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Further Validation of the Child Routines Questionnaire: Child Self Report

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FURTHER VALIDATION OF THE CHILD ROUTINES QUESTIONNAIRE:

CHILD SELF REPORT

by

Christina Binder Stabler

Abstract of a Dissertation
Submitted to the Graduate School
of The University of Southern Mississippi
in Partial Fulfillment of the Requirements
for the Degree of Doctor of Philosophy

December 2012

ABSTRACT

FURTHER VALIDATION OF THE CHILD ROUTINES QUESTIONNAIRE:

CHILD SELF REPORT

by Christina Binder Stabler

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There has been a lack of empirical studies on the impact of child routines on adjustment. A series of instruments, the Child Routines Questionnaires (CRQ) and the Adolescent Routines Questionnaires, were developed to assess routines in childhood. Recently, a self-report version of the CRQ was developed for children aged eight to 12. Initial validity estimates of the CRQ were weak, which may have been a result of cross-informant variance stemming from parent and child reports. The primary purpose of this study is to reevaluate the factorial and construct validity of the self-report CRQ with use of a single informant. The 39-item Child Routines Question-Child Self Report was completed by 374 children ages eight to 12. Children also completed measures on family stability and child behaviors, and caregivers completed a demographic form and a child behavior questionnaire. Although lower than expected fit statistics were obtained with the Confirmatory Factor Analysis, Exploratory Factor Analysis reaffirmed the three-factor structure of the CRQ-CSR in the current study, with several items changing factors. Nonetheless, internal consistency was excellent and consistent with the measure development study, while validity coefficients were much stronger than those obtained during the measure development study. Due to the larger, more heterogeneous sample, the current CRQ-CSR factor structure obtained in this study is recommended for continued development and use of the measure.

The University of Southern Mississippi

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A Dissertation
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for the Degree of Doctor of Philosophy

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TABLE OF CONTENTS

LIST OF TABLES

CHAPTER I

INTRODUCTION

Routines have been given a great deal of attention from the media in outlets such as parenting magazines and television shows. Although these sources report that well-established routines are necessary for optimal child development, there is little empirical research to support their claims (Jordan, 2003). Empirical study of routines has grown in popularity; however, researchers have just recently begun to examine different types of routines and their function in child development.

Although specific routines may vary between individuals and families, all routines are events or activities that occur in a predictable pattern. Multiple researchers have proposed theoretical models suggesting the benefits of routines for optimal childhood development. For example, Fiese, Wambold, and Anbar (2005) suggested that routines may be related to medication adherence in children with a chronic illness, such as asthma. Additionally, routines have been successfully used as a component in treatment programs for child behavior problems (Dadds, Sanders, & Bor, 1984; Drabman & Creedon, 1979; Drabman & Rosenbaum, 1980; Wurtele & Drabman, 1984). However, further research is needed to determine the overall function of routines and the type of routines that are most beneficial for child development.

Empirical study of routines originated in the family unit. Instruments such as the Family Routines Inventory (Jensen, James, Boyce, & Hartnett, 1983) were developed to assess the relationship between family routines and family health and well-being. The original studies have led to an increase in empirical studies examining the function of family routines and the function that routines serve for the individuals within the family unit, specifically children (Sytsma, Kelley, & Wymer, 2001).

Child routines instruments have been developed to provide a means to obtain child routine data. Specifically, the Child Routines Questionnaire (CRQ; Sytsma et al., 2001) was the first parent-report measure to examine daily child routines of school-aged children. The CRQ has since been expanded to include a preschool parent-report (Wittig, 2005), adolescent parent and self-report (Meyer, 2008), and, most recently, child self-report (Binder, 2009) versions.

Although the child report version of the Child Routines Questionnaire demonstrated favorable initial psychometric properties, further analysis is needed to determine if the self-report CRQ is a reliable and valid instrument. The development study of the CRQ self-report yielded strong coefficient alpha and test-retest reliability estimates; however, inter-rater reliability between self child-report and parent-report and construct validity estimates were not as strong as expected. In part, this may have been due to variance introduced by multiple informants. Furthermore, exploratory factor analysis in the development study yielded a three-factor solution rather than the predicted four-factor solution observed with the original parent report measure. Thus, confirmatory factor analysis as well as further construct validation with a single informant will aid in offering psychometric support for use of the self-report CRQ. Therefore, the purpose of the present study is to further evaluate the factorial and construct validity of the self-report version of the CRQ.

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

Researchers in the fields of sociology and anthropology gained an initial interest in routines and rituals in the 1950s. Early researchers theorized about what routines are, the purpose they serve, and why they are important to humans. Initial studies used behavioral observations and interviews to examine how routines vary across families. It

was believed that routines provide a sense of stability for the family. If routines develop into a form of symbolic meaning for families, they become known as rituals (Boyce, Jensen, James, & Peacock, 1983). Both routines and rituals were believed to promote health, resiliency, and adaptation within the family. Since that time, a series of standardized instruments, assessing general routines of the family and child as well as specific routines such as medication management and bedtime routines, have been developed to empirically examine the function of routines.

Although the exact definition of routines varies between studies, most researchers agree that routines are patterned activities that occur with predictable regularity (Boyce et al., 1983; Fiese et al., 2002). Rituals have often been studied along with routines, with the idea being that rituals and routines differ based on the symbolic meaning and importance for the individual (Fiese et al., 2002). Specifically, if *meaning* becomes attached to a patterned activity, it shifts from being considered a routine to a ritual. When a family routine is disrupted the family's schedule may be interrupted; however, disruption of a ritual may result in a loss of identity for the individual within the family unit. Although it is believed that rituals and routines can break down when the family is under significant stress, such as alcoholism in a family member or a divorce, research suggests that the maintenance of the routines and rituals can act as a buffer against the negative effects of family stressors (Bennett, Wolin, & McAvity, 1988; Bennett, Wolin, Reiss, & Teitlebaum, 1987; Henry & Lovelace, 1995; Wolin & Bennett, 1984; Wolin, Bennett, Noonan, & Teitlebaum, 1980). Early studies have focused on the function of family routines, but child and family routine research is slowly gaining interest. Recent studies have begun to examine the potential benefits of child routines for optimal child development.

Relevance of Routines to Child Functioning

Recent advances in measurement tools have allowed for the study of individual

child routines. Many studies examining the relevance of routines in child functioning

have found routines to be beneficial and suggest that routines may be directly related to

child adjustment and well-being. Studies have examined correlational relationships

among typical children, clinic-referred children, and children with chronic illness.

Researchers have also begun to explore the role of routines as moderators and mediators

in larger models of child adjustment.

Initial studies found moderate correlations between routines and related

constructs, such as maternal depression, parenting stress, and parenting practices (Jordan,

2003; Sytsma-Jordan, Kelley, & Henderson, 2002). Specifically, positive relationships

have been observed between routines and positive parenting practices as well as negative

relationships between routines and both negative parenting practices and maternal

depression and distress. Additionally, child routines have been inversely related to child

externalizing behaviors.

Among clinic-referred samples, Sytsma-Jordan and colleagues (2002) found that

child routines discriminated between children with ADHD symptomatology and

nonclinical participants. Children with ADHD symptoms had significantly fewer daily

routines than the nonclinical sample. Furthermore, parents of clinically-referred children

demonstrated higher levels of parenting stress and maternal depression.

Routines have also been examined in children with a chronic illness. For example,

Jordan, Stoppelbein, Hilker, Jensen, and Elkin (2006) examined the relationship between

child routines and medical regimen adherence in children with sickle cell disease. This

study found a positive relationship between child routines as reported by the parent and

both treatment adherence as well as a parent's knowledge of the disease. Another study by Fiese, Winter, Wamboldt, Anbar, and Wamboldt (2009) found that family mealtime management, which is inclusive of family mealtime routines, mediated between childhood asthma symptoms and separation anxiety. These studies also provide preliminary evidence suggesting the benefits of well-established routines in a pediatric sample.

Some studies have suggested that maintaining frequent routines may buffer against the harmful impact of stressors and factors related to child adjustment, whereas others have supported a mediational role of routines between contextual variables and child outcomes (Henry & Lovelace, 1995). Specifically, Henry and Lovelace (1995) found that regularity of routines mediated between remarriage of one parent and adolescent satisfaction. Yet another study found a higher level of family routines was associated with weaker relationships between daily hassles and both internalizing and externalizing behavior problems in an at-risk inner city sample of children (Kliewer & Kung, 1998). Initial findings with family routines prompted further examination of the relationships between child routines and related constructs. For example, Suozzi and Jordan (2012) extended the findings of Kliewer and Kung (1998) by examining the role of child-specific routines in relation to daily hassles and child adjustment. This study found that high levels of child-specific routines attenuated the relationship between daily hassles and internalizing behavior problems in children.

With respect to mediational models, Jordan, Roberts, and Kelley (2003) found that child routines mediate the relation between maternal distress and child externalizing behavior problems. Findings from this study suggest that distressed mothers who can maintain positive parenting practices and avoid negative parenting practices are more

likely to establish child routines and to have children with lower rates of externalizing behavior problems. Additionally, child routines have been found to mediate the relation between child behavior problems and treatment adherence in children with Type I diabetes (Greening, Stoppelbein, Konishi, Jordan, & Moll, 2007). These studies provide further support that the examination of routines and the possible incorporation of routines into treatment planning may be beneficial in clinical settings. Although preliminary research is promising, there is still a need to further examine child routines as they relate to other domains, such as divorce, negative parenting practices, parental illness, and other childhood stressors. Availability of a psychometrically sound child self report form of the CRQ would permit additional study of the function of routines relative to contextual variables and child outcomes.

Treatment programs have also started focusing on routines and rituals as a central component for optimal family functioning. Strengthening Family and Coping Resources (SFCR; Kiser, Donahue, Hodgkinson, Medoff, & Black, 2010) is one program that helps families who have suffered a traumatic event recognize and maintain both the rituals that are core to the family and routines (individual and family) that are important everyday family functioning. This program has been used with families who have suffered a variety of traumas, including natural disasters (i.e. hurricane) or loss of a family member (i.e., death or incarceration), and with military families (i.e. wounded parent returning from deployment).

Overall, research on the impact of child routines to aspects of child development and adjustment is still in its infancy. This is partially due to the only recent development of parent and self-report standardized instruments to assess for child routines across the developmental span. Therefore, continued research using the newly developed measures

is necessary to improve our understanding of the impact of child routines on child development. It is also important to examine the psychometric properties of these measures, such as the self-report Child Routines Questionnaire, to provide support that they are reliable and valid. Only with psychometrically sound instruments, can researchers continue to examine unexplored areas and gain further insight to the importance of child routines on child adjustment.

Measurement of Routines

Routines have been examined through the use of informal methods, such as checklists and interviews, and more formal standardized rating scales. Until recently, standardized instruments have focused on family routines, not routines of the individuals within the family unit.

Informal measurement methods. Routines were initially studied informally, through use of interviews (Fiese et al., 2002; Frare, Axia, & Battistella, 2002; Grusec, Goodnow, & Cohen, 1996; Guidubaldi, Cleminshaw, Perry, Natasi, & Lightel, 1986; Israel, Roderick & Ivanova, 2002). Initially, informal methods were used because no standardized measures existed; however, some researchers continue to prefer the use of informal methods because of some added benefits. For example, interviews are beneficial in that they allow the participant to clarify their response, including frequency and meaning, as well as add additional information. Interviews have also aided in the development of standardized instruments. For example, information was obtained through use of interviews in pilot studies for the development of the Stability of Activities in the Family Environment (SAFE; Israel & Roderick, 2001). However, this method brings about multiple methodological concerns.

First, interviews are time consuming. As a result, most studies that use interviews as a method of obtaining routine data contain few participants (Evans & Rodger, 2008; Houldin, 2007; Yinusa-Nyahkoon, 2010). This is problematic in that few participants make research findings difficult to generalize to the population. Semi-structured and structured interviews also require clear coding techniques and extensive staff training, which are often beneficial in that they allow an opportunity to clarify respondents' responses, but are also time intensive. Moreover, the time required by interviews also reduces their cost effectiveness. Second, unstructured interviews cannot be standardized, making it difficult to evaluate reliability and validity, establish norms, and make cross-sample comparisons.

Third, there is also great variability in how routines are operationalized across studies that use informal methods for data collection. Lack of a standardized definition makes it unclear to know specifically what the researcher is examining and may explain low inter-rater agreement in some studies leaving the "routine" construct to be subjectively defined by the participant and the researcher (Frare et al., 2002). A measure with a clear and specific operational definition will not only help the participants understanding the construct in question but it will also provide consumers of the research with a clear understanding of the construct that was studied.

Furthermore, it is difficult to determine if studies are tapping into the same type of routines when using informal methods. For example, standardized instruments have categorized routines into domains, such as bedtime, morning, and homework routines (Fiese & Kline, 1993; Henderson & Jordan, 2010; Sytsma et al., 2001). Without using a standardized measure with clearly operationalized routines definitions and domains, it is difficult to compare routine domains across studies.

Finally, many studies that use interviews also fail to mention important information such as interviewer credentials, format, and coding procedures. Specifically, Guidubaldi et al. (1986) and Israel et al. (2002) did not report interviewer characteristics, including the training that was provided for the interviewers or inter-rater reliability coefficients. Coding information was also not reported by Guidubaldi et al. (1986). Additionally, information about the interview itself, such as the format, structure, and length of interviews were not reported. Absence of vital methodological information brings results of these studies into question and suggests a need for replication. Although informal methods are still used today, due to many methodological limitations presented by informal measurement methods, these methods have given way to standardized measurement.

Formal measurement methods. Formalized measurement methods were developed to obtain a standardized measure of patterned activities. These measures have been assess specific types of patterned behaviors in attempt to tap into specific constructs and assess these activities across a range of domains, including in family settings and routines specific to children.

Family routines instruments. Initial measures that were developed to obtain routine information focused on routines of the family unit. With time, methodology has improved. Measures have become less subjective and there are more standardized instruments available. This has allowed for routines to be examined in a systematic way using the same operational definitions across studies. As a result, the routine construct is not subjectively defined in these studies and results can be better compared across studies. Examples of such measures include the Family Routines Inventory (Jensen et al., 1983), the Family Rituals Questionnaire (Fiese & Kline, 1993), and Stability of Activities

in the Family Environment (Israel et al., 2002). Each measure provides a slight variation of data on family routines, rituals, and stability.

Jensen et al. (1983) were the first to develop a standardized instrument of family routines, The Family Routines Inventory (FRI). The FRI operationally defines routines as activities within the family unit that are repeated until they become predictable (Boyce et al., 1983). All items of the FRI load onto one total score based on frequency. The development and validation study found good estimates of temporal reliability and support for construct validity (Jensen et al., 1983). Researchers have since used this instrument to examine the relationship between family routines and a variety of variables, such as children's self-regulation (Brody & Flor, 1997) and mother's perception of overall family health (Sprunger, Boyce, & Gaines, 1985). Another measure that varies slightly from the FRI is the Family Rituals Questionnaire (FRQ; Fiese & Kline, 1993). The FRQ is different from the FRI in that it assesses for both family routines and rituals. A ritual is different from a routine in that a ritual holds symbolic meaning for the family. Therefore, it is suggested that a breakdown in rituals may cause a breakdown in an individual's identity within the group, not simply just an end to a predictable activity. The items measure routines across seven settings, including dinnertime, weekends, vacations, annual celebrations, special celebrations, religious holidays, and cultural traditions. Within each setting, participants are then asked to rate each item across six dimensions, which include roles, routines, attendance, affect, symbolic significance, and continuation. Scores are calculated for settings and dimensions and then a total score is calculated across settings and dimensions. The FRQ demonstrated adequate internal consistency and good temporal reliability. The development study also found support for construct validity of the FRQ.

Development of the FRI and FRQ provided researchers with a means to systematically examine the role and function of routines and rituals. Brody and Flor (1997) found evidence suggesting that family routines are related to self-esteem in children residing in a rural minority neighborhood. This study also found evidence suggesting that family routines are positively related to high academic achievement and low internalizing behaviors in males. Furthermore, one study used the FRQ to examine the role that family routines and rituals play in child adjustment among children with asthma (Markson & Fiese, 2000). Although family rituals did not moderate between child asthma and anxiety, rituals did moderate between family stress and general health and child anxiety. Specifically, high levels of family health/life stress risk and high levels of maternal reported family ritual meaning were associated with lower levels of child anxiety, suggesting that family ritual meaning served a protective function. Although these measures have provided a standardized means to assess for family routines, limitations still exist, including failure to assess routines of specific individuals within the family unit, such as the child (Jordan, 2003).

More recently, a measure to assess family routines and stability, the Stability of Activities in the Family Environment (SAFE), was developed in both a parent report form and in a revised child report form (SAFE-R; Israel et al., 2002; Ivanova, 2003). The SAFE-R measures both the regularity of and the subjective response to different family activities. The psychometric properties of the SAFE-R were based on a sample of 29 children aged six to 10. Test-retest and Cronbach's alpha provided good estimates of temporal reliability ($r = .82$) and internal consistency ($r = .75$) (Israel, Ivanova, & Roderick, 2006; Ivanova & Israel, 2006). Construct validity was supported through an

inverse relationship between child reported family stability and parent reported child behavior problems (Roderick, 2002).

Since its development, many studies have employed use of the original SAFE and revised form, the SAFE-R, to examine the benefits of family routines and stability. For example, Ivanova (2003) found that higher levels of family stability attenuated the influence of parental distress on child internalizing behavior problems. This study also found that both parent and child report of family stability inversely related to child internalizing behaviors and total child problems. Additionally, child report of family stability inversely related to child externalizing behaviors.

Although all of the aforementioned measures of family routines have aided in the study of routines and have assisted in providing support for the use of routines, all of them have different operational definitions and assess different variations of routines. For example, the SAFE examines family stability, whereas the FRQ assesses family rituals. These differences make the findings difficult to compare across studies. They also assess different subtypes of routines including weekend, dinnertime, and after school routines. Having a child and parent report measure that uses the same operational definition and measures the same routine domains will allow researchers to obtain comparable information about routines across a wider range of participants and compare findings across studies.

Additionally, all of the measures discussed up to this point fail to assess routines of specific individuals within the family unit. Specifically, none of the measures assess for routines specific to the child. Therefore, it is difficult to determine if child routines have an added benefit above and beyond the benefit that has been suggested with family routines. Child routine measures were subsequently developed to provide a means for

researchers to examine the impact of routines specific to the child, which may function

differently for an individual than they do for the entire family unit.

        Child routines instruments. Child routines measures were developed to

address limitations posed by family routine measures and to obtain a measure of routine

data that is specific to the individual child within the family unit. The first of these

measures was the Childhood Routines Inventory (CRI) by Evans et al. (1997). The 19-

item CRI is a parent report measure designed for preschool children age two to four to

assess the frequency/intensity of compulsive like behaviors. The questionnaire also

allows the parent to report if the behaviors are problematic. Exploratory factor analysis

revealed two factors which correspond to the *just right* and the *repetitive behaviors*

subscales. The *just right* subscale assesses the child's frequency and intensity of carrying

out a behavior until it is *perfect*, whereas the *repetitive behaviors* subscale included items

that related to the child's insistence on repeating certain behaviors. Examination of the

CRI psychometric properties revealed good internal consistency (Evans et al., 1997).

Support for convergent validity has also been reported through a significant relationship

between the CRI and the Short Sensory Profile (SSP), which measures sensory

processing behaviors ($r = -.42$, $p < .02$; Chen, Rodgers, & McConcachie, 2008). To

develop items for the measure, researchers used DSM-IV symptoms of compulsivity, but

reworded them to be less reflective of psychopathology. For example, one item asks

parents if the child is very aware of details at home, such as *flecks of dirt on the floor* or

imperfections in toys (Evans et al, 1997, p. 64). As a result, this measure has been used to

examine the role of child routines in childhood disorders such as Autism Spectrum

Disorders (Chen et al., 2008; Greaves, Prince, Evans, & Charman, 2006). This measure

was developed for preschool children; therefore, it was not designed to address typical

daily routines of school-age children. This measure also examines limited dimensions of routines, including the previously mentioned repetitive and compulsive routine behaviors.

In response for the need of a standardized instrument that could be used to systematically study routines specific to a broader age range of children, a series of instruments known as the Child Routines Questionnaires (CRQ) and Adolescent Routines Questionnaire (ARQ) were developed (Binder, 2009; Meyer, 2008; Sytsma et al., 2001; Wittig, 2005). The CRQ was initially developed as a parent-report child routine instrument for children aged five to 12 (Sytsma et al., 2001). The CRQ was also expanded into a parent-report preschool version for children aged two to five (Wittig, 2005) and a parent and self-report adolescent version for children aged 12 to 17 (Meyer, 2008). Most recently, the original school-age CRQ was developed as a self-report measure for children aged eight to 12, the Child Routines Questionnaire – Child Self Report (CRQ-CSR; Binder, 2009).

Information about routines was collected using the same operational definition of child routines and in the same format across all CRQ measures. Specifically, child routines were defined as "events that occur regularly: at about the same time, in the same order, or in the same way every time" (Sytsma et al., 2001, p. 243). Since most routine studies suggest that routines are a patterned activity, this operational definition was selected because it explains the *patterned activity* in a specific and clear way. Participants were asked to rate the frequency at which the routines occurred in the previous month.

Similar methods were employed for development of these measures. All of the development studies consisted of item generation, expert review for content validation, and item refinement. Self and parent-report versions of the school aged CRQ and the ARQ both used the same items and wording in both measures.

The CRQ-Child Parent Report, CRQ-Preschool Parent Report, and Adolescent Routines Questionnaire provided good reliability estimates and initial support for validity. Specifically, all of the parent-report versions of the child and adolescent routine measures were positively correlated with a family routines measure and inversely related to externalizing child behavior problems, providing support for convergent validity (Meyer, 2008; Sytsma et al., 2001; Wittig, 2005). The parent report CRQ provided further support for convergent validity through a significant relationship with parenting practices, whereas the ARQ self-report measure was positively related to adaptive behaviors and personal adjustment.

Psychometric properties for the CRQ-CSR differed slightly from those obtained for the parent-report and adolescent self-report routine measures. For example, although the self-report CRQ consisted of reworded items from the parent-report version, the factor structure of the self-report CRQ differed from that of the parent report version. Specifically, the parent-report CRQ consisted of four factors: Daily Living Routines, Discipline Routines, Household Responsibilities and Homework Routines. The self-report measure found support for only three of the original scales, which included Daily Living Routines, Discipline Routines, and Household Responsibilities. Items that loaded onto the Homework Routine subscale in the parent-report form evenly distributed across the Daily Living Routines and Discipline Routines subscales. Additionally, in examining the factor structure of the self-report CRQ, it became evident that some of the items loaded onto different factors than that of the parent-report version. Specifically, of the final thirty-five items (item one and validity items excluded), twenty-three items remained on the same subscale as demonstrated in the CRQ-CPR initial validation. Items changed the most between Daily Living subscales and Discipline Routines subscales.

Four items moved from the Discipline Routines subscale of the CRQ-CPR to the Daily

Living Routines subscale on the CRQ-CSR and two items moved from the CRQ-CPR

Daily Living Routines subscale to the CRQ-CSR Discipline Routines Subscale. The only

difference in the Household Responsibilities subscale was that one item moved from the

CRQ-CPR Discipline Routines subscale to the CRQ-CSR Household Routine Subscale.

Moreover, one item from the parent report CRQ was deleted on the self-report CRQ due

to a low item-total correlation and low factor loading. Therefore, there is a need for

further support for the factorial validity of the self-report CRQ. To determine the most

appropriate factor solution, three and four factor solutions will be examined. Since the

three-factor solution that emerged in the CRQ-CSR development study differed from the

four-factor solution that was predicted and previously obtained with the CRQ-CPR, there

is a need to compare, in a new sample, which is the model of best for future use of the

CRQ-CSR. If the three-factor structure that was obtained during the exploratory factor

analysis withstands in this sample, it would provide stronger support that children and

parents may view routines differently.

      For development of the CRQ-CSR, reliability was examined similarly through

coefficient alpha, two-week temporal reliability, item-total correlations, and inter-rater

reliability (Appendices E-H). Reliability estimates for the CRQ-CSR were variable.

Specifically, the self-report CRQ yielded a coefficient alpha of .91, similar to the parent-

report form, with subscale alphas ranging from .78 to .85 (Binder, 2009). Additionally,

temporal reliability was demonstrated through two-week test-retest correlation

coefficients, $r = .55$ to .77. When assessing inter-rater reliability, the development study

found fewer than expected significant correlations between the CRQ-CSR and the CRQ-

CPR. The only significant relationship between expected subscales of the parent and self-

report CRQ was demonstrated through a positive relationship between the Household

Responsibilities subscales, r (127) = .20; $p < .05$. However, significant relationships were

also demonstrated between the CRQ self-report Daily Living Routines subscale and the

CRQ parent-report Homework Routines subscale, r (127) = .190; $p. < .05$, as well as

between the self-report Discipline Routines subscale and the parent-report Daily Living

Routines subscale, r (127) = .23; $p < .01$. Nevertheless, the magnitude of these

relationships was lower than expected.

Validity refers "to the degree to which the test actually measures what it purports

to measure." (Anastasi, 1986, p. 28). According to Cronbach and Meehl (1955), construct

validity is important when the researcher has no definite criterion of the underlying trait

that the measure is intended to assess. Convergent and divergent validity are specific

types of construct validity. Convergent validity is what is commonly assumed to be

construct validity, in which theoretically predicted associations are observed between the

test and measures of related constructs (Campbell & Fiske, 1959), whereas with divergent

validity, non-significant or weak relationships are observed between the test and

measures of theoretically unrelated constructs. Criterion-related validity occurs when

instrument results demonstrate expected relationships with a theoretically related

criterion variable. Specifically, it provides a measure of the extent to which an outcome

can be predicted or concurrently related to scores on a measure (Thorndike, 1997).

Construct and criterion-related validity were also examined as part of the measure

development study (Appendixes G and H). Limited support for construct validity was

demonstrated through relationships with related constructs. For example, a positive

relationship between the FRI routine endorsement scale and the self-report CRQ, $r = .24$,

$p < .05$, provided supportive for convergent validity (Binder, 2009). Although the

relationship between the self-report CRQ and a measure on family routines was significant, the relationship was again much lower than expected. Additionally, the self-report CRQ failed to significantly relate to parent-report of externalizing behaviors (Binder, 2009). Criterion-related validity of the CRQ-CSR was also examined similarly though their relationship with a child routines checklist that was developed for the purpose of this study. The child routine checklist consisted of daily routine activities that are measured on the CRQ-CSR. Activities that were expected to occur on less frequently, or on a weekly basis, were not included on the checklist. The child routine checklist was administered to participating children, Monday through Friday, the week preceding the completion of the CRQ-CSR. Support for criterion-related (predictive) validity was demonstrated through a significant relationship between the CRQ-CSR total score and the child report routine checklist total score ($r = .56$, $p < .001$). Overall, the self-report CRQ demonstrated much lower than expected validity coefficients in the development study (Binder, 2009). Therefore, the self-report CRQ demonstrated support for criterion-related validity, but relatively weaker support for construct validity. These relationships may have been weaker than expected because of the variance resulting from multiple informants. This was not especially surprising, since Reynolds and Kamphaus (2004) found low inter-rater agreement (on average $r = .24$) between parent and child report across multiple studies. However, further evaluation of the self-report CRQ is needed to examine the construct validity with self-report measures of related constructs and to confirm the factor structure.

The CRQ-CSR helps address many of the limitations of previously employed methods of data collection (e.g. interviews). Standardized measures are helpful for research and clinical purposes. For research, the CRQ-CSR allows for data collection in

group settings, rather than individually, offering a much less time intensive method for measuring child routines. As a standardized measure, the CRQ-CSR also does not require extensive training, making it a much more cost-effective method of data collection, in comparison to interviews. A standardized measure also yields quantitative data that lends itself to efficient data analyses rather than requiring extensive coding techniques. Moreover, due to the use of a standard operational definition of child routines, data obtained from this standardized measure will also be able to be compared across studies. Continued development and refinement of standardized measures of child routines will allow for examination of deviations from a normative sample so that we can begin to study if deviations from the norm are indicative of or predictive of clinical problems.

There are additional clinical benefits of the CRQ-CSR. For example, use of the CRQ-CSR allows for collection of routine information that is specific to each child within the family unit. The dual informant measure allows for parent and child report of routines, which has not previously been available for this instrument and age group. Multi-informant assessment is the gold standard in child assessment and permits clinicians to examine similarities and differences in informants' perceptions of a given construct, in this case, child routines. For example, the parent may believe that the child has routines in place, but may not perceive their environment the same way as the parent and ultimately not feel a sense of stability. A child's need for the perception of stability in their environment can be a focus of treatment. Thus, having multiple measures to obtain information across different informants will be beneficial to assess different perceptions. Additionally, since more frequent child routines have been shown to attenuate the relationship between daily hassles and child internalizing behavior problems (Suozzi & Jordan, 2012), routines may also be an appropriate intervention strategy. The CRQ can

also be used as a progress monitoring tool when trying to establish routines in children receiving therapy services. Moreover, the CRQ can also be used as a progress monitoring instrument with already established treatment programs that focus on routines as a component of their treatment program, like the previously mention SFCR.

Summary and Current Study

There have been few empirical studies on the impact of routines in childhood. This is in part due to the lack of instruments developed to study routines in children. Due to this limitation, in recent years, researchers have developed standardized instruments to measure routines. Initially, instruments were developed to obtain information on family routines. Both the FRI and FRQ have been used to examine the relationships between routines/rituals and stressors and child adjustment (Henry & Lovelace, 1995; Wolin, Bennett Noonan, & Teitlebaum, 1980). For example, Markson and Fiese (2000) used the FRQ to study anxiety in children with asthma. They found that higher levels of family stress coupled with high levels of maternal reported family ritual meaning and paternal reported family routine were related to lower levels of anxiety in children with asthma. Also, Kliewer and Kung (1998) used the FRI to examine the function of routines in an inner city population. Following development of family routine instruments, researchers developed standardized instruments to examine routines specific to the individual within the family unit. A series of child routine instruments have been developed to examine routines in children from preschool through adolescence (Binder, 2009; Meyer, 2008; Sytsma et al., 2001; Wittig, 2005). Although some of the measures have well-established psychometric properties, such as the CRQ-CPR, many of the newly developed measures lack strong support for validity.

Specifically, a different factor structure was demonstrated with the self-report CRQ than the parent-report CRQ. Not only did items from the Household Responsibilities subscale of the parent-report measure load onto different factors in the self-report measure, but other items did not load onto the same factors for the parent-report and self-report measures. Furthermore, the self-report CRQ failed to demonstrate strong support for construct validity in the development study. Specifically, convergent validity was not well supported because of lower than expected validity coefficients between self-reported child routines and parent-report on related constructs, which may have stemmed from low inter-rater agreement across multiple informants.

Therefore, the goal of this study was to further examine the validity of the self-report CRQ. One goal of this study was to reevaluate the factor structure of the self-report CRQ with a new, larger sample. First, confirmatory factor analysis was used to determine if the three-factor structure (daily living routines, household responsibilities, and discipline routines) was confirmed in a new, larger sample. However, a one factor, three factor, and four factor model were tested to determine the model of best fit. Second, construct validity was evaluated more extensively through examination of the relationship between self-report of child routines and self-report of a broader range of theoretically related and unrelated constructs, in order to reduce variance stemming from multiple raters (Thurstone, 1952). Convergent validity was expected to be supported through moderate positive relations between the self-report of child routines and self-report of family routines and stability, and personal adjustment, as well as through negative relations with self-report of inattention, hyperactivity, social stress, sense of inadequacy, external locus of control, and depression and parent-report of externalizing

and internalizing behavior problems. Divergent validity was expected to be demonstrated

through non-significant relations with self-report of school problems and atypicality.

CHAPTER II

METHODOLOGY

Participants

Participants were included in the study if they returned signed consent forms and completed 90% of the CRQ-CSR. A total of 374 children between the ages of 8 and 12 (M = 10.23, SD = 1.20) and their caregivers participated in this study (see Table 1). Of the participating children, 44.4% were reported to be male and 55.6% were female. Regarding race, 58.8% of the children were Caucasian, 21.9% were Hispanic, 16.3% were African American, 0.8% were Asian, and 2.1% were other. Based on caregiver report, 13% of these children who completed data collection in Mississippi and Louisiana had received previous psychological treatment. The majority of the sample (n = 292, 78.1%) was recruited from public (41.2%) and private (36.9%) schools in the greater New Orleans area of Louisiana and mid-sized and smaller cities throughout South Mississippi. Another 21.9% (n = 82) of the sample was obtained from archival data previously collected as part of another study conducted at a charter school in Houston, Texas.

Although almost all caregiver demographic information was provided for the Louisiana and Mississippi sample, a large portion of the caregiver demographic information was missing from the Houston sample [missing data ranged from n = 56 (68.3%) to 70 (85.4%), see Table 2]. As a result, the demographic data is reported separately for each group. For the Louisiana and Mississippi sample, this information revealed that caregivers were largely Caucasian and female (see Table 2 for detailed breakdown). In regards to highest level of education reported by the caregiver, 93.5% reported completing high school or beyond and 44.2% completed college and beyond.

Table 1

Child Demographic Information

| | Total Sample n (%) | Subsamples | |
		Houston Sample N (%)	Mississippi/ Louisiana Sample n (%)
Type of School			
Private	138 (36.9)	0 (0)	138 (47.3)
Public	154 (41.2)	0 (0)	154 (52.7)
Charter	82 (21.9)	82 (100)	0 (0)
Missing Data	0 (0)	0 (0)	0 (0)
Child's Gender			
Male	166 (44.4)	43 (52.4)	123 (42.1)
Female	208 (55.6)	39 (47.6)	169 (57.9)
Missing Data	0 (0)	0 (0)	0 (0)
Child's Age			
8	42 (11.2)	0 (0)	42 (14.4)
9	60 (16.0)	1 (1.2)	59 (20.2)
10	93 (24.9)	7 (8.5)	86 (29.5)
11	128 (34.2)	65 (79.3)	63 (21.6)
12	51 (13.6)	9 (11.0)	42 (14.4)
Missing Data	0 (0)	0 (0)	0 (0)
Child Race			
Caucasian	220 (58.8)	1 (1.2)	219 (75.0)
African American	61 (16.3)	0 (0)	61 (20.9)
Asian	3 (0.8)	0 (0)	3 (1.0)
Hispanic	82 (21.9)	81 (98.8)	1 (0.3)
Other	8 (2.1)	0 (0)	8 (2.7)
Missing Data	0 (0)	0 (0)	0 (0)

Note: Percentages reported for the total sample reflects the percent relative to the total sample, while percentages reported for subsample reflect the percent relative to the subsample.

In addition, SES was calculated using Hollingshead's (1975) four-factor solution of social position which takes into account caregiver report of education, occupation, sex, and marital status. Using this index, values ranged from eight to 66, with lower values indicating lower levels of SES. Information from the Mississippi and Louisiana sample produced a mean Hollingshead SES score of 41.94 (*SD* = 15.06), corresponding to

Table 2

Caregiver Demographic Information

	Total Sample n (%)	Subsamples	
		Houston	Mississippi/Louisiana
Caregiver's Gender			
Male	20 (5.3)	0 (0)	20 (6.8)
Female	279 (74.6)	12 (14.6)	267 (91.4)
Missing Data	75 (20.1)	70 (85.4)	5 (1.7)
Caregiver's Age			
M (SD)	38.39 (7.44)	35.11 (5.46)	38.61 (7.51)
Caregiver's Race			
Caucasian	225 (60.2)	0 (0)	225 (77.1)
African American	57 (15.2)	1 (1.2)	56 (19.2)
Asian	2 (0.5)	0 (0)	2 (0.7)
Hispanic	26 (7.0)	25 (30.5)	1 (0.3)
Other	5 (1.3)	0 (0)	5 (1.7)
Missing Data	59 (15.8)	56 (68.3)	3 (1.0)
Marital Status			
Married	196 (52.4)	0 (0)	196 (67.1)
Separated	7 (1.9)	0 (0)	7 (2.4)
Divorced	46 (12.3)	0 (0)	46 (15.8)
Widowed	3 (0.8)	0 (0)	3 (1.0)
Single – live with other	7 (1.9)	0 (0)	7 (2.4)
Single – live alone	30 (8.0)	0 (0)	30 (10.3)
Missing Data	85 (22.7)	85 (100)	0 (0)
Education			
Junior High School	3 (.8)	0 (0)	3 (1.0)
Some High School	16 (4.3)	0 (0)	16 (5.5)
High School Grad	40 (10.7)	0 (0)	40 (13.7)
Some College	66 (17.6)	0 (0)	66 (22.6)
Junior College Grad	36 (9.6)	0 (0)	36 (12.3)
Bachelor Degree	82 (21.9)	0 (0)	82 (28.1)
Professional Degree	46 (12.3)	0 (0)	46 (15.8)
Missing Data	85 (22.7)	85 (100)	3 (1.0)

Note: Percentages reported for the total sample reflects the percent relative to the total sample, while percentages reported for

subsample reflect the percent relative to the subsample.

medium business owners, minor professionals, and technical workers. Reported income

and level of education are slightly lower than the income and level of education for

Mississippi (U.S. Census, 2009). For the available portion of the Houston sample, caregivers were primarily Hispanic and female (see Table 2); however, it is not known if this is representative of the full sample. Yet, complete child demographic data reported all but one child from the Houston sample to be Hispanic; Caregiver marital status and education were not reported for this portion of the sample.

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

Demographic Form

A demographic form was administered in order to gather descriptive information on the child and the caretakers (Appendix C). The demographic form requested information including the teacher's name and child's grade; caregiver's gender, age, race, relationship to child, as well as educational background and occupation of the caregiver and their spouse, if applicable. It also asked for information regarding the child such as name, age, date of birth, gender, race, and teacher's name.

Measure Under Investigation

Child Routines Questionnaire Child Self-Report (CRQ-CSR; Binder, 2009*).* This measure is a 39-item questionnaire that is worded at a third grade reading level based on Flesch-Kincaid Readability Estimates (Appendix D). Thirty-six of the items comprise three domains: daily living routines, discipline routines, and household responsibilities. The other three items are validity items that do not factor into the subscales. The frequency of occurrence of these items was measured through the use of a five-point Likert scale ranging from 0 "*never*" to 4 "*nearly always.*" Researchers reported a coefficient alpha of .91 (ranging from .78-.85 by subscale), and a two-week temporal reliability of $r = .77$ (ranging from .55-.77 by subscale). Criterion-related validity was demonstrated through a positive correlation with a child routine checklist. Checklist items

were based on CRQ-CSR items that occurred on a daily basis. Furthermore, construct

validity was demonstrated through positive relationships with family routines and

through a parent-report measure of child routines (Binder, 2009).

Validation Measures

  Behavioral Assessment System for Children, Second Edition, Self-Report of

Personality (BASC-2-SRP; Reynolds & Kamphaus, 2004). This child self-report

instrument is a broadband measure of child behavior and emotional functioning. Two

forms of this measure will be used based on the child's age. The child self-report measure

is for children aged eight to 11 (SRP-C), while the adolescent version is for children aged

12 to 18 (SRP-A). The broadband measure consisting of 139 to 176 items has been factor

analyzed, revealing an Emotional Symptom Index, which includes all clinical and

adaptive scales into an overall composite score, four composite scales (School Problems,

Internalizing Problems, Inattention/Hyperactivity, and Personal Adjustment) and 14

subscales on the child report form and 16 subscales on the youth report form. Of the

subscales, four are adaptive subscales. The subscales include Atypicality, Locus of

Control, Social Stress, Attitude to School, Attitude to Teachers, Anxiety, Depression,

Sense of Inadequacy, Attention Problems, Hyperactivity, Interpersonal Relations,

Relations with Parents, Self-Esteem, and Self-Reliance. Unique to the adolescent version

is the inclusion of two additional content scales: Somatization and Sensation Seeking.

Additionally, the BASC-SRP child and adolescent form contain a small number of critical

items that assess for psychological symptoms including hallucinations and thoughts of

self-harm. Items are rated in a true/false format as well as on a four-point Likert scale

responding from 0 *never* to 3 *almost always*. This measure has consistently demonstrated

adequate reliability and validity coefficients and is often used in research. For the present

study, the Locus of Control, Atypicality, Social Stress, Depression, and Sense of

Inadequacy, subscales and the Personal Adjustment, Inattention/Hyperactivity, and

School Problems composites were used. Very good coefficient alphas have been reported

for the School Problems (0.85 child; 0.87 adolescent), Inattention/Hyperactivity (0.85

child; 0.84 adolescent), and Personal Adjustment (0.88, child; 0.90 adolescent)

Composites, as well as for the Locus of Control (0.76 child; 0.81 adolescent), Atypicality

(0.84, child; 0.83 adolescent), Social Stress (0.81, child; 0.85 adolescent), Depression

(0.84 child; 0.88 adolescent) and Sense of Inadequacy (0.78 child; 0.80 adolescent)

subscales. Support for validity for the BASC-SRP was demonstrated through

relationships with the subscales of the Youth Self-Report (YSR; Achenbach, 1991),

Behavior Rating Profile (BRP; Brown & Hamill, 1983) and Children's Personality

Questionnaire (CPQ; Porter & Cattell, 1975). Validity for the updated BASC-2-SRP was

also supported through relationships with the Children's Depression Inventory (CDI;

Kovacs, 2001), Revised Children's Manifest Anxiety Scale (RCMAS; Reynolds &

Richmond, 1978), and the original BASC-SRP. *T* scores were used from either the child

or adolescent form, depending on which was completed (child report, n = 90; adolescent

report, n = 14).

Behavioral Assessment System for Children, Second Edition, Parent Report Scale

(BASC-2-PRS; Reynolds & Kamphaus, 2004). This parent-report instrument is a

broadband measure of child behavior and emotional functioning. Two forms of this

measure will be used based on the child's age. The child parent-report measure is for

parents of children aged eight to 11 (PRS-C), while the adolescent version is for parents

of children aged 12 to 18 (PRS-A). The broadband measures consisting of 150 to 160

items have been factor analyzed revealing the same factor structure, which consists of

four composite scales (Externalizing Problems, Internalizing Problems, Behavioral

Symptoms Index, and Adaptive Skills) and 14 subscales (Hyperactivity, Aggression,

Conduct Problems, Anxiety, Depression, Somatization, Atypicality, Attention Problems,

Withdrawal, Social Skills, Leadership, Activity of Daily Living, Functional

Communication, and Adaptability). Items are rated on a four-point Likert scale

responding from 0 *never* to 3 *almost always.* This measure has consistently demonstrated

adequate reliability and validity coefficients and is often used in research. For the present

study, Externalizing and Internalizing composites were used. Very good coefficient alphas

have been reported for the Externalizing (.94 child ages 8-11; .94 adolescent ages 12-14)

and Internalizing Composites (.90 child ages 8-11; .90 adolescent ages 12-14). Support

for validity for the BASC-PRS was demonstrated through relationships with the ASEBA

Child Behavior Checklist and the Conners' Parent Rating Scales. Composite and subscale

T scores for the child and adolescent forms were used in the analyses (child form, n = 55;

adolescent form, n = 6). Although the sample size was too small to obtain a measure of

internal consistency with the adolescent form, Cronbach's alphas observed in the present

sample were consistent with previous studies (Externalizing Behaviors Composite, α =

.92; Internalizing Behaviors Composite, α = .91).

     Stability of Activities in the Family Environment-Child Form (SAFE-C; Ivanova

& Israel, 2006; previously known as the Stability of Activities in the Family Environment

– Revised Edition/SAFE-R). The SAFE-C is a 47-item, two-part child report measure

that can be administered as a questionnaire or as a structured interview that is used as a

clinical tool for assessment of family stability. Responses for items in the questionnaire

format are rated on both a five-point, ranging from 0, *not at all regular* to 4, *extremely*

regular. Data obtained from this measure includes information on mealtime, bedtime, and after school activities. The SAFE-C differs from related instruments in that it is a two-part child-informant measure that obtains the regularity of family routines and the child's affective responses to family events. Part-I consists of 24 items that assess how regularly the child participates in the activities, while Part-II consists of 23 items that assess how much the child likes or dislikes the activity. Items are summed to provide a total for each scale; however, for this study, only the 24 items from Part-I, the regularity scale, were summed to form a total regularity score. According to Ivanova and Israel (2006), this measure has been used as a self-report questionnaire and a structured interview with children as young as seven years of age and has demonstrated adequate reliability and support for factorial and construct validity for children and parents. The structured interview format using child informant provided good reliability estimates for temporal reliability and internal consistency, as demonstrated through a one week test-retest ($r = .82$) and Cronbach's alpha ($\alpha = .75$; Israel, Ivanova, & Roderick, 2006; $\alpha = .73$; Ivanova & Israel, 2006). Moreover, support for construct validity was demonstrated through an inverse relationship between child reported family stability and parent reported child behavior problems (Roderick, 2002). For the purpose of this study, the SAFE-C was used as a child self report questionnaire without an interviewer. Cronbach's alpha for the present sample was .74, which is consistent with a previous study (Ivanova & Israel, 2006).

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

The primary investigator (PI) obtained approval from The University of Southern Mississippi's Institutional Review Board (IRB). The PI sought approval from school

board superintendents and headmasters in districts and private schools in Southern Mississippi and New Orleans, Louisiana. Following school board approval, the primary investigator contacted the district schools, explained the goals and importance of the study, and requested principals' approval and assistance with the study. Participating public schools included nine schools in South Mississippi region. Private schools included one school in South Mississippi and six schools in the greater New Orleans area. The one charter school that participated was located in Houston, Texas.

Once school officials agreed to participate in the project, the primary investigator sent parental consents and a demographic form home with all children in third through seventh grades. Specifically, consent forms requested participation of the child and parent, along with demographic information of the child and caregiver. Consent forms also requested the contact information of the caregiver to complete the BASC-PRS over the phone; however, to facilitate ease of administration, half way through the study the consent form was updated to ask parents' preference for completing the BASC-PRS via phone or internet and provided a line for parents to provide an email address. Contact information was also requested so that the primary investigator could contact the caregiver if the child endorsed specific critical items from the BASC-SRP, including "I hear voices in my head that no one else can hear" and "Sometimes I want to hurt myself." Referral information was offered to 17 caregivers whose children endorsed these items. In addition, parents were provided contact information for the PI and encouraged to call or email with any questions about the study. Once the consent forms were returned, only children verified as being between the proper age range of eight to 12 years continued in the study. Once consent forms were returned, all participants were assigned a random number. This number was assigned to all protocols to identify each child.

The PI arranged a convenient time with the principal for data collection. From the consent forms that were returned, a large group of children in third through seventh grade were administered, in group format as arranged by the principal, an assent form and the CRQ-CSR. Schools were included in the study if they were willing to allow students to complete the CRQ-CSR, as the largest sample size was required for this measure. The project was initially introduced to school officials with the inclusion of all measures; however, many school officials were reluctant to agree because of time constraints. In these instances, the CRQ, demographic form, and parent report measure were always administered; however, if requested, the BASC-II-SRP and/or the SAFE-C were removed at the principal's discretion to decrease administration time. Of the 16 participating schools, six public schools agreed to participate in the SAFE-C portion of the study, two private schools agreed to participate in the BASC-2-SRP portion of the study, and three private schools allowed for both the SAFE-C and the BASC-2-SRP to be administered to their students. Specifically, 96 children completed the SAFE-C and 104 children completed the BASC-2-SRP, in addition to the child assent and CRQ-CSR (see Table 3 for demographic composition of these subsamples). Principals were also offered an alternative task for children not participating in the study. Although all principals declined this offer, the PI attempted to schedule administration during a non-instructional time (e.g., during PE or at the beginning or end of the day). However, administration was always conducted at a time requested by the principal.

As part of the consent form, caregivers agreed to the possibility of being selected to complete a caregiver report broadband measure of child behavior. Specifically, caregivers provided telephone numbers or email addresses, along with their preferred

method of contact on the consent forms. Caregivers (n=61) completed the behavior measure through a secure online website or over the telephone.

A subsample of 82 CRQ-CSRs were completed as part of a separate IRB-approved study through Baylor College of Medicine. In this study, children aged eight to 12 completed a series of questionnaires for a treatment outcome study on child obesity that were administered in a group format. These questionnaires were administered to all children in the school; however, data was discarded for children without caregiver consent. These children did not complete the SAFE-C, BASC-2-SRP, and their parents did not complete the BASC-2-PRS. Permission was granted by The University of Southern Mississippi's IRB for use of the archival data, which included use of any demographic data and completed CRQ-CSRs.

The Primary Investigator (P.I.) checked the database for missing items for each questionnaire. Missing items on the CRQ-CSR were replaced with the mean obtained from all responses across that item, which occurred in <1% of the responses. Questionnaires with more than four items missing were not included in the analyses. With this criterion, 374 CRQ-CPRs were included in the study, with one participant excluded due to missing data. The SAFE-C was considered incomplete if more than two items were missing for each measure. If there were less than two items missing from the SAFE-C, the missing values were replaced with the participants mean score on that measure. With this criterion, 96 SAFE-C's were completed and included in the study. The BASC-2 measures were scored on the official Pearson scoring program. For the BASC-2-SRP, 104 were included in the study and 61 BASC-2-PRSs were included in the study. Missing data procedures and replacement criteria are consistent with those employed in the development of the CRQ-CPR and the CRQ-CSR (Binder, 2009; Sytsma et al., 2001).

Participants from Mississippi and Louisiana (n = 286) were entered into a lottery. Two

participants were selected at random to receive two $50 gift certificates to a local

business. An additional 10 participants were drawn at random from the caregivers that

completed the BASC-PRS to receive ten $10 gift certificates to a local business.

Table 3

Validation Subsamples Demographic Information

	Validation Subsamples		
	Child Report Family Stability N (%)	Child Report Behavior n (%)	Parent Report Behavior n (%)
Type of School			
Private	65 (67.7)	104 (100)	45 (73.8)
Public	31 (32.3)	0 (0)	16 (26.2)
Charter	0 (0)	0 (0)	0 (0)
Child's Gender			
Male	34 (35.4)	34 (32.7)	30 (49.2)
Female	62 (64.6)	70 (67.3)	31 (50.8)
Child's Age			
8	12 (12.5)	9 (8.7)	13 (21.3)
9	28 (29.2)	19 (18.3)	11 (18.0)
10	18 (18.8)	39 (37.5)	24 (39.3)
11	22 (22.9)	23 (22.1)	8 (13.1)
12	16 (16.7)	14 (13.5)	5 (8.2)
Child Race			
Caucasian	87 (90.6)	94 (90.4)	37 (60.7)
African American	6 (6.3)	4 (3.8)	23 (37.7)
Asian	1 (1.0)	2 (1.9)	0 (0)
Hispanic	0 (0)	0 (0)	1 (1.6)
Other	2 (2.1)	4 (3.8)	0 (0)

CHAPTER III

RESULTS

Factorial Validity

Confirmatory Factor Analysis

   A confirmatory factor analysis (CFA) was conducted to determine if the three

factors (daily living routines, discipline routines, and household responsibilities) that

were obtained in the development study were maintained in the current sample. The CFA

model was tested using Mplus 6.11 (Muthén & Muthén, 2007). To assess fit of the

models, two fit indices were evaluated: the comparative fit index (CFI; Bentler, 1990),

and the root mean square error of approximation (RMSEA; Marsh, Balla, & Hau, 1996).

The CFI is an incremental fit index that compares fit of a model with a more restricted

model (Weston & Gore, 2006). CFI practical fit index values range from 0 to 1, with a

CFI value above .95 indicative of an excellent fit and above .90 as acceptable fit (Marsh

et al., 2009). The root mean square error of approximation is another fit index developed

by Steiger and Lind (1980) to provide information on how the model does *not* fit the

estimated population values. A RMSEA index value of .06 is a good fit, .08 is indicative

of a fair fit, and .10 is indicative of a marginal fit (Browne & Cudeck, 1993; Hu &

Bentler, 1999). Although chi square is commonly reported as a test of model fit, research

has suggested that this index is easily inflated with large sample sizes (Lawley, 1956).

Thus, for the present study, chi square was reported but emphasis was placed on other fit

indices to determine goodness of fit (Lawley, 1956).

   The specified CFA model consisted of 35 observed variables from the CRQ-CSR,

excluding the three validity items and one item (morning routine) that did not load > .3

on any of the three components in the development sample. The three-factor fit produced

the following results: χ^2 (557, N = 374) = 1266.517, $p < .001$; CFI = .876; and RMSEA = .058. Although the χ^2 does not indicate a good fit, it is important to consider the other fit indices, because χ^2 often produces a high number of false negatives with large sample sizes. The RMSEA from the three-factor model was less than .06, indicating an excellent fit. Although the results showed high inter-factor correlations, ranging from .735 to .833, the CFI of .876 was lower than expected. Item loadings from the PCA with Promax rotation that were produced during the measure development study found that five items cross-loaded (item loading > .3) onto more than one of the three components. Specifically, item 36 ("I do homework at the same time and place"), item 6 ("I eat meals with family in the same place daily"), item 39 ("I study for tests"), and item 35 ("I show mom/dad my school work") loaded onto the Daily Living and Discipline Routines subscales. Also, item 2 ("I know what will happen if I don't follow the rules") cross-loaded onto the Discipline and Household Responsibilities subscales. Thus, a model was tested using the three-factor structure and allowing these five items to load onto both factors where cross-loadings were observed in the measure development study. When these items were allowed to cross-load, the fit indices were as follows: χ^2 (552, N = 374) = 1203.16, $p < .001$; CFI = .886; and RMSEA = .056. Allowing the items to cross-load led to better fit statistics, but the CFI was still lower than what would be expected for an excellent fit.

The four-factor index from the 36-item parent report CRQ was also tested to determine if the factor structure from the child-report version aligned better with the parent report measure. It should be noted that the parent report factor structure was supported though exploratory and confirmatory factor analyses (Jordan, Arnau,

Stoppelbein, Greening, & Henderson, 2006; Sytsma et al., 2001). For this test, item 1

(morning routine) was included. The four-factor model produced the follow fit results: χ^2

(588, N = 374) = 1328.87, $p < .001$; CFI = .862; and RMSEA = .058. The RMSEA from

the four-factor model was below .06, indicating a good fit. Moreover, inter-factor

correlations were high, ranging from .70 to .85, indicating a strong relationship between

the latent variables within each factor. However, the CFI of .86 was lower than expected.

Previous confirmatory factor analysis of the parent report CRQ found that two items

cross-loaded onto multiple scales. Specifically, one item ("My child takes part in family

time each week when the family does planned activities together") loaded onto both the

Daily Living and Discipline Routines subscales, while another item on ("My child helps

put things away after shopping") loaded onto both Household and Daily Living Routines

subscales. When these items were allowed to cross load, the RMSEA remained at .058,

CFI remained at .862, and the inter-factor correlations remained high, ranging from .70 to

.84.

A one-factor index was also tested to determine if, with a child report measure, a

one-factor model would be a good fit. The one-factor fit indices found: χ^2 (560, N = 374)

= 1432.31, $p < .001$; CFI = .847; and RMSEA = .065. Again, the RMSEA indicates an

excellent fit but the CFI is less then what would be expected for an excellent fit.

Exploratory Factor Analysis

Since none of the one-, three-, and four-factor predicted models showed an

excellent fit, an exploratory factor analysis was conducted testing a range of one to five

factors to determine the best structure to fit the data. A robust Weighted Least Squares

Mean and Variance (WLSMV) with Promax rotation was used to evaluate the factor

structure. Moreover, an item that assessed morning routines, which was removed from the child report CRQ during the measure development study as a result of low item loadings, was added back in to determine if the low item loading was consistent with the current sample and to allow comparison with both of the previously obtained three- and four-factor structures. The fit statistics provided the most support for the five-factor structure (see Table 4); however, the items did not load in a meaningful way onto the scales in a five-factor model, and there did not appear to be a distinct theme for each subscale. Thus, the five-factor structure was not given further consideration. The EFA conducted with the 36-item measure revealed excellent fit for a three-factor model

Table 4

Exploratory Factor Analysis: Fit Index Scores

	χ^2 (N = 374)	RMSEA
1 Factor Model	(594) = 1495.398	.064
2 Factor Model	(463) = 1065.659	.059
3 Factor Model	(432) = 830.017	.050
4 Factor Model	(402) = 652.007	.041
5 Factor Model	(373) = 540.939	.035

(RMSEA = .049), with inter-factor correlations ranging from .483 to .511 (see Table 5). Those findings were then compared to previously obtained three- and four-factor structures to determine the best structure for scoring and use of the measure. The pattern matrix loadings indicated that the three-factor model was most similar conceptually to that obtained in the measure development study, with eight items changing primary loadings on principal components. However, in the measure development study two of the eight items that changed factors had cross-loaded on their

Table 5

Component Correlation Matrix for the 36-Item, 3-Factor Solution

Component	1	2
2	.511	
3	.483	.493

dominant factor and the factor that they loaded onto in the present study. Therefore, the

three-factor structure appears to be the best fit for the CRQ-CSR. Due to changes in item

loadings across subscales, the subscale names were modified to reflect the underlying

routine constructs by subscale. Specifically, the "Discipline Routine" subscale name

changed to "Discipline Routines and Expectations" and the "Daily Living Routines"

subscale name changed to "Daily Living and Family Routines." The Household

Responsibilities subscale name was not modified, because item content continued to

reflect household responsibilities. Table 6 represents a comparison of current and

previous primary factor loadings for the three-factor solution.

Overall, the "Daily Living and Family Routines" factor consisted of 11 items

including routine activities that involve positive family interaction and daily child

routines. Items on this component included routines related to typical family interactions

such as talking with parent, parent's praising good behavior, and deciding family

activities. A second component, "Discipline Routines and Expectations," emerged and

consisted of 15 items measuring household rules, discipline, and consequences. For

example, items on this component included routines related to doing the same thing each

night, differing levels of discipline, doing homework before play, and cleaning up after

snack. In the current study, six items changed from the Daily Living and Family Routines

factor to the Discipline Routines and Expectations factor. One of the items that changed

Table 6

Promax Rotated Loadings for the 36-item, 3-Factor Solution

	Discipline Routines and Expectations	Household Responsibilities	Daily Living and Family Routines	Item-Total Correlations
2. discipline knows what happens	**.514**	.178	-.144	.378
25. gets in trouble when bad	**.762**	.068	-.171	.428
27. consistent consequences	**.722**	-.058	-.121	.364
29. breakfast on time/place*	**.312**	-.040	.229	.365
6. meals with family*	**.365**	-.010	.202	.391
11. bedtime routine*	**.638**	-.037	.209	.554
13. wake up on time	**.463**	-.028	.188	.447
14. finish chores before play	**.429**	.250	.045	.456
21. bedtime	**.392**	-.046	.265	.445
16. dinner same time*	**.446**	-.086	**.355**	.535
17. PM brush teeth*	**.448**	**.319**	-.108	.422
1. morning routines	*.485*	*.339*	*-.079*	*.424*
38. complete homework	**.402**	**.375**	.055	.502
7. hug/kiss parent before bed*	**.479**	-.223	**.398**	.463
12. household rules	**.236**	.231	.222	.491
19. wash hands before meals	.046	**.695**	-.100	.446
24. wash hands after toilet	.298	**.598**	-.233	.401
28. pick up toys	-.152	**.650**	.200	.489
22. clean up after meals	-.073	**.551**	.223	.489
8. clean up after snack	.063	**.625**	.122	.554
18. pick up clothes	.016	**.648**	.066	.495
4. chores	.071	**.431**	.046	.374
5. straighten room	-.088	**.492**	.275	.480

Table 6 (continued)

31. help put away after store	.112	**.292**	.255	.476
23. limits on fun*	-.038	**.275**	.189	.292
32. praise good behavior	-.090	-.062	**.671**	.394
33. prayers before meals*	.037	.071	**.359**	.356
34. fun with family	-.065	-.004	**.724**	.495
35. show parent school work	.061	.125	**.528**	.488
3. talk with family	-.030	.082	**.542**	.437
26. decide family activities	-.069	.111	**.580**	.462
15. rewards	-.063	.031	**.532**	.382
37. homework supervision	.089	-.055	**.567**	.429
9. talk with parent	-.044	.101	**.582**	.479
36. homework on time/place	**.327**	-.016	**.348**	.467
39. study for tests	**.163**	.273	**.297**	.525

Note: **Bold** items represent factors that items load on in current study; <u>Underlined</u> items represent the factors that the items loaded onto in the measure development study; Items 1 and 33 demonstrated item loadings <.3 in the measure development study; Italicized item (1) indicated that it was removed from the measure during the measure development study; * represents items that switched scales between measure development study and current study.

to the Discipline Routines and Expectations factor, "I eat meals with my family in the same place daily," had cross-loaded on the Discipline Routines and Expectations and Daily Living and Family Routines factors in both the measure development study and the current study, and another item that changed to the Discipline Routines and Expectations factor, "I hug/kiss mom/dad each night before bed," also cross-loaded the factor that it loaded onto in the measure development study, the Daily Living and Family Routines factor. Additionally, one item from the Discipline Routines and Expectations factor, "I show my mom/dad my school work" cross-loaded on the Discipline Routines and Expectations and Daily Living and Family Routines factors in the measure development

study; however, this item had a higher item-loading on the Discipline Routines and Expectations subscale than the Daily Living and Family Routines subscale in the current study. Additionally, the "I do the same things every morning, like get dressed and brush my teeth" item that was deleted in the measure development study demonstrated a high item-total correlation and loaded high onto the Daily Living factor in the current study. As a result, it was added back to the measure. The final component, "Household Responsibilities," included 10 items regarding helping out around the house. Items on this component include routines related to cleaning up after snack, straightening up their room, picking up clothes, and helping put things away from the store. The Household Responsibilities subscale consisted of all of the same items from the measure development study, with the exception of one item, "I can only do fun things, like watch TV, for a short time each day" which changed from the Discipline Routines and Expectations factor to the Household Responsibilities factor.

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

To help determine the most appropriate factor structure, reliability estimates were examined for both the new three-factor structure (consisting of 36 items; including item one, "morning routines") and for the old three-factor structure obtained in the measure development study (consisting of 35 items; without item one, "morning routines"). Data from the present study sample were used to compare reliability for the two factor structures and values are reported in Table 7. Results from the original measure development study are reproduced in Table 7, as well, for comparison. First, internal consistency was examined for the CRQ-CSR total scale. Using all 36 items, coefficient alpha was .908, inter-item correlations ranged from .011 to .550, and corrected item-total correlations ranged from .292 to .554 for the total scale. When using only 35 items

Table 7

Reliability Estimates Across Current and Development Samples and Factor Structures

	Coefficient Alpha	Item-Total Correlation Range
Total Scale		
Current Sample and Factor Structure	.908	.292 - .554
Current Sample, MD Factor Structure	.906	.295 - .554
MD Sample and Structure	.907	.288 - .591
Subscale 1: Daily Living and Family Routines		
Current Sample and Factor Structure	.808	.359 - .572
Current Sample, MD Factor Structure	.831	.324-.553
MD Sample and Structure	.852	.371-.615
Subscale 2: Discipline Routines and Expectations		
Current Sample and Factor Structure	.833	.368 -.592
Current Sample, MD Factor Structure	.737	.209 - .510
MD Sample and Structure	.794	.386 -.582
Subscale 3: Household Responsibilities		
Current Sample and Factor Structure	.779	.298 - .573
Current Sample, MD Factor Structure	.787	.255 - .566
MD Sample and Structure	.777	.312 - .593

Note: MD = Measure Development; Current Sample and Factor Structure = values obtained from the current study using the 36 items and 3 factor structure that emerged in the current sample; Current Sample, MD Factor Structure = values obtained from the current study sample, using the 35-item, 3-factor structure obtained during the measure development study; MD Sample and Structure = exact values obtained from measure development study (Binder, 2009) with the measure development sample and 35-item, 3-factor structure.

(without item one, "morning routines") as in the measure development study, the

coefficient alpha was comparable at .906, and the inter-item correlations ranged from

.011 to .551, and corrected item-total correlations ranged from .295 to .554. Although

one item, "My parents place limits on fun activities" demonstrated a slightly lower than

expected corrected item-total correlation, $r = .292$ with the 36-item scale and $r = .295$

with the 35-item scale, the total alpha level would not change if the item were deleted.

Overall, these results suggest excellent internal consistency for the CRQ-CSR for both

item sets and results with both the 36- and 35-item scales are comparable to those obtained during the measure development study (see Table 7).

Next, internal consistency was examined by subscale for both new and old three-factor structures using the current study data (see Table 7). The Daily Living and Family Routines subscale coefficient alpha was good with both the old and new factor structure, with a slightly higher coefficient obtained using the old factor structure, while the item-total correlations were slightly higher using the current factor structure. Nonetheless, for the Daily Living and Family Routines subscale, both the coefficient alpha and the item-total correlations obtained for the measure development study were slightly higher than the values obtained with data from the current study (see Table 7). For the Discipline Routines and Expectations subscale, coefficient alpha was good using the current factor structure and sample and was slightly higher than that obtained using either measure development structure in the current study or during the measure development study. The item-total correlations using items from the current study were comparable to those obtained during the measure development study and better than those obtained when using the current sample with the measure development factor structure. Finally, for the Household Responsibilities subscale, an acceptable coefficient alpha was obtained across methods which were all of comparable magnitude. Item total correlations for the current factor structure were comparable to those obtained with the current sample and measure development factor structure, but slightly lower than the original measure development study values. Overall, the current three-factor solution reflected comparable reliability coefficients for the Daily Living and Family Routines subscale, Household Routine subscale, and CRQ-CSR Total Score when compared to the factor structure obtained in the measure development study. The Discipline Routines and Expectations subscale was

the exception, revealing slightly higher reliability coefficients with the current factor structure relative to the measure development structure.

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

Construct Validity

Convergent validity was examined by evaluating bivariate correlations between child and parent report of child routines as measured by the CRQ-CSR subscale and total scale scores (based on the current factor structure using all 36 items as well as the old factor structure using 35 items from the present sample) and related constructs. The subscale and total scale validity coefficients were used to examine the relationship between child routines and expected constructs and to further evaluate the factor structure. Many of the expected relationships between child routines and related constructs were nonsignificant in the CRQ-CSR development study. One hypothesized reason for the nonsignificant relationships was because of poor inter-rater reliability between parent and child report, introducing cross-informant variance. Specifically, in the development study, child report of routines was compared solely to parent report of child behaviors and family routines. To address this limitation, a child self-report of related constructs was added in this study to further evaluate construct validity. Therefore, bivariate correlations were examined between child self report of routines (CRQ-CSR) and child-self report of family stability (SAFE-C) and behavior (BASC-2-SRP). To rule out the possibility that the non-significant relationships between child routines and child behavior were idiosyncratic to the development sample, parent report of child behavior was also obtained to re-examine the relationship between child report of routines and parent report of child behaviors. Since previous research found a positive relationship between parent report of child routines and child externalizing behavior problems

(Sytsma et al., 2001) and a lower than expected relationship between parent report of child routines and internalizing behavior problems (Jordan, 2003), the relationship between child routines, as rated by the child, and child behaviors, as rated by the parent, were also reexamined with this sample.

First, bivariate correlations were examined between the current three subscales and 36-item total scale of the CRQ-CSR and SAFE-C (Table 8). Bivariate correlations revealed a robust, significant relationship between the CRQ total score and the SAFE-C total score, r (96) = .693, $p < .001$. Significant relationships were also observed between the SAFE-R total score and the CRQ-CSR subscale scores, ranging from .511 and .713. Validity estimates using the factor structure from the measure development study with the current sample ranged from .520 to .700. The magnitude of the validity coefficients was comparable using both the current factor structure or the old factor structure with the present sample (see Table 8).

Table 8

Bivariate Correlations between the CRQ-CSR (total and subscale scores) and SAFE-C

	CRQ-CSR: Discipline Routines and Expectations	CRQ-CSR: Daily Living and Family Routines	CRQ-CSR: Household Responsibilities	CRQ-CSR: Total Score
SAFE-C (frequency)	.515*** *.520***	.713*** *.700***	.511*** *.548***	.693*** *.696***

Note: *$p < .05$; **$p < .01$; ***$p < .001$; *Italics* indicate analysis using factor structure from measure development study in the present sample.

Second, bivariate correlations were examined between the CRQ-CSR total score and the child report of child behaviors, as measured by the BASC-2-SRP, to examine convergent and divergent validity (Table 9). As expected, the self-report CRQ total scale

was positively related to the Personal Adjustment composite r (104) = .395, $p < .001$.

Additionally, as predicted, negative relationships emerged between the CRQ-CSR total

score and the Social Stress, r (104) = -.206, $p = .036$, Sense of Inadequacy, r (104) =

Table 9

Bivariate Correlations between the CRQ-CSR and BASC-2-SRP/BASC-2-PRS

Child Behavior Scales	Daily Living and Family Routines	Discipline Routines and Expectations	Household Responsibilities	CRQ-CSR Total Score
BASC-2-SRP:				
Personal Adjustment Composite	.391***	.294**	.315**	.395***
	*.370** *	*.328** *	*.310** *	*.393*** *
Locus of Control scale	-.317**	-.178	-.222*	-.283**
	*-.286** *	*-.201* *	*-.226* *	*-.284** *
Inattention/Hyperactivity scale	-.198*	-.084	-.161	-.173
	*-.120 *	*-.173 *	*-.173 *	*-.172 *
Social Stress scale	-.249*	-.150	-.118	-.206*
	-.201 *	*-.235* *	*-.093 *	*-.203* *
Sense of Inadequacy scale	-.324**	-.145	-.119	-.235*
	*-.259** *	*-.182 *	*-.135 *	*-.233* *
Depression scale	-.314**	-.153	-.247*	-.279**
	*-.262** *	*-.216* *	*-.239* *	*-.280** *
School Problems Composite	-.338**	-.361***	-.341**	-.410***
	*-.355** *	*-.344** *	*-.357** *	*-.406** *
Atypicality scale	-.157	-.179	-.155	-.194*
	*-.119 *	*-.279** *	*-.146 *	*-.192 *
BASC-2-PRS				
Externalizing Behaviors Composite	.040	.030	.209	.096
	*.031 *	*.052 *	*.195 *	*.092 *
Internalizing Behaviors Composite	.132	.343**	.279*	.293*
	.258 *	*.243 *	*.292* *	*.289* *

Note: *$p < .05$; **$p < .01$, *** $p < .001$; *Italicized* values represent correlations between measure development factors with current

sample and child behaviors

-.235, $p = .016$, Locus of Control, $r(104) = -.283$, $p = .004$, and Depression subscales, $r(104) = -.279$, $p = .004$. However, the predicted negative relationship between the CRQ-CSR total score and the Inattention/Hyperactivity composite was not significant. Yet, a significant inverse relation was observed for the Daily Living and Family Routines subscale, $r(104) = -.198$, $p = .044$. . Furthermore, while the predicted nonsignificant relationship between the CRQ-CSR total scale and the Atypicality subscale held up for the subscales with this sample it was significantly related to the CRQ-CSR total scale, $r(104) = -.194$, $p = .048$. Finally, a fairly robust negative relationship was revealed between the CRQ-CSR total score and the School Problems Composite, $r(104) = -.410$, $p < .001$. As shown in Table 9, the relationships between child and parent report of child behaviors and the measure development CRQ-CSR total score (35-items) and scores from the subscales derived during the measure development study were quite comparable to the relationships that emerged using the factor structure from the current study. Overall, these findings provide mixed support for the predicted relationships.

Third, bivariate relationships were reexamined with parent-report of child behaviors. Specifically, bivariate correlations were examined between the CRQ-CSR total score and parent report of externalizing and internalizing behaviors, as measured by the BASC-2-PRS. Contrary to the expected findings, the relationship between the CRQ-CSR total score or subscale scores and the BASC-2-PRS Externalizing Behaviors Composite was not significant. Furthermore, the significant relationship between the CRQ-CSR total score and the BASC-2-PRS Internalizing Behaviors Composite, $r(61) = .293$, $p = .02$, was opposite of the predicted direction. Further analysis also revealed significant relationships between the BASC-2-PRS Internalizing Behavior Problems Composite and the CRQ-CSR Discipline Routines and Expectations, $r(61) = .343$, $p = $

.007, and the CRQ-CSR Household Responsibilities subscales, r (61) = .279, p = .03, but

not the CRQ-CSR Daily Living and Family Routines subscale, r (61) = .132, p = .312.

Preliminary Demographic Analyses

Based on the evaluation of the factor structure and comparison of reliability and

validity coefficients using old and new factors structures, the current three-factor

obtained with the present sample appeared to be the best factor structure. Using the 36-

item pool and three-factor structure from the current study, correlations were conducted

between the CRQ-CSR and child demographic variables, including age and gender, to

determine if any demographic factors may be related to child routines. These findings are

reported without any correction for alpha inflation due to their exploratory nature; thus,

significant findings of modest magnitude should be interpreted with caution. Results

revealed that child gender was positively related to total routines, r (374) = .155, p = .003

(see Table 10), indicating that females had more routines then males. Significant

relationships were revealed across all subscales all. No significant relationship was

observed between total routines and child age, r (374) = .061, p = .242. However, further

subscale analyses revealed a modest positive relationship between child age and the

Household Responsibilities subscale, r (374) = .121, p < .020, suggesting that older

children may have more frequent household responsibilities.

Correlations were also conducted between parent demographic variables,

including age, marital status, which was dichotomized into single parenting and co-

parenting, and Hollingshead SES to determine if any demographic factors may be related

to child routines. The relationship between parent age and CRQ-CSR subtest scores

indicated that parent age demonstrated the strongest relationship with Household

Responsibilities subscale, r (305) = -.271, p < .001, but was also significantly related to

Table 10

Bivariate Correlations between CRQ-CSR and Demographic Variables

(n = 374)	Daily Living and Family Routines	Discipline Routines and Expectations	Household Responsibilities	Total Routines
Child Age	-.053	.091	.121*	.061
Child Gender[a]	.120*	.159**	.111*	.155**
Parent Age	-.126*	-.070	-.271**	-.170**
Marital Status[b]	-.038	-.204**	-.028	-.118*
Hollingshead SES	.024	.115	-.040	.048
Recruitment Method/Location[c]	-.077	-.017	.149**	.012

Note: *p < .05; **p < .01; ***p < .001; [a]Child Gender was dichotomized, 0 = Male, 1 = Female, [b]Marital Status was dichotomized, 0 = coparenting and 1 = single parenting; [c]Recruitment Method/Location was dichotomized, 0 = Mississippi/Louisiana sample and 1 = Houston sample.

the Daily Living and Family Routines subscale, r (305) = -.126, p = .028. Moreover, a bivariate correlation revealed a significant relationship between marital status and the Discipline Routines and Expectations, r (289) = -.204, p < .001, subscale. Although the relationship between child routines and Hollingshead SES was not significant, results revealed that both parent age, r (305) = -.170, p = .003, and marital status (0 = coparenting households and 1 = single parenting households), r (289) = -.118, p = .045, were significantly related to the CRQ-CSR Total score. Overall, these findings indicate that children with younger parents and cohabiting parents reported more routines than children with older parents or children that live in single parenting households.

Difference analyses were also conducted to see if there were group differences between scores on the total and subscales scores of the CRQ-CSR on child race, type of school that the child attended (i.e., charter, public, or private), or recruitment

method/location (i.e., Mississippi/Louisiana sample or Houston sample). Race was minimized from five to four groups and children identified as Asian (n = 3) were combined with children who identified as Other (n = 8). When evaluating racial differences in routines, the Levene's Test, which assesses homogeneity of variance, was significant on the Daily Living and Family Routines subscale, Discipline Routines and Expectations subscale, and the CRQ-CSR Total score. A one-way between subjects ANOVA was then conducted to compare the effect of race on the CRQ-CSR Household Responsibilities subscale scores. The Welch statistic was used to examine the effect of race on the Daily Living and Family Routines subscale score, the Discipline Routines and Expectations subscale score, and the CRQ-CSR Total score due to the significant Levene's Test. The effect of race on the CRQ-CSR Total score was not significant; however, results revealed a significant effect of race on subscale scores of the CRQ-CSR. Specifically, results revealed a significant effect of race on CRQ-CSR Discipline Routines and Expectations subscale score, Welch F (3, 42.991) = 5.538, p = .003 and Household Responsibilities subscale score, F (3, 370) = 3.480, p = .016. Post-hoc analyses were conducted using the Scheffe post hoc criterion due to unequal sample sizes between groups. Scheffe's post hoc analysis revealed that African Americans (M = 41.12, SD = 11.84) had significantly fewer Discipline Routines and Expectations then Caucasian (M = 47.71, SD = 9.06) and Hispanic (M = 45.96, SD = 8.76) children. Caucasian children (M = 26.56, SD = 7.05) reported significantly fewer Household Responsibilities than Hispanic children (M = 29.53, SD = 7.01).

Difference analyses were also conducted to determine if type of school (i.e., public, private, or charter) had an effect on amount of routines. Specifically, the Levene's Test was significant for the CRQ-CSR Total score and Discipline Routines and

Expectations subscale scores. A one-way between subjects ANOVA was also conducted to compare the effect of type of school on the Daily Living and Family Routines and Household Responsibilities subscale score. The Welch statistic indicated that the effect of type of school on CRQ-CSR total score was not significant; however, results revealed a significant effect of type of school on Discipline Routines and Expectations, Welch (2, 2.13) = 3.494 p = .032, and Household Responsibilities, F (2, 371) = 7.728, p =.001. Scheffe's post-hoc analysis indicated that children in private schools (M = 47.88, SD = 7.91) had significantly greater Discipline Routines and Expectations then children in public (M = 45.00, SD = 11.55) and that children in private schools (M = 25.73, SD = 6.93) had significantly less Household Responsibilities then children in public (M = 27.93, SD = 7.44) and charter (M = 29.51, SD = 7.02) schools.

A bivariate correlation was also conducted to determine if recruitment method/location (i.e., recruiting solely for the present study vs. as part of a larger study had a significant effect on the CRQ-CSR total and subscale scores. Specifically, the Mississippi and Louisiana samples were combined and compared to Houston sample, based on differences in recruitment and administration procedures for the two groups. There was not a significant correlation between recruitment method/location and total routines reported on the CRQ-CSR total score; however, results revealed a significant relationship between recruitment method/location and CRQ-CSR Household Responsibilities subscale, r (374) = .149, p < .01, indicating that the Houston sample reported significantly more Household Responsibilities than the Mississippi/Louisiana sample. It is important to note that these findings are exploratory in nature and should be interpreted with caution given the confound of race, school type, and recruitment method/location, with the vast majority of the Houston sample identifying as Hispanic

and being recruited from a charter school, and of most African American children being recruited from public schools.

CHAPTER IV

DISCUSSION

In recent years, researchers have developed standardized instruments on routines for both families and children to increase the empirical study and understanding of the impact that routines have on child development. The CRQ-CPR was developed initially as a parent report measure specific to daily routines of school aged children (Sytsma et al., 2001). Several parent report questionnaires were created to expand the measure of child routines for children ranging from preschool age through adolescence (Meyer, 2008; Sytsma et al., 2001; Wittig, 2005). Self-report forms were also developed for the CRQ and ARQ (Binder, 2009; Meyer, 2008). Previous exploratory factor analysis revealed a three-factor structure (which differed from the four-factor structure observed with the parent report form) and provided good estimates of reliability; however, the validity estimates of the CRQ-CSR found in the measure development study were somewhat lower than expected. Weaker than expected validity coefficients may have resulted from cross-informant variance introduced by exclusive use of parent report measures to validate the child self report form. Therefore, this study sought to confirm the three-factor structure that was revealed in the measure development study and to further evaluate the validity of the CRQ-CSR with self report data.

The hypotheses for this study were based on the CRQ-CSR measure development study (Binder, 2009) and previous studies on the relationships between child behavior and child routines (Bridley & Jordan, 2012; Jordan, 2003; Sytsma et al., 2001). A CFA was conducted to determine if the three-factor structure, including the Daily Living and Family Routines, Discipline Routines and Expectations, and Household Responsibilities subscales would be supported in a new sample. The three-factor structure from the

measure development study was also compared to the four-factor structure from the parent-report measure and a new exploratory factor analysis to determine which factor structure was the best fit using the current sample. It was also hypothesized that the CRQ-CSR would be positively related to child report of family stability and child report of personal adjustment, negatively related to child report of inattention/hyperactivity, social stress, sense of inadequacy, external locus of control, and depression and parent report of internalizing and externalizing behaviors, and not significantly related to self-report of school problems and atypicality.

With respect to the first hypothesis, results from the CFA failed to fully support the three-factor solution from the child self report development study or the four-factor solution from the parent report measure. Since fit statistics were mixed, an EFA was conducted to determine the CRQ factor structure using a new sample. A Weighted Least Squares Mean and Variance (WLSMV) of the CRQ-CSR still indicated three distinct components: Daily Living and Family Routines, Discipline Routines and Expectations, and Household Responsibilities. Although these items clustered in meaningful ways and the factor structure was similar to what was observed with the CRQ-CSR measure development study (Binder, 2009), eight of the items switched factors from the measure development study to the current study. It appears that there is the strongest relationship was between the Daily Living and Family Routines and Discipline Routines and Expectations factors. Specifically, six items switched from the Daily Living and Family Routines factor to the Discipline Routines and Expectations factor; however, two of the six items cross loaded onto both the Daily Living and Family Routines and Discipline Routines and Expectations factors in the measure development study. Moreover, one item that cross loaded onto the Household and Discipline Routines and Expectations factors

during the measure development study loaded onto the Daily Living and Family Routines factor in the current study. These items could have cross loaded because they were perceived in multiple ways, such as mandatory activities or activities completed independently on a daily basis. To clarify, one item probed for brushing teeth before bed. Some children may partake in this activity as they get ready for bed in an independent fashion, while other children may be told nightly by their parents that they need to brush their teeth as a rule. This same issue could have come into play with most of the other items that assessed activities like eating dinner at the same time and place, bedtime routines, and eating dinner with family.

The Household Responsibilities measure consisted of almost all of the same items that composed the factor during the measure development study. The only change was one item changed from the Discipline Routines and Expectations factor to the Household Responsibilities factor. This item questioned whether parents placed limits on the child's amount of fun each day. Many children have to complete household activities (e.g., chores, homework) before they can do fun things; therefore, limits on fun can be perceived as being related to household responsibilities for children.

Finally, one item that was removed from the measure during the development study due to low item-total correlations (<.30) and low factor loadings (just missing the cutoff, loading .281 on Household Responsibilities and .224 on Discipline Routines and Expectations) was re-examined for exploratory purposes during this study. This item that assessed "morning routines" was found to cross load onto the Discipline Routines and Expectations and Household Responsibilities scales in the current study. It was added back onto the measure, loading on the Discipline Routines and Expectations factor,

because it was the best theoretical fit and demonstrated impressive factor loading and item-total correlation during this study.

Overall, although the current EFA supported a three-factor solution, several of the items loaded onto different factors then observed in the measure development study. The range of item loadings by factor were similar to those obtained during the measure development study. Although there were some item loadings that were slightly lower than that obtained during the measure development study, an item with a low item loading was deleted during the measure development study and thus, was not reflected in the item total ranges presented in the results. Moreover, these coefficients were not necessarily expected to improve, as new samples often yield less robust findings than development samples, particularly if they differ on characteristics that might affect the factor structure (Floyd & Widaman, 1995). The present findings appear to be more realistic and stable estimates. Not only was the sample size sufficiently larger then that obtained during the measure development study but there was a more ethnically heterogeneous sample of children compared to the participants from the measure development study. Moreover, there was a better representation of children across the full age range during this study. Specifically, a limitation of the measure development study was that few 12-year-olds participated.

The reliability of the CRQ-CSR was excellent in this study. The coefficient alpha in the current study and the measure development study were almost identical and the total scale item-total correlations were above .3 on all items except for one. However, this item was retained because it demonstrated a high item-total correlation with the measure development study and the total scale coefficient alpha would not have improved with deletion of the item. Coefficient alphas by factor did not change in a consistent pattern

and item-total correlations by factor also looked similar to the measure development study. Overall, reliability estimates in the current study were closely related to those obtained during the measure development study (Binder, 2009).

Validity estimates were obtained through correlations with a self-report measure of stability in the home environment and a self and parent-report outcome measure of child behaviors that were administered concurrently with the CRQ-CSR. Support for convergent validity was indicated through significant positive relationships between self-report of child routines (CRQ-CSR) and self-report of stability in the home environment (SAFE-R), self-report of personal adjustment (BASC-2-SRP), and parent-report of internalizing behaviors (BASC-2-PRS). Additional support for convergent validity was provided through significant negative relationships between self-report of child routines and self-report of social stress, sense of inadequacy, external locus of control, and depression, as measured by the BASC-2-SRP. It is important to note that parents were administered the BASC-2-PRS either over the phone or online with a delay of up to three months following administration of the child report measures.

Moreover, no relationship was found between child reported routines and child reported inattention/hyperactivity or child routines and parent-report externalizing behavior problems. The nonsignificant relationship between child reported routines and inattention/hyperactivity was unexpected given prior report of a moderate, negative relation between the parent report CRQ and parent report of child Hyperactivity and Attention Problems on the BASC (Jordan, 2003). The non-significant relationship between child routines and inattention/hyperactivity observed in the present study could have a few explanations. First, researchers have found that children are poor self reporters of externalizing behavior problems (Reynolds & Kamphaus, 2004; Frick, Barry,

& Kamphaus, 2010). Therefore, children may be less aware of their own hyperactive or inattentive behavior, such as constantly moving or fidgeting, relative to their awareness of routines and daily activities. A second explanation for this finding is that parents may find it more difficult to put routines in place when children have problems with inattention and hyperactivity. A child who has difficulty focusing on instruction and staying on task may experience more difficulty establishing routines. Also, researchers have found that children of parents with ADHD are also symptomatic 20 to 25% of the time (Biederman et al., 1992; Morrison & Stewart, 1971). Given the strong heritability of ADHD, this difficulty could be particularly problematic when parents themselves may face similar challenges (Biederman & Faraone, 2002).

The latter absence of a significant relationship between self-report of child routines and parent-report of externalizing behavior problems was somewhat less surprising. Although a significant inverse relationship between child routines and child behavior problems was reported in preliminary studies of child routines (Jordan, 2003; Sytsma et al., 2001; Wittig, 2005), recent studies, including the measure development study of the CRQ-CSR, have not found supporting evidence for this relationship (Binder, 2009; Henderson & Jordan, 2010). Low inter-rater agreement has been consistently observed between parents and children on the same behavior (Achenbach, McConaughy, & Howell, 1987; Reynolds & Kamphaus, 2004) and this discrepancy increases with age (Frick et al., 2010). Therefore, it could be expected that poor agreement would impact the current study as well, failing to support the predicted relationship between child routines and child behavior problems in the current study.

Moreover, the significant relationship between child reported routines and parent reported internalizing behavior problems was opposite of the predicted direction. As

stated earlier, research has found mixed results on the effect of parent child agreement on child behavior problems (Achenbach et al., 1987; Duhig, Renk, Epstein, & Phares, 2000). Multiple studies have found even lower inter-rater agreement between youth and parent's on internalizing behavior scales (Berg-Nielsen, Vika, & Dahl, 2003; Salbach-Andrae, Klinkowski, Lenz, & Lehmkuhl, 2009; Seiffge-Krenke & Kollmar, 1998). Therefore, poor inter-rater agreement may also explain these findings.

In addition, the nonsignificant findings between parent report of child behavior and child report of routines could be the result of error produced by the method of data collection. Specifically, there was up to a three-month time delay between obtaining child report data and parent report data. Additionally, parent report was obtained using two different methods of data collection (e.g., over phone or computer report), which likely introduced more error into the results.

Finally, the predicted non-significant relationships between self-report of child routines and self-report of School Problems and Atypicality were not supported. Rather, both School Problems and Atypicality were found to be negatively related to child routines. It is important to note that, given the limited literature base, these predictions were, rationally rather than empirically, based. Given further consideration, it is plausible that child routines would be negatively related to school problems, because most school classrooms are highly structured environments. Children follow routine schedules in school weekly, if not daily. Therefore, it is conceivable that children who have more routines in the home environment would make an easier transition to the structure of the school environment. The negative relationship between child routines and Atypicality also has potential logical explanations. Items on the Atypicality scale assess unusual cognitive and perceptual experiences (i.e., hearing things others don't hear, seeing weird

things, feel like someone is watching them). This scale is usually elevated in children who present with a large range of clinical problems, including ADHD, Autism, and thought disorders (Nicpon, Doobay, & Assouline, 2010). Clinically, children with these problems have reported significantly fewer routines. Moreover, previous research suggests that individuals with thought disorders have poor insight to behaviors and are unreliable reporters (Harrow & Miller, 1980). This finding could provide evidence to suggest that routines could be a beneficial intervention for children with these problems. These symptoms may also be reflective of more significant thought disorders. Thus, children with these experiences may be less amenable to routines, because they see the world differently than most children.

Overall, the results provided stronger support for the construct validity of the CRQ-CSR than the development study. The non-significant relationships between child routines and child behaviors are likely not an indication of poor construct validity, but, more likely, highlight the lack of research on the relationship between child routines and child behavior and methodological limitations of the current study. These findings bring to light the need for increased research in the field of child routines so that clinicians, parents, and teachers can better understand the relationship between child routines and behavior. In addition, although validity coefficients were similar across the measure development factor structure and the factor structure obtained in the current study, there was some variability observed in the relationships between child behavior problems and the Discipline Routines and Expectations subscale. The Discipline Routines and Expectations subscale also had the most items that changed factors in the current study. The differences in significant relationships could indicate that the subscales are more

discriminate in the current factor structure, thus providing additional support for use of the factor structure obtained during the current study.

In examining the relationship between child routines and child demographic variables, significant relationships emerged between child sex and CRQ-CSR factors scores. Additionally, positive relationships between routines and child sex were found on all subscales and the total scale of the CRQ, indicating that females generally reported more routines than males. This difference was not found on the measure development study or in the psychometric studies for development of the parent-report CRQ. However, this finding should be further investigated in future studies to determine if females actually have more frequent routines than males or if they merely perceive themselves to have more routines. If so, it may be appropriate to create gender norms for the CRQ-CSR.

Child demographic differences were also observed across several of the CRQ-CSR subscales. Specifically, significant differences were found between demographic variables on the Discipline Routines and Expectations and Household Responsibilities subscales. On the Discipline Routines and Expectations subscale, African American children reported significantly less routines than Hispanic or Caucasian children. Also, children in public schools reported significantly less routines than children in private schools. Half of the public school sample consisted of African American children, while almost no African American children were included in the private school sample. Thus, type of school and race are confounding variables in the current study, making conclusions difficult. Moreover, marital status and Discipline Routines and Expectations are also significantly related, with children of single parent households reporting less routines. Further analysis also revealed that African Americans reported significantly

fewer dual parent households then any other racial group, presenting yet another confound. Nonetheless, this finding is consistent with the CRQ-CSR measure development study and other studies that have found that African Americans employ different disciplinary styles than Caucasian families (Binder, 2009; Castelli, 2009; Pinderhughes, Dodge, Bates, Pettit, & Zelli, 2000). However, if differing schools is driving this observed difference, a possible explanation could be related to the fact that most of the private schools that participated in this study were religious institutions. Religious schools may innately practice and implement disciplinary techniques. This finding calls to light the need for additional research on racial differences in the employment child routines.

Moreover, child demographic differences were also observed on the Household Responsibilities subscale. Specifically, there was a significant positive relationship between household responsibilities and age and children from private schools reported significantly fewer household responsibilities that children in public schools. The relationship between child age and routines may be a result of the increase in chores and household responsibilities as children get older. A few factors could be responsible for the differences in household and cleaning routines between children in public and private schools. For one, children in private schools may be spending more of their discretionary time participating in after school groups or sports teams than in doing household chores. A second reason that children in private schools report less household responsibilities could be because there are more stay at home mothers that complete most of the household chores. Additionally, Caucasian children reported significantly less household responsibilities then Hispanic children, younger children reported significantly fewer household responsibilities than older children, and children in the Mississippi/Louisiana

sample reported significantly less household responsibilities than children in the Houston sample. One explanation could be resulting from the Houston sample consisting of only 11-12 year old Hispanic children from the only charter school in the study, multiple factors could still best explain the findings. For example, this relationship could be a reflection of higher rates of Household Responsibilities reported by the older 11 and 12 year old children in the Houston sample, but this finding could also be a reflection of culture. Previous research has that found Hispanic children spent more of their time than Caucasian and African American children doing household work alongside other family members (Hofferth & Sandberg, 2004). This finding would also be consistent with the concept of *familialism*, in which the Hispanic culture values family collaboration with household duties and other types of work. This is the first known study to examine the daily routines of children using a large sample of Hispanic children. Nonetheless, the multiple confounding variables make it difficult to attribute a likely cause of the findings.

In examining parent demographic differences in the CRQ-CSR, parent age and marital status were correlated with CRQ-CSR factors. Parent age was negatively related to Daily Living and Family Routines, Household Responsibilities, and Total Routines. As parents age, they likely have more children making routines more difficult to maintain. Also, with additional children or age, parents may become more relaxed with the demands they place on their children (Gottfried & Gottfried, 1994). However, no significant relationship emerged between parent reported routines and parent age during the measure development study of the CRQ parent report (Jordan, 2003) and this relationship was not examined in the measure development study (Binder, 2009).

Moreover, the current study found that Discipline Routines and Expectations and Total Routines were significantly related to marital status, suggesting that children from

dual parent households have more routines. A significant relationship emerged between child routines on the Daily Living and Family Routines scale and marital status during the measure development study. The discrepancy between related scales could be attributed to the six items that switched from the Daily Living and Family Routines scale to the Discipline Routines and Expectations scale in the current study. No significant difference was noted between marital status and parent report of child routines (Jordan, 2003). Nonetheless, dual custody can cause significant disruptions in a child's daily routines, even in the best custody arrangements. Parents sharing custody usually are presented with situations in which one parent will need to alter their visitation schedule to accommodate conflicting plans. Visitation schedules and routines also change during school breaks and over holidays. Since routines change between households and it takes time for children to adjust to the changes in routines when moving between two households. Furthermore, parents who have sole custody likely have a variety of stressors that come along with single parenting, impeding their ability to develop and maintain routines for children. Although not extensively studied, the added support of a co-parent may help parents develop and maintain routines in the household. It is also important to note that child characteristics could play a role in the maintenance of routine behaviors. Oftentimes, significant externalizing behavior problems result from the adjustment to divorce, ongoing conflict between parents, and from the other stressors that accompany a single parent household, making routines, especially discipline routines and expectations, even more challenging to implement.

It is also important to note that 27% of children in the current study had at-risk or clinically significant scores on the parent-report behavioral symptoms index, while 17% of the children in the current study had at-risk or clinically significant scores on the self-

report emotional symptom index. This amount of clinically reported problems suggests the sample was diverse and had the necessary range for evaluating validity, which was a strength of the current study. This underscores that many children who have clinically significant problems are not receiving treatment (Weisz & Kazdin, 2010), since this number is significantly lower than the percent of parents that reported current or previous psychological treatments on the demographic questionnaire (13%).

Overall, the factor structure obtained from the current study should be employed for future use. The three-factor structure identified in the measure development study has been upheld and largely replicated in the current study. Although several items changed factors, many of those items loaded onto both factors during the measure development study. Overall, item loadings obtained during the current study were close to those observed during the measure development study. Moreover, the current sample is almost twice as large as that used in the measure development study. The current sample also appears to be more representative of the full age range and was ethnically heterogeneous when compared to the measure development sample. Finally, a number of children with reported clinical difficulties were included in the sample, providing further support for diversity and heterogeneity of the sample, and suggesting that the current factor structure is more representative of the population then that obtained during the measure development study. Therefore, the current sample is likely a more stable and representative sample then that used during the measure development study. Nonetheless, due to discrepancies between the two studies, a third diverse sample would be beneficial to provide additional support in determining the final factor structure.

The present findings should be interpreted in light of a number of methodological and procedural limitations. The greatest limitation of this study was a result of

recruitment differences. Specifically, a large portion of the sample (n = 82) was collected in conjunction with another study at a charter school composed primarily of Hispanic children in a location that was geographically distant from the other data collection sites. Not only was this location the only charter school that participated in this study, but this site was also a middle school, consisting only of 11 and 12 year old participants. As a result, it is difficult to draw conclusions from the data due to the confounding nature of some of the variables. For example, it is difficult to know if findings were attributed to race, type of school, geographic location, or an interaction effect occurring between the variables. The number of 11 year old participants in this sample also caused an unequal distribution amongst age, which also could have influenced the findings. For example, the large number of 11 year old participants may have caused inflated scores on routines that require more independent abilities.

Another limitation, which is in part related to recruitment differences, was failure to collect caregiver report data for all children in the sample. Important demographic information was not obtained from 31.7% of caregivers who failed to return their demographic form. Even more problematic was that this missing data came primarily from the Houston sample of parents. Due to absent demographic information, there is no way to know if this portion of the overall sample differed in any meaningful way from those who fully participated. This also significantly reduced descriptive features the Houston sample of children. This was particularly important because this sample of children differed geographically and ethnically from the measure development sample and the other sample of children in this study. More parent report demographic information would also provide an opportunity to compare the relationship between parent demographic variables and child routines. For example, significant relationships

were found between parent variables and child routines with the Mississippi and Louisiana sample of children; however, it is unclear if similar relationships exist in the Houston sample of children. Future studies should examine the relationship between parent variables from an ethnically diverse sample and child routines.

A third limitation was the time delay between administration of the child and parent report instruments and the dual method of collecting parent report data. Specifically, parents were allowed up to three months to complete the child behavior questionnaire after their child completed the child report information. Child behavior could change over the three month period and the time differences likely introduced error into the findings. Moreover, parent data was collected over the phone and the internet. Parents who completed the questionnaire over the internet were only given their child's initials for confidentiality purposes, making it impossible to know if they were reporting on the correct child. Future studies should try to use a more systematic single method of administration with a shorted time delay between parent and child report.

Also related to recruitment differences, a fourth limitation was differences in the subsample participation. Specifically, the schools decided on participation in any additional parts to the study following administration of the consent, demographic, and routines questionnaires. Although public and private schools agreed to participate in validation measures, the majority of subsample children were Caucasian with few African American students participating (see Table 5), placing constraints on the generalizeability of this portion of the findings. Future studies should attempt to gain self-reported information on child behaviors from a more heterogeneous sample.

A fifth limitation was that no data were collected number of children in the home, which could influence frequency of routines that families have established in the home. Having multiple children in the home could make routines more difficult to maintain or but also may cause parents to be more stringent to ensure families stay on a consistent schedule. This variable could also be related to the relationship between parent age and child routines. However, these relationships remain largely unexplored.

Future studies should re-examine the psychometric properties (i.e., reliability, validity, and factor structure) with a geographically representative sample that is consistent with the U.S. Census Bureau demographics. A large-scale, multi-site validation sample with an equal distribution of children across demographics variables, such as age, sex, type of school, and SES using the sample recruitment technique would be beneficial.

Moreover, future studies should also closely examine differences in the perception of routines are at different ages and with different sexes. As children get older, their conceptualization and perception of the meaning behind the routine behaviors may change. Future studies should also use this measure as a part of larger treatment outcome studies to determine if implementation of routines could benefit or serve as a protective factor for children with perceived stressors. Research is still expanding in the area of routines but further research is necessary to determine if implementing routines can benefit at-risk children.

Since the CRQ has demonstrated good reliability and support for validity, future studies should also continue to examine the benefits of established routines during childhood. To further examine the role of routines, future studies should examine the effect of parenting styles, child temperament, and the number of caregivers or quality of home environments in which the that the child is placed. For example, future studies

should examine whether authoritative parents employ more routines and determine if the parent styles moderates between child routines and child behaviors. Moreover, child variables should be further examined in future studies to determine if children with certain temperaments are more amenable to routines or benefit more from routines. Finally, if parents are divorced but a parent is raising a child on his/her own, he/she may be better able to maintain routines. Clinically, parents often report that child behavior problems escalate due to changes in routines surrounding visitation at the co-parent's home (Amato & Rezac, 1994).

In summary, the present study found mixed results for the psychometric properties of the CRQ-CSR. Although CFA revealed lower than expected fit characteristics, WLS with Promax rotation revealed three distinct internally consistent components of children's daily routines. However, items within each factor differed from the measure development study. There are several potential explanations for these differences. The changes are most likely due to the larger, thus morerepresentative, sample size. However, other explanations, including cultural variability and perception of item content based on age, could also explain the findings; however further research is necessary. Nonetheless, the CRQ-CSR total scale continued to demonstrate excellent internal consistency in a larger, more heterogeneous sample, replicating prior findings and offering continued support for its reliability and validity with school aged children in the South. Overall, the CRQ-CSR also demonstrated stronger evidence for validity in the present sample. Specifically, construct validity was supported through significant relationships between the CRQ-CSR and a self-report measure of stability in the family environment, as well as with self-report of child behavior. Although some unexpected relationships were revealed, these relationships were, for the most part, theoretically

justifiable. Finally, relationships were also demonstrated between demographic variables and child routines.

Future studies should continue to examine these significant relationships to determine if development of gender, age, and/or race norms are necessary. Despite several limitations noted, reliability and validity coefficients obtained in this study appear to be consistent with those obtained in other child measure development samples, including the measure development sample of the CRQ-CSR.

In conclusion, despite the emphasis placed on the relationship between child routines and child adjustment, more empirical data is still needed to support these claims. This study demonstrates an attempt to further evaluate the psychometric properties of a self-report measure on child routines. A self-report measure on child routines should assist in future research on child routines and have clinical utility, especially for children enrolled in treatment programs or for children who have multiple caregivers. Nonetheless, there continues to be a need for additional research on the role of child routines have on child development and child psychopathology in order to support the claims made by many child development experts and in the popular press.

APPENDIX A

IRB APPROVAL FORM

THE UNIