among parenting practices ($\underline{r}$ =.48 to .57) precluded predictive significance of additional parenting practices.

Table 9

Hierarchical Regression Analysis Predicting Child Routines with Parenting Variables Except
Parent Marital Status (Single/Co-parenting) (N=152)

_____

Step and Predictor Variable	R^2	ΔR^2	Results in Final Step	
			B	β
Step 1 (Covariates)	.04*	.04*		
Treatment history			-2.81	-.06
Step 2 (Maternal Distress)	.11**	.07**		
BSI-18 Global Severity Index			-.16	-.09
Step 3 (Parenting Practices)	.35**	.24**		
PBI Hostile Coercive			-.04	-.02
PBI Supportive/Engaged			.46	.16
APQ Involvement			1.10**	.32**
APQ Positive Parenting			.07	.01
APQ Poor Monitoring/Supervision			-.46*	-.15*
APQ Inconsistent Discipline			-.35	-.08

*$\underline{p}$ < .05, ** $\underline{p}$ < .01.

Child Routines as a Moderator

The fifth hypothesis stated that child routines will moderate the relationship between

maternal distress and child externalizing behavior. Prior to data analyses, the predictor variables

were centered (e.g., the mean was subtracted from each individual scale score in order to create

variables with means of zero) to prevent the negative impact of multicollinearity (a common

problem when testing moderators), as recommended by Aiken and West (1991). These centered

predictors were then multiplied to create the interaction term. Bivariate correlations between the

dependent variable and centered predictors were evaluated and are provided in Appendix D. In

addition, correlations among demographic variables and child externalizing behavior problems

were explored to determine potential covariates (see Table 7). As anticipated, child gender,

special education status, and treatment history were significantly correlated with child

externalizing behavior, as was SES.

A hierarchical regression analysis was performed and the BASC Externalizing Problems

Composite score was entered into the equation as the dependent variable. In Step One, the

demographic covariates (child gender, SES, special education status, treatment history) were

entered, and the model was significant [$F(4, 139) = 15.92$, $\underline{p} < .001$]. Child routines, as measured

by the CRI Total score, and maternal distress, as measured by the BSI-18 Global Severity Index,

were entered on the second step. Together, these variables accounted for significant additional

variance in externalizing behavior problems [$F(2, 137) = 11.63$, $\underline{p} < .001$]. Next, the Child

Routines x Maternal Distress interaction term was entered in the third step to test the moderating

relationship of child routines on the relationship between maternal distress and externalizing

behavior problems. The interaction was not significant [$F(1, 136) = .13$, $\underline{p} > .05$; $\beta = -.03$, $\underline{p} >$

.70.], thus failing to support a moderating function of child routines.

Since the interaction term was not significant, the third step was removed from the

model, and that analysis was rerun to provide a cleaner model for interpretation. Results for the

final model are presented in Table 10. These results indicate that demographic factors were

highly related to externalizing behavior problems, accounting for 31% of the variance in the first

step. When child routines and maternal distress were entered into the model, together they

explained an additional 10% of the variance. Examination of the variables in the second step

revealed that child gender, special education, treatment history, and child routines were

Table 10

Revised Hierarchical Regression Analysis Without Child Routines x Maternal Distress
Interaction (N=144)

_____

Step and Predictor Variable	R^2	ΔR^2	Results in Final Step	
			B	β
Step 1 (Covariates)	.31**	.31**		
Child's gender			4.14*	.16*
SES			-.11	-.12
Special Education			7.43*	.16*
Treatment history			9.91**	.29**
Step 2 (Main Effects)	.41**	.10**		
Maternal Distress (BSI-18)			.17	.12
Child Routines (CRI Total)			-.21**	-.28**

_____

*$p < .05$, ** $p < .01$.

significant predictors of child externalizing behavior problems, with SES and maternal distress

attaining marginal significance at p < .10. Overall, these findings indicate that the vast majority

of variance in externalizing behavior problems accounted for in this model were explained by

demographic factors including male gender, special education placement, and treatment for

behavior problems, with low SES being marginally significant. After controlling for these

demographic factors, maternal distress and child routines together contributed additional

variance, with child routines remaining a strong, significant predictor, and maternal distress

being only a marginally significant predictor of externalizing behavior problems.

DISCUSSION

The results of this study replicate and extend prior findings regarding the reliability and validity of the CRI. The present sample demonstrated comparable internal consistency reliability and validity coefficients as in prior studies (Sytsma et al., 2001; Sytsma-Jordan et al., 2002). In addition, the current study provided additional evidence of convergent validity but generally less robust evidence of divergent validity. Multivariate regression analysis provided support for the notion that positive parenting practices promote and negative parenting practices disrupt child routines, with parenting practices accounting for more variance in child routines than demographic factors or maternal distress. However, the expected moderating influence of child routines on maternal distress and externalizing behavior problems was not supported in the present sample.

Psychometric Features of the CRI

During the initial development of the CRI, we had expected a positive correlation between SES and child routines. However, our prior studies had failed to find evidence of a relationship between child routines and SES (Sytsma, 2001; Sytsma & Kelley, 2002). Although this was consistent with prior literature on family routines and SES (Jensen et al., 1983), it was puzzling given our hypotheses that fewer child routines would be associated with general lack of structure and predictability and more chaotic environments, which would presumably be more prevalent in lower SES families. In the present sample, there was no significant relationship between SES and child routines overall, but there was a moderate positive correlation with the Daily Living Routines scale. When items on this subscale were evaluated with SES individually in follow-up analyses, most of the items reaching statistical significance were routines involving parent and/or family participation. Therefore, this finding may be attributable to limited parent or family participation in child routines which may be more prevalent in lower SES families.

Follow-up analyses also replicated prior findings that lower SES was significantly related to more negative parenting practices, most notably higher levels of poor monitoring/supervision, as well as to higher levels of maternal distress. These findings are consistent with prior literature on factors influencing parenting practices. For example, Webster-Stratton and Hammond (1990) found that even after completing a parent training program with conduct problem children between the ages of 3 and 8, lower SES and single marital status were the strongest predictors of negative parenting practices, including higher rates of criticism and physically negative interactions with their children. Similarly, Fox et al. (1995) found that mothers of lower SES used fewer positive parenting practices, including lower rates of nurturing behaviors and higher rates of discipline, and reported higher rates of child behavior problems.

The CRI Validity Scales were pilot tested in this study in an effort to obtain a mechanism for identifying potentially "bad" protocols. Following the method used by Gerard (1994), the Defensive Responding Scale was developed using items with low frequency of endorsement from the development sample. They recommended summing the low frequency items and selecting a cut-off score above which 5% of the standardization sample scored. In applying these recommendations, we obtained a 3-item scale and a suggested screening score of 10, given 3.7% scoring at or above this value in the standardization sample and 7.8% in the present sample. This indicates that a slightly larger than expected portion of mothers reported in an unrealistically favorable manner, which may have resulted from low item reliability, too few items on the scale, an artifact brought about by smaller sample size, or truly higher rates of defensive responding. Based on these findings, further evaluation of the reliability and validity of this scale is necessary, including its correspondence with external indices suggestive of a faking good or socially desirable response bias. Prior scales measuring family rituals and parenting practices have evaluated social desirability through correlation with scales such as the Marlowe-Crowne

Social Desirability Scale (Crowne & Marlowe, 1960; Fiese & Kline, 1993) and the MMPI-2 K scale (Hathaway & McKinley, 1989; Shelton et al., 1996). Future studies should incorporate this type of validation.

The Inconsistency Index was also compiled following guidelines demonstrated by Gerard (1994). Seven pairs of items with high intra-pair correlation were identified in the development sample and summed in two ways: 1) number of pairs with 2-point or greater discrepancy and 2) sum of item-pair discrepancies across all pairs. Inter-item correlations, as well as the scale mean and standard deviation were comparable to findings by Gerard (1994). On the Inconsistency Index, we found that a cut-off score based on the sum of absolute discrepancy across all seven item pairs yielded the most reliable percentage of questionable protocols. A summary score of 9 or more corresponded to 4.8% of the development sample and 6.5% of the present sample. This probably identified a more consistent percentage of the sample than summing number of items with 2-point or greater discrepancy, because the inter-item correlation among the item pairs was lower in the current sample than in the original development sample. This is a particularly curious finding given that the item pair with the highest inter-correlation in the development sample had the lowest reliability in the present sample. One reason this may have occurred is because the initial development sample included a larger item pool (n=56) and the items in this pair were presented sequentially, but when the final item pool was established (n=36), items were randomized to separate items loading on the same factor. Thus, in subsequent studies, these two items were no longer presented in sequence. However, subsequent analyses suggest that intercorrelations among the seven items comprising the Inconsistency Index have been much more stable across subsequent study samples, with a different of no more than .06 between item pair correlations. Yet given these findings, some concerns remain regarding the reliability of the item pairs originally used to compile the index. Thus, further development and validation of the

scale is in order. In its present format, it appears that a higher cut-off and an absolute difference summary score will produce the fewest false positives (incorrectly identified as inattentive or random responding).

Findings in the present sample also provided additional evidence in support of the convergent validity of the CRI. However, aside from a lower correlation with internalizing problems, the present findings failed to support the divergent validity of the CRI. Contrary to our expectations, the CRI showed moderately strong positive relationships with scales tapping social and adaptive skills (particularly adaptability), a moderately strong negative relationship with attention problems, and a stronger than expected inverse relationship with internalizing problems.

Perhaps the hypotheses suggesting these constructs to be unrelated to child routines were flawed. Prior research suggests that family rituals and/or routines may be directly or indirectly related to multiple areas of child adjustment in addition to externalizing symptoms. For example, Kliewer and Kung (1998) examined family moderators of the relation between everyday hassles and behavior problems in inner-city children between the ages of 8 and 12. They found that family routines moderated the relation between hassles and both internalizing and externalizing problem behaviors. Thus, at high levels of routines, the relation between hassles and internalizing problem behavior was close to zero; but when family routines were low, the association between hassles and adjustment difficulties was strong and positive. Also, in a study of anxiety in children with chronic asthma between the ages of 6 and 12, Markson and Fiese (2000) tested the moderating impact of family rituals and routines on child anxiety. Results indicated that anxiety was negatively related to family rituals, with mothers reporting that high family ritual meaning related to lower child anxiety, and fathers reporting that high family ritual routines related to lower child anxiety. These findings suggest that families

organized around daily routines may be better prepared to manage chronic illness, as routines may serve a protective function in the relationship between chronic illness and development of internalizing disorders. So in retrospect, significant inverse correlations between child routines and internalizing problems are not that surprising, given prior evidence that family routines moderate the influence of daily hassles on internalizing behavior problems (Kliewer & Kung, 1998) and partially buffer children with asthma from development of anxiety (Markson & Fiese, 2000).

Yet it is noteworthy that the BASC Anxiety subscale was the only subscale comprising the Internalizing Composite that failed to demonstrate a significant relationship with child routines. This is especially interesting given the notion that overly rigid adherence to routines are characteristic of certain psychological disorders, including obsessive-compulsive disorder and pervasive developmental disorders (APA, 1994). Consequently, one might expect routines and anxiety symptoms to covary such that excessive numbers of routines may be associated with high rates of anxiety, unless, of course, routines function adaptively even within the context of psychopathology to reduce anxiety.

The literature on family routines suggests that routines may also influence other areas of childhood functioning in addition to externalizing and internalizing behavior problems, such as academic (Brody & Flor, 1997; Brody, Flor & Gibson, 1999) and social competence (Brody et al., 1999; Keltner, 1990). A series of studies by Brody and colleagues evaluating models of family process and child outcomes in rural, single-parent African-American families of children between the ages of 6 and 9 has demonstrated a link between family routines and academic and psychosocial competencies. One of the earlier studies incorporating routines found that high rates of family routines and positive mother-child relationships were positively related to children's self-regulation, which in turn, was positively related to achievement and negatively

related to both internalizing and externalizing problem behavior (Brody & Flor, 1997). A later study found that parenting practices promoting child competence, including family routines, observational ratings of mother-child interactions, and teacher's report of mother's involvement with their child's school, were indirectly linked with children's academic and psychosocial competence through their association with child self-regulation. Furthermore, in a study evaluating family characteristics related to social competence in disadvantaged black children enrolled in a Head Start program, Keltner (1990) found that family routines were one of the best predictors of social competence across both Interest-Participation and Cooperation-Compliance domains. Therefore, in retrospect, it appears the moderately strong positive correlation of child routines and adaptive skills (e.g., social skills, leadership) should have been anticipated given prior evidence that family routines predict social competence in preschoolers.

A positive relationship between child routines and measures of social competence is also consistent with the work of Patterson and colleagues in the area of coercive family process (1982; Patterson, Reid, & Dishion, 1992). According to their model, child externalizing behavior problems are related to hostile, negative, and coercive parent-child interactions, which preclude development of age-appropriate social skills and further contribute to maintenance of aversive child behaviors. In early childhood, a variety of contextual factors disrupt parental discipline and monitoring, leading to child conduct problems and social skills deficits, which predict peer rejection and academic failure during middle childhood, and ultimately result in delinquency by adolescence (Patterson, DeBaryshe, & Ramsey, 1989). By contrast, positive parenting practices are related to normal development of prosocial behaviors (Patterson et al., 1992), so high rates of routines (as they are related to positive parenting practices and positive parent-child interaction) would be expected to predict positive social skills in this model. Overall, these findings suggest a need for a broader conceptualization of the impact of child

routines, as it appears more routinized children may be better socialized and have better overall adjustment, rather than merely having lower rates of externalizing behavior.

Finally, for children between the ages of 6 and 11, the Adaptability subscale factors into the Adaptive Skills Composite. It is somewhat more difficult to explain why this subscale demonstrated a moderate positive relationship with child routines, given that theoretically, structure and routine appears contrary to flexibility and adaptability. However, a few possibilities are plausible. First, these findings may be an artifact of the measures used. Analysis of individual items loading on the Adaptability subscale indicated that only about half of the items actually addressed how the child copes with change. The remaining items appear to tap into general social skills and demeanor (i.e., sharing, easily calmed, etc.). Future studies should consider correlation of the CRI with items tapping adjustment to change only. Another alternative is that adaptability is, in fact, positively related to child routines and that both are characteristic of generally well-adjusted children. Furthermore, highly routinized children may be better able to cope with change because it tends to occur in a predictable, orderly manner, and has historically resulted in neutral or positive outcomes.

If routines do, in fact, have an impact on multiple aspects of child functioning and parent-child interaction, the bigger questions becomes "what is theoretically unrelated to routines?" Further research should, therefore, be conducted to identify constructs unrelated to general child adjustment and parent-child interaction so that these constructs may be evaluated with child routines to further test the divergent validity of the CRI.

<div align="center">Predictors of Child Routines</div>

Results from our first regression analysis evaluating potential predictors of child routines generally supported our hypothesis. Although single/co-parenting status was not a significant predictor of child routines in the present sample, and the relationship between child routines

maternal distress was no longer significant once parenting practices were entered into the model, our overall expectation that parenting practices would account for significant amounts of variance, beyond that attributed to demographic variables or maternal psychological functioning was supported. These findings are consistent with that of Brenner and Fox (1998) who found that although demographic variables such as marital status, parent's education, parent's age, and SES were significant predictors of child behavior problems, parenting practices, in particular negative parenting practices, were much stronger predictors. Furthermore, our findings indicated that positive parenting practices, including parental involvement, were significant positive predictors, and that negative parenting practices, including poor monitoring/supervision, were negative predictors of child routines. These findings, in combination with findings from our model testing routines as a moderator, indicating that child routines account for significant amounts of variance in predicting externalizing behavior problems, provide further evidence consistent with Patterson's work on coercive family process (1982) and early childhood factors related to the development of antisocial behavior patterns (Patterson et al., 1989). As stated previously, Patterson's work suggests that disrupted parenting practices, in the form of limited parental involvement with their children and poor monitoring/supervision are among key factors leading to child conduct problems, social and academic failure, and later delinquency. These disrupted parenting practices stem from multiple contextual factors predictive of behavioral problems in children, including family demographic characteristics (e.g., low SES), family stressors (e.g., economic difficulties, marital conflict), and family traits (e.g., antisocial behavior). In the context of this model, child routines may serve as a type of parenting or family management practice, which may be disrupted by these contextual factors and thus, impact development of child conduct problems. Additionally, the failure of child routines to be significantly correlated with various demographic variables such as maternal age, race, marital

status, or SES, may suggest a function of child routines beyond that attributable to parenting practices.

Our findings also demonstrated that when parenting practices are taken into account, maternal distress is no longer a significant predictor of routines. This may suggest that the relationship between maternal distress and child routines is mediated by parenting practices. This finding may have significant implications for treatment, as it suggests that distressed mothers may still promote child routines if they are able to engage in positive parenting practices like maintaining high levels of involvement with their children and to avoid negative parenting practices like poor monitoring. Alternatively, multicollinearity between maternal distress and negative parenting practices may have precluded the significance of maternal distress in the model, as maternal distress was significantly positively correlated with Hostile/Coercive parenting ($\underline{r}$ = .47) and Poor Monitoring/Supervision ($\underline{r}$=.44).

<center>Child Routines as a Moderator</center>

The next regression model was designed to evaluate the potential moderating function of child routines on the well-established relationship between maternal distress and externalizing behavior problems in children (Brody & Forehand, 1986; Forehand, Furey, & McMahon, 1984; Forehand, McCombs, & Brody, 1987). The results failed to support a moderating role of routines. However, there are several points worthy of discussion. First, due to the number of variables significantly correlated with the criterion variable, there were a number of demographic covariates entered into this model, as compared with the prior model predicting child routines. This is not surprising, given extensive literature on assessment of child psychopathology which has consistently demonstrated higher rates of externalizing behavior problems in males, clinic-referred children, and children with special needs, particularly those identified as having emotional or behavioral disturbances (Achenbach, 1991; Reynolds & Kamphaus, 1992). In

addition, low SES has been consistently identified as a demographic predictor of child behavior problems (Brenner & Fox, 1998; Fox et al., 1995; Webster-Stratton & Hammond, 1990).

Secondly, once child gender, SES, special education status, and treatment history were controlled and both maternal distress and child routines were entered into the model, the relationship between maternal distress and externalizing behavior problems was marginal, at best. This suggests that after all of these factors are accounted for, there was virtually no residual relationship between maternal distress and behavior problems. Yet, child routines remained a significant predictor of child behavior problems. Therefore, rather than routines merely altering the impact of mothers' distress on residual behavioral problems, they appear play a much more significant role in prevention of child behavior problems.

There are two plausible explanations for these findings. One possible explanation is that being of low SES, having a child in need of special education services or in need of treatment for behavioral problems, or having a male child who is at relatively greater risk for developing behavioral problems causes high levels of maternal distress, and that once these demographic variables are controlled, maternal distress adds little in the prediction of child behavior problems. This explanation suggests that one or more of the demographic covariates in the model may mediate the relationship between maternal distress and externalizing behavior problems. However, this explanation is not likely for child gender, treatment history, or special education status, given insignificant zero-order correlations with maternal distress.

The second, and more plausible explanation, suggests that the inclusion of child routines into the model accounted for the non-significant relationship between maternal distress and externalizing behavior problems. This explanation suggests that child routines may mediate the relationship between maternal distress and behavior problems. Future studies should attempt to delineate the relationship among demographic variables, maternal distress, and child routines in

the prediction of externalizing behavior problems. Specifically, models should be tested to test SES and child routines as mediators of the relationship between maternal distress and child behavior problems.

<div align="center">Limitations</div>

There are several limitations to this study. First is reliance on a single informant and the format (e.g., self-report) for data collection. Use of a single informant introduces the possibility that all measures are subject to a particular response set or perception idiosyncratic to that individual, which may or may not be accurate. Without additional informants, invalid data are difficult to detect. Given that depressed mothers tend to over-report maladjustment of their children (Breslau, Davis, & Prabucki, 1988; Forehand & Brody, 1985; Griest, Wells, & Forehand, 1979), we selected a measure which included validity scales, to help detect overly negative reporting. We did not include child self-report data because they tend to be unreliable below a minimum age of 9 years (Shelton, Frick, & Wootton, 1996), presenting reliability and validity concerns for half of the age range covered in the present study. Furthermore, a child-report version of the CRI has not yet been constructed. Teacher data were not included, as routines occurring in the school setting are quite different from those occurring in the home setting, and the CRI focuses on home-based routines.

Use of a single method of data collection introduces a related validity problem, as all data are based on individuals' perceptions of events as opposed to an incontrovertible index of the variable of interest. In studying child routines, additional validation methods, including observational data would be beneficial. Unfortunately, there is no existing observational measure of routines with which to compare the rating scale. In order to validate the CRI with an observational measure of routines, one would have to first establish an observational measure of various child routines and attempt to ascertain its reliability and validity.

Future studies should attempt to incorporate multiple informants and methods. In additional to observational data, father rating scale reports of child routines, daily diaries or logs of routine behaviors, and child interview data regarding routines could be obtained. Furthermore, additional indices of child adjustment, including teacher ratings, objective measures (e.g., academic achievement scores) or actual records of behavior problems (e.g., number of suspensions, etc.) could be included in future studies to reduce method variance problems.

A second area of limitation pertains to the constraints on external validity. Given the age range covered by the CRI, these findings can only be generalized to school-aged children. However, the age range is in need of expansion. The utility and validity of the CRI should be evaluated in teenage children. Also, given that most of the popular parenting literature focuses on the importance of routines in very young children, development of items pertaining to infants, toddlers, and preschoolers is warranted so that the impact of child routines can be studied throughout early child development.

A final limitation pertains to the correlational design and corresponding cross-sectional nature of the data. Although preliminary models can be developed using this data, true causal pathways cannot be inferred or tested using this design. Future studies should evaluate routines longitudinally, in the context of treatment, and include objective academic and behavioral outcomes. Such studies could begin to tease out directionality of correlational findings and work toward identifying causal pathways.

Summary and Future Directions

The findings from the present study provide additional support for the reliability and construct validity of the CRI in a new sample. They also provide initial clues about circumstances under which child routines are most likely to occur (i.e., when mothers are highly

involved with their children and provide proper monitoring and supervision). Unlike child behavior problems, child routines generally appear to be unrelated to child gender, special education status, and SES. This may have implications for treatment, with child routines being standard component of positive parenting practices useful in reducing behavior problems and promoting adaptive skills regardless of the child's economic or educational background. Contrary to our hypothesis, child routines do not appear to buffer children from the deleterious effects of maternal distress on the development of externalizing behavior problems. However, after controlling for demographic factors, maternal distress is only marginally predictive of behavior problems, whereas routines remain a strong predictor. This has implications for prevention of behavior problems through implementation of child routines, despite presence of child and parent characteristics related to child behavior problems. Furthermore, available evidence suggests mediational models should be tested in future studies.

There are two main objectives for future studies: 1) further development and examination of the psychometric properties of the CRI, and 2) further exploration of the function of child routines in the context of parenting models. To accomplish the first objective, the present version of the CRI should be subjected to confirmatory factor analysis to verify the structure of the measure. The age range of the CRI should be expanded to include development of versions useful for infant, toddler, and preschool age groups, as well as evaluation for use with adolescents. The CRI should be evaluated in multiple clinical samples (e.g., abuse/neglect, developmentally disabled, chronic illness, etc.). Next, a large-scale validation project should be conducted using a geographically diverse and demographically representative sample, evaluating additional constructs and correlates. One component of such a project could include evaluating the CRI with additional methods of studying child routines, including direct observation, diaries, routine logs, and child interviews. A critical aspect of such a validation study would be

identification of constructs theoretically unrelated to child routines and further examination of the divergent validity of the measure. A related project would involve evaluating the clinical utility of the CRI by evaluating its sensitivity to treatment effects.

Future studies should also attempt to better elucidate the role of child routines within models of parenting and child adjustment. This would include developing and testing more extensive theoretical models evaluating the function of child routines as they relate externalizing behavior problems and general child adjustment, given certain child and parent characteristics. Another valuable line of research would involve evaluating the relationship of child routines to medical regimen adherence and coping in chronic illness populations (Fiese & Wamboldt, 2000). Presumably, children with well-established, frequent home-based routines, would be better prepared to meet the demands of a chronic illness, by incorporating a medical self-care routine. Studies are currently in development or underway evaluating the relationship between child routines and pediatric asthma adherence (DeMore & Adams, 2002), pediatric diabetes adherence, and adherence to self-care regimens in pediatric sickle cell disease (Sytsma-Jordan, Hilker, Stoppelbein, & Elkin, 2003). If the expected relationship between child routines and medical regimen adherence is supported, then there may be clinical utility in screening for child routines in newly diagnosed chronically ill pediatric populations. Children with infrequent routines, who are at-risk for poor medical adherence could be identified for more intensive treatment focused on establishing a medical adherence routine in an effort to enhance medical adherence (Fiese & Wamboldt, 2000).

In conclusion, despite emphasis commonly placed on the importance of child routines to proper child adjustment, data regarding efficacy of child routines remain limited. This study represents an attempt to replicate previous findings and provide further psychometric support for the CRI, as well as an initial attempt to evaluate factors predictive of child routines and to begin

to understand their function in relation to other aspects of parenting and child adjustment. A great deal more research is needed in this area before commonly held beliefs regarding the utility of child routines can be substantiated.

BIBLIOGRAPHY

Achenbach, T. M. (1991). *Manual for the Child Behavior Checklist/4-18 and 1991 Child Behavior Profile.* Burlington: University of Vermont, Department of Psychiatry.

Adams, C. D. & Drabman, R. S. (1995). Improving morning interactions: Beat-the-Buzzer with a boy having multiple handicaps. *Child & Family Behavior Therapy, 17,* 13-26.

Adams, L. A., & Rickert, V. I. (1989). Reducing bedtime tantrums: Comparison between positive routines and graduated extinction. *Pediatrics, 84,* 756-761.

Aiken, L. S. & West, S. G. (1991). *Multiple regression: Testing and interpreting interactions.* Newbury Park, CA: Sage.

American Psychiatric Association (1994). *The diagnostic and statistical manual for mental disorders* (4th ed.). Washington, DC: APA.

Anastasi, A. (1988). *Psychological testing* (6th ed.). New York: Macmillan.

Baker, M. (1998, July). The comfort of routines. *Parents Magazine, 73,* 80-82.

Barkley, R. A. (1997). *Defiant children: A clinician's manual for assessment and parent training.* 2nd ed. New York: Guilford Press.

Baron, R. M. & Kenny, D. A. (1986). The moderator-mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology, 51,* 1173-1182.

Bauman, K. E., Reiss, M. L., Rogers, R. W., & Bailey, J. S. (1983). Dining out with children: Effectiveness of a parent advice package on pre-meal inappropriate behavior. *Journal of Applied Behavior Analysis, 16,* 55-68.

Baumrind, D. (1971). Current patterns of parental authority. *Developmental Psychology Monographs, 4,* 1-103.

Baumrind, D. (1991). Parenting styles and adolescent development. In J. Brooks-Gunn, R. Lerner, & A.C. Petersen (Eds.), *The encyclopedia of adolescence,* (pp. 746-758). New York: Garland.

Berg, E. (1991, September). Little moments that mean a lot. *Parents Magazine, 66,* 77 (5).

Boyce, W. T., Jensen, E. W., Cassel, J. C., Collier, A. M., Smith, A. H., & Ramey, C. T. (1977). Influence of life events and family routines on childhood respiratory tract illness. *Pediatrics, 60,* 609-615.

Boyce, W. T., Jensen, E. W., James, S. A., & Peacock, J. L. (1983). The Family Routines Inventory: Theoretical origins. *Social Science and Medicine, 17,* 193-200.

Bradley, R. H. & Caldwell, B. M. (1981). Pediatric usefulness of HOME assessment. *Advances in Behavioral Pediatrics, 2,* 61-80.

Brenner, V. & Fox, R. A. (1998). Parental discipline and behavior problems in young children. *Journal of Genetic Psychology, 159,* 251-256.

Breslau, N., Davis, G. C., & Prabucki, K. (1987). Depressed mothers as informants in family history research – Are they accurate? *Psychiatry Research, 24,* 345-359.

Brody, G. H., & Flor, D. L. (1997). Maternal psychological functioning, family processes, and child adjustment in rural, single-parent, African American families. *Developmental Psychology, 33,* 1000-1011.

Brody, G. H., Flor, D. L., & Gibson, N. M. (1999). Linking maternal efficacy beliefs, developmental goals, parenting practices, and child competence in rural single-parent African-American families. *Child Development, 70,* 1197-1208.

Brody, G. H. & Forehand, R. (1986). Maternal perceptions of child maladjustment as a function of the combined influence of child behavior and maternal depression. *Journal of Consulting and Clinical Psychology, 54,* 237-240.

Caldwell, B., & Bradley, R. (1984). *Home Observation for Measurement of the Environment.* Homewood, IL: Dorsey.

Cassidy, A. (1992, July). When, why, how to get your baby into a routine. *Working Mother, 15,* 56, 58-60.

Cassidy, A. (1996, June). Routines that work. *Parents Magazine, 71,* 80-82.

Christophersen, E. R. (1982). Incorporating behavioral pediatrics into primary care. *Pediatric Clinics of North America, 29,* 261-296.

Clark, H. B., Greene, B. F., Macrae, J. W., McNees, M. P., Davis, J. L., & Risley, T. R. (1977). A parent advice package for family shopping trips. *Journal of Applied Behavior Analysis, 10,* 605-624.

Cohen, J., & Cohen, P. (1983). *Applied multiple regression/correlation analysis for the behavioral sciences.* Hillsdale, NJ: Lawrence Erlbaum.

Conrad, M. & Hammen, C. (1989). Role of maternal depression in perceptions of child maladjustment. *Journal of Consulting and Clinical Psychology, 57,* 663-667.

Coons, C. E., Gay, E. C., Fandal, A. W., Ker, C., & Frankenburg, W. K. (1981). *The Home Screening Questionnaire: Reference manual.* Denver, C.O.: University of Colorado Health Sciences Center.

Crowne, D. P., Marlowe, D. (1960). A new scale of social desirability independent of psychopathology. *Journal of Consulting Psychology, 24,* 349-354.

Cummings, E. M. & Davies, P. T. (1994). Maternal depression and child development. *Journal of Child Psychology and Psychiatry, 35,* 73-112.

Curtis, B. (2000, October). Why routines matter. *Christian Parenting Today, 13,* 27.

Dadds, M. R. (1987). Families and origins of child behavior problems. *Family Process, 26,* 341-357.

Dadds, M. R., Sanders, M. R., & Bor, B. (1984). Training children to eat independently: Evaluation of mealtime management training for parents. *Behavioural Psychotherapy, 12,* 356-366.

Darling, N. & Steinberg, L. (1993). Parenting style as context: An integrative model. *Psychological Bulletin, 113,* 487-496.

DeMore, S. & Adams, C. (2002). The role of parenting stress, difficult child behavior, and the use of routines in management of pediatric asthma. Unpublished thesis prospectus, West Virginia University.

Derogatis, L. R. (1994). *Symptom Checklist-90-Revised manual.* Minnetonka, MN: NCS Assessments.

Derogatis, L. R. (1996). *Brief Symptom Inventory-18 manual.* Minnetonka, MN: NCS Assessments.

Downey, G. & Coyne, J. C. (1990). Children of depressed parents: An integrative review. *Psychological Bulletin, 108,* 50-76.

Drabman, R. S. & Creedon, D. L. (1979). Beat the buzzer. *Child Behavior Therapy, 1,* 295-296.

Eastman, P. (1994, March). Kids! Birth to 2. *Working Mother, 17,* pp. 66, 68.

Eisenberg, A., Murkoff, H. E., & Hathaway, S. E. (1996). *What to expect the toddler years.* New York: Workman Publishing Company.

Ertem, I. O., Forsyth, B. W. C., Avni-Singer, A. J., Damour, L. K., & Cicchetti, D. V. (1997). Development of a supplement to the HOME scale for children living in impoverished urban environments. *Developmental and Behavioral Pediatrics, 18,* 322-328.

Eyberg, S. M., Boggs, S. R., & Rodriguez, C. M. (1992). Relationships between maternal parenting stress and child disruptive behavior. *Child and Family Behavior Therapy, 14,* 1-4.

Fiese, B. H. & Kline, C. A. (1993). Development of the Family Ritual Questionnaire: Initial reliability and validation studies. *Journal of Family Psychology, 6,* 290-299.

Fiese, B. H., Tomcho, T. J., Douglas, M., Josephs, K., Poltrock, S., & Baker, T. (2002). A review of 50 years of research on naturally occurring family routines and rituals: Cause for celebration? *Journal of Family Psychology, 16,* 381-190.

Fiese, B. H., & Wamboldt, F. S. (2000). Family routines, rituals, and asthma management: A proposal for family-based strategies to increase treatment adherence. *Families, Systems and Health, 18,* 405 – 418.

Forehand, R. L. (1986). Parental roles in childhood psychopathology. In C. L. Frame & J. L. Matson (Eds.) *Handbook of assessment in childhood psychopathology.* New York: Plenum Press.

Forehand, R. & Brody, G. (1985). The association between parental personal/martial adjustment and parent-child interactions in a clinic sample. *Behaviour, Research and Therapy, 23,* 211-212.

Forehand, R., Furey, W. M., & McMahon, R. J. (1984). The role of maternal distress in a parent training program to modify child non-compliance. *Behavioural Psychotherapy, 12,* 93-108.

Forehand, R., McCombs, A., & Brody, G. H. (1987). The relationship between parental depressive mood states and child functioning. *Advances in Behaviour Research and Therapy, 9,* 1-20.

Forehand, R. L. & McMahon, R. J. (1981). *Helping the noncompliant child.* New York: Guilford Press.

Fox, R. A., Platz, D. L., & Bentley, K. S. (1995). Maternal factors related to parenting practices, developmental expectations, and perceptions of child behavior problems. *Journal of Genetic Psychology, 156,* 431-441.

Frick, P. J. (1991). *The Alabama Parenting Questionnaire.* Unpublished instrument, University of Alabama.

Friedlander, S., Weiss, D. S., & Traylor, J. (1986). Assessing the influence of maternal depression on the validity of the child behavior checklist. *Journal of Abnormal Child Psychology, 14,* 123-133.

Galbraith, L., Hewitt, K. E., & Pritchard, L. (1993). Behavioural treatment for sleep disturbance. *Health Visitor, 66,* 169-171.

Gelfand, D. M. & Teti, D. M. (1990). The effects of maternal depression on children. *Clinical Psychology Review, 10,* 329-353.

Gerard, A. B. (1994). *Parent Child Relationship Inventory manual.* Los Angeles, CA: Western Psychological Services.

Goodman, S. H. & Brumley, H. E. (1990). Schizophrenic and depressed mothers: Relational deficits in parenting. *Developmental Psychology, 26,* 31-39.

Griest, D., Wells, K. C., & Forehand, R. L. (1979). An examination of predictors of maternal perceptions of maladjustment in clinic-referred children. *Journal of Abnormal Psychology, 88,* 277-281.

Hall, N. W. (1997, March). Your baby's amazing memory: New research reveals how much infants remember. *Parents Magazine, 72,* 90-92.

Handler, C. S. (1997, November). "It's time to go": How to get your preschooler to switch gears without tears. *Parents Magazine, 72,* pp. 181-182, 184.

Hathaway, S. R. & McKinley, J. C. (1989). *Minnesota Multiphasic Personality Inventory – 2nd Edition.* Minneapolis: University of Minnesota.

Hembree-Kigin, T., & McNeil, C. (1995). *Parent-child interaction therapy.* New York: Plenum Press.

Hogan, M. A. (1994, April). Nag nag nag! *Parenting, 8,* 66-67.

Hollingshead, A. B. (1975). *A four-factor index of social status.* New Haven, CT: Yale University Sociology Department.

Holmbeck, G. N. (1997). Toward terminological, conceptual, and statistical clarity in the study of mediators and moderators: Examples from the child-clinical and pediatric psychology literatures. *Journal of Consulting and Clinical Psychology, 65,* 599-610.

Jensen, E. W., James, S. A., Boyce, W. T., & Hartnett, S. A. (1983). The Family Routines Inventory: Development and validation. *Social Science and Medicine, 17,* 201-211.

Jouriles, E. N., Pfiffner, L. J., & O'Leary, S. G. (1988). Marital conflict, parenting, and toddler conduct problems. *Journal of Abnormal Psychology, 16,* 197-206.

Kase, L. M. (1999a, February). Routines to the rescue. *Parents Magazine, 74,* 119-120.

Kase, L. M. (1999b, October). Discipline for your little ones. *Parents Magazine, 74,* 114-118.

Keltner, B. (1990). Family characteristics of preschool social competence among black children in a head start program. *Child Psychiatry and Human Development, 21,* 95-108.

Kennedy, R. W. (2001). *The encouraging parent: How to stop yelling at your kids and start teaching them confidence, self-discipline, and joy.* New York: Three Rivers Press.

Kliewer, W., & Kung, E. (1998). Family moderators of the relation between hassles and behavior problems in inner-city youth. *Journal of Clinical Child Psychology, 27,* 278-292.

Lanclos, N. F. (2001). Parenting practices as a moderator of exposure to community violence. Unpublished doctoral dissertation, Louisiana State University.

Linares, L. O., Heeren, T., Bronfman, E., Zuckerman, B., Augustyn, M., & Tronick, E. (2001). A mediational model for the impact of exposure to community violence on early child behavior problems. *Child Development, 72,* 639-652.

Lovejoy, M. C., Weis, R., O'Hare, E., & Rubin, E. C. (1999). Development and initial validation of the Parent Behavior Inventory. *Psychological Assessment, 11,* 534-545.

Markson, S. & Fiese, B. H. (2000). Family rituals as a protective factor for children with asthma. *Journal of Pediatric Psychology, 25,* 471-479.

McGrath, M. L., Dorsett, P. G., Calhoun, M. E., & Drabman, R. S. (1987). "Beat-the-Buzzer": A method for decreasing parent-child morning conflicts. *Child & Family Behavior Therapy, 9,* 35-48.

Milan, M. A., Mitchell, Z. P., Berger, M. I., & Pierson, D. F. (1981). Positive routines: A rapid alternative to extinction for elimination of bedtime tantrum behavior. *Child Behavior Therapy, 3,* 13-25.

Mindell, J. A. (1999). Empirically supported treatments in pediatric psychology: Bedtime refusal and night wakings in young children. *Journal of Pediatric Psychology, 24,* 465-481.

Moos, R., & Moos, B. S. (1981). *Family Environment Scale manual.* Palo Alto, CA: Consulting Psychologists Press.

Nelson, J., Erwin, C., & Duffy, R. (1998). *Positive discipline for preschoolers: For their early years – raising children who are responsible, respectful, and resourceful.* Revised 2nd ed., Rocklin, CA: Prima.

Nelson, J., Lott, L., & Glenn, S. (1999). *Positive discipline A-Z: From toddlers to teens – 1001 solutions to everyday parenting problems.* Revised 2nd ed., Rocklin, CA: Prima.

Ortiz, C. (1999). The Parent Behavior Scale: A measure of parenting behaviors taught in empirically validated parent-training interventions. Unpublished doctoral dissertation, University of Amherst.

Patterson, G. R. (1982). *Coercive family process.* Eugene, OR: Castalia.

Patterson, G. R., DeBaryshe, B. D., & Ramsey, E. (1989). A developmental perspective on antisocial behavior. *American Psychologist, 44,* 329-335.

Patterson, G. R., Reid, J. B., & Dishion, T. J. (1992). *Antisocial boys.* Eugene, OR: Castalia.

Pruitt, D. B. (Ed.) (1998). *Your child: What every parent needs to know.* New York: Harper Collins.

Reynolds, C. R. & Kamphaus, R. W. (1992). *Behavior Assessment System for Children: Manual.* Circle Pines, MN: American Guidance Service.

Sanders, M. R., Bor, B., & Dadds, M. (1984). Modifying bedtime disruptions in children using stimulus control and contingency management techniques. *Behavioural Psychotherapy, 12,* 130-141.

Seymour, F. W. (1987). Parent management of sleep difficulties in young children. *Behaviour Change, 4,* 39-48.

Shelton, K. K., Frick, P. J., & Wootton, J. (1996). Assessment of parenting practices in families of elementary school-age children. *Journal of Clinical Child Psychology, 25,* 317-329.

Shimm, P. H. & Ballen, K. (1995). *Parenting your toddler: The expert's guide to the tough and tender years.* Reading, MA: Perseus Books.

Skinner, B. F. (1969). *Contingencies of reinforcement: A theoretical analysis.* New York: Appleton-Century-Crofts.

Smith, C. M. (2001). The use of pictorial cues and parent education to increase on-task behavior, compliance, and task completion for children with Attention Deficit Hyperactivity Disorder. *Dissertation Abstracts International: Section B: The Sciences and Engineering, 61 (7-B):* 3826.

Snyder, B. K. (1999). Teacher knows best. *Parents Magazine, 74,* 92-94.

Sytsma, S. E. (2001). Assessing the relationship between daily routines and child behavior problems: Development and initial validation of the Child Routines Inventory. Unpublished master's thesis, Louisiana State University.

Sytsma, S. E. & Kelley, M. L. (2002). Child Routines Inventory: Validation in a clinical sample. Unpublished preliminary data.

Sytsma, S. E., Kelley, M. L., & Wymer, J. H. (2001). Development and initial validation of the Child Routines Inventory. *Journal of Psychopathology and Behavioral Assessment, 23,* 241-251.

Sytsma-Jordan, S., Kelley, M.L., & Henderson, M. (2002). Children's routines, parenting stress, and maternal depression in parent-child dyads referred to a multidisciplinary ADHD clinic and nonreferred controls. A poster presented at the 36th annual meeting of the Association for the Advancement of Behavior Therapy, Reno, NV.

Sytsma-Jordan, S. E., Hilker, K., Stoppelbein, L. & Elkin, T. D. (2003). [Are child routines related to medical adherence in children with sickle cell disease and diabetes?] Unpublished study in progress.

Tabachnick, B. G. & Fidell, L. S. (2001). *Using multivariate statistics.* 4th Ed. New York: Harper Collins.

Umansky, D. (1997, March). Test-taking know-how: Skills and secrets to improve comprehension and raise scores. *Working Mother, 20,* pp. 42-44, 46.

Wahler, R. G. (1980). The insular mother: Her problems in parent-child treatment. *Journal of Applied Behavior Analysis, 13,* 207-219.

Wahler, R. G. & Dumas, J. E. (1986). Maintenance factors in coercive mother-child interactions: The compliance and predictability hypotheses. *Journal of Applied Behavior Analysis, 19,* 13-22.

Wahler, R. G. & Dumas, J. E. (1987). Family factors in childhood psychology: Toward a coercion-neglect model. In T. Jacob (Ed.) *Family interaction and psychopathology: Theories, methods, and findings,* (pp. 581-672). New York: Plenum Press.

Wakschlag, L. S. & Keenan, K. (2001). Clinical significance and correlates of disruptive behavior in environmentally at-risk preschoolers. *Journal of Clinical Child Psychology, 30,* 262-275.

Webster-Stratton, C. & Hammond, M. (1988). Maternal depression and its relationship to life stress, perceptions of child behavior problems, parenting behaviors, and child conduct problems. *Journal of Abnormal Child Psychology, 16,* 299-315.

Webster-Stratton, C. & Hammond, M. (1990). Predictors of treatment outcome in parent training for families with conduct problem children. *Behavior Therapy, 21,* 319-337.

Welsh-Allis, G. & Ye, W. (1988). Psychopathology in children of parents with recurrent depression. *Journal of Abnormal Child Psychology, 16,* 17-28.

Williams, C. A., & Forehand, R. (1984). An examination of predictor variables for child compliance and noncompliance. *Journal of Abnormal Child Psychology, 12,* 491-504.

Wolfe, D. A., Kelly, J. A., & Drabman, R. S. (1981). "Beat the Buzzer": A method for training an abusive mother to decrease recurrent child conflicts. *Journal of Clinical Child Psychology, 10,* 114-116.

APPENDIX A

FACTOR LOADINGS FOR THE CRI

Items	Factor Loadings				Item-Total r
	1	2	3	4	Total r

Factor 1: Daily Living Routines

Items	1	2	3	4	Total r
My child takes turns with family members talking about their day	.69				.59
My child does the same things each night before bed (e.g., brush teeth, read story, say prayers, and kiss parent goodnight)	.65				.62
My child has a set routine for getting ready in the morning (e.g., brushing teeth, washing face, doing hair, and dressing)	.58				.51
My child wakes up at about the same time on week days	.57				.41
My child eats meals with family at the table each day	.56				.43
My child hugs / kisses parent before bed	.55				.44
My child goes to bed at about the same time on week nights	.54				.48
My child spends special time talking with parent (e.g., in the car or before bed) each day	.53				.47
My child eats breakfast at about the same time and place (e.g., at kitchen table or at school) each morning	.53				.46
My child eats dinner at about the same time each day	.52				.44
My child brushes teeth before bed	.51				.45

Factor 2: Household Responsibilities

Items	1	2	3	4	Total r
My child picks up dirty clothes after changing		.75			.66
My child cleans up food mess after snack		.72			.64
My child picks up toys and puts them away when done playing		.72			.59
My child straightens bedroom daily		.67			.55

Items	Factor Loadings				Item-
	1	2	3	4	Total r
My child washes hands before mealtime		.57			.53
My child has regular chores (e.g., takes out trash, helps with laundry, feeds/cares for family pet)		.55			.48
My child helps clean up after meals		.53			.52
My child washes hands after using toilet		.52			.43
My child says prayers before meals		.45			.48

Factor 3: Discipline Routines

Items	1	2	3	4	Total r
My child receives smaller punishment for minor misbehavior (e.g., not following instructions), and larger punishment for major misbehavior (e.g., fighting)			.74		.60
My child is disciplined for misbehavior (e.g., time out, loss of a privilege, or spanking)			.71		.53
My child knows what will happen if he or she doesn't follow parent instructions or rules			.70		.54
My child is praised or rewarded for specific good behavior (e.g., "I like the way you put away your toys")			.61		.53
My child receives rewards or privileges for specific good behavior (e.g., finishing homework or completing chores)			.54		.42
My child helps decide and prepare for family fun or events			.52		.50
My child has time limits on fun activities (e.g., outside play, TV, video games, or phone use)			.48		.48
My child takes part in "family time" each week when the family does planned activities together (e.g., play games, watch movies, go out to eat)			.47		.45
My child has household rules such as "No cursing", "No talking while eating" or "No running inside"			.47		.50
My child must finish household responsibilities (e.g., homework or chores) **before play time**			.45		.47
My child helps puts things away after shopping			.43		.43

| | Factor Loadings | | | | Item- |
Items	1	2	3	4	Total r
Factor 4: Homework Routines					
My child studies for tests (e.g., weekly spelling test)				.71	.55
My child is supervised by an adult who helps child with homework by explaining tasks, demonstrating the task, and/or checking the answers when it is completed.				.70	.51
My child begins homework at about the same time and place (e.g., at the kitchen table) during the week				.68	.67
My child completes homework				.68	.63
My child shows parent school work after school (e.g., art work or spelling test)				.62	.52
Eigenvalues	**4.39**	**4.28**	**4.13**	**3.11**	
Percent of Variance	**12.2**	**11.9**	**11.5**	**8.6**	

Note: The age range of the 216 children was 5 to 12 years.

DEMOGRAPHICS QUESTIONNAIRE

These forms are for mothers with children between the ages of 6 and 12 years. If you **do not** provide most of the care for a child age 6 to 12, please **STOP** and tell the researcher now.

Child's Age _____   **Child's sex?** Girl _____   Boy _____

Child's Race: White _____   Black _____   Hispanic _____   Asian _____   Other _____

Have this child ever received help (from a counselor, therapist, or psychologist) due to behavior problems? Yes ____ No ____   If *yes*, when? From: _____ To: _____
                                                                                                Month / Year   Month / Year

Is your child in special education ? Yes ____   No _____   If *yes*, what for? _____

ABOUT YOU AND YOUR FAMILY

Your gender: Female _____   Male _____   **Your age:** _____ years

Race: White____   Black ____   Hispanic ____   Asian ____   Other _____

Marital Status: Never Married/Living Alone _____   Never Married/Living with Someone _____
              Married _____   Separated _____   Divorced _____   Widowed ____

Education: What is the highest level of education completed by:

Yourself	Your Spouse/Significant Other
_____ 6th grade or less	_____ 6th grade or less
_____ Junior high school (7th, 8th, 9th grade)	_____ Junior high school (7th, 8th, 9th grade)
_____ Some high school (10th, 11th grade)	_____ Some high school (10th,11th grade)
_____ High school graduate	_____ High school graduate
_____ Some college (at least 1 year) or specialized training	_____ Some college (at least 1 year) or specialized training
_____ Standard college or university graduate	_____ Standard college or university graduate
_____ Graduate professional degree (Master's, Doctorate)	_____ Graduate professional degree (Master's, Doctorate)

Occupation: Please provide your job title or position, NOT the just name of your employer. For example, if you are a teacher at Lee High School, please state "high school teacher". If you are **retired**, please state your prior occupation. If you **do not work** outside the home, state "unemployed".

What is your occupation? _____
                                                            (please be specific)

What is your spouse's occupation?_____
                                                            (please be specific)

Income: What is the total annual income of your household? (Combine the income of **all** the people living in your house right now.)

_____ $ 0 -- $ 4,999   _____ $15,000 -- $24,999   _____ $50,000 -- $74,999

_____ $ 5,000 -- $ 9,999   _____ $25,000 -- $34,999   _____ $75,000 -- $99,999

_____ $10,000 – $14,999   _____ $35,000 -- $49,999   _____ $100,000 and above

APPENDIX C

CHILD ROUTINES INVENTORY (39-ITEM VERSION)

Routines are events that occur at about the same time, in the same order, or in the same way every time. **Please rate how often your child engages in each routine by circling a rating ranging from 0 (never) to 4 (nearly always) of *how often* your child has engaged in this routine <u>in the last month</u>.** If an item <u>does not apply</u> to your child due to his or her age, <u>please mark "0"</u>.

My child…	How **often** does it occur at about the **same time** or in the **same way**? 0 = Never 1 = Rarely 2 = Sometimes 3 = Often 4 = Nearly Always
1) … has a set routine for getting ready in the morning (e.g., brushing teeth, washing face, doing hair, and dressing)	0 1 2 3 4
2) … knows what will happen if he or she doesn't follow parent instructions or rules	0 1 2 3 4
3) … takes turns with family members talking about their day	0 1 2 3 4
4) … has regular chores (e.g., takes out trash, helps with laundry, feeds/cares for family pet)	0 1 2 3 4
5) … straightens bedroom daily	0 1 2 3 4
6) … eats meals with family at the table each day	0 1 2 3 4
7) … hugs / kisses parent before bed	0 1 2 3 4
8) … cleans up food mess after snack	0 1 2 3 4
9) … spends special time talking with parent (e.g., in the car or before bed) each day	0 1 2 3 4
10) … practices for lessons, such as piano or dance at about the same time each day	0 1 2 3 4
11) … does the same things each night before bed (e.g., brush teeth, read story, say prayers, and kiss parent goodnight)	0 1 2 3 4
12) … has household rules such as "No cursing", "No talking while eating" or "No running inside"	0 1 2 3 4
13) … wakes up at about the same time on week days	0 1 2 3 4
14) … must finish household responsibilities (e.g., homework or chores) **before play time**	0 1 2 3 4
15) … receives rewards or privileges for specific good behavior (e.g., finishing homework or completing chores)	0 1 2 3 4
16) … eats dinner at about the same time each day	0 1 2 3 4
17) … brushes teeth before bed	0 1 2 3 4
18) … picks up dirty clothes after changing	0 1 2 3 4
19) … washes hands before mealtime	0 1 2 3 4
20) … reads or listens to the Bible or other devotional book with family each day	0 1 2 3 4
21) … goes to bed at about the same time on week nights	0 1 2 3 4
22) … helps clean up after meals	0 1 2 3 4
23) … has time limits on fun activities (e.g., outside play, TV, video games, or phone use)	0 1 2 3 4

My child…	How **often** does it occur at about the **same time** or in the **same way**? 0 = Never 1 = Rarely 2 = Sometimes 3 = Often 4 = Nearly Always
24) … washes hands after using toilet	0 1 2 3 4
25) … is disciplined for misbehavior (e.g., time out, loss of a privilege, or spanking)	0 1 2 3 4
26) … helps decide and prepare for family fun or events	0 1 2 3 4
27) … receives smaller punishment for minor misbehavior (e.g., not following instructions), and larger punishment for major misbehavior (e.g., fighting)	0 1 2 3 4
28) … picks up toys and puts them away when done playing	0 1 2 3 4
29) … eats breakfast at about the same time and place (e.g., at kitchen table or at school) each morning	0 1 2 3 4
30) … makes bed each morning	0 1 2 3 4
31) … helps puts things away after shopping	0 1 2 3 4
32) … is praised or rewarded for specific good behavior (e.g., "I like the way you put away your toys")	0 1 2 3 4
33) … says prayers before meals	0 1 2 3 4
34) … takes part in "family time" each week when the family does planned activities together (e.g., play games, watch movies, go out to eat)	0 1 2 3 4

The next questions are about school and homework.

Does your child attend school?	YES NO

If you answered "NO", please stop here and go to the next page.   If you answered "YES", please continue.

Has your child attended school in the past month?	YES NO

If you answered "YES", please continue with #35.

If you answered "NO", please answer #35 to #39 based on how frequently your child engaged in these activities during the LAST MONTH school was in session

35) … shows parent school work after school (e.g., art work or spelling test)	0 1 2 3 4
36) … begins homework at about the same time and place (e.g., at the kitchen table) during the week	0 1 2 3 4
37) … is supervised by an adult who helps child with homework by explaining tasks, demonstrating the task, and/or checking the answers when it is completed.	0 1 2 3 4
38) … completes homework	0 1 2 3 4
39) … studies for tests (e.g., weekly spelling test)	0 1 2 3 4

APPENDIX D

INTERCORRELATIONS AMONG PREDICTOR VARIABLES AND CHILD ROUTINES

Variables	2.	3.	4.	5.	6.	7.	8.
1. CRI Total	-.28**	.44**	.51**	.31**	-.23**	-.34**	-.27**
2. BSI-18 (Mat. Distress)	--	-.21**	-.23**	-.00	.47**	.24**	.44**
3. PBI Supportive/Engaged		--	.57**	.47**	-.08	-.29**	-.24**
4. APQ Involvement			--	.56**	-.20*	-.26**	-.15
5. APQ Positive Parenting				--	-.14	-.09	-.10
6. PBI Hostile/Coercive					--	.24**	.48**
7. APQ Poor Monitor./Sup.						--	.24**
8. APQ Inconsistent Disc.							--

* $p < .05$, ** $p < .01$.

INTERCORRELATIONS AMONG PREDICTOR VARIABLES AND
CHILD EXTERNALIZING BEHAVIOR PROBLEMS

Variables	2.	3.	4.
1. Externalizing Behavior Composite	-.42**	.26**	-.20*
2. Child Routines Total (centered)	--	-.28**	.27**
3. Maternal Distress Total (centered)		--	-.35**
4. Child Routines x Maternal Distress (centered)			--

* $p < .05$, ** $p < .01$.

VITA

Sara Elizabeth Sytsma Jordan was born in Shelby, Michigan, and raised in Big Rapids, Michigan. She attended Western Michigan University where she received her Bachelor of Arts degree in psychology in April 1995. She received her Master of Science in clinical-behavioral psychology from Eastern Michigan University in April 1998. In August 1998, she began her doctoral training in clinical psychology at Louisiana State University under the supervision of Mary Lou Kelley, Ph.D. She received her Master of Arts in psychology from Louisiana State University in 2001. She is currently completing her pre-doctoral internship at the University of Mississippi Medical Center, under the supervision of Ronald Drabman, Ph.D. She will complete her Doctor of Philosophy in clinical psychology, with a subspecialty in child, in August 2003. Following completion of her degree, she plans to accept a position as Assistant Professor in the Department of Psychology at the University of Southern Mississippi. Her primary research and clinical interests are in the areas of parenting, child routines, child behavior problems, behavioral pediatrics, and pervasive developmental disorders.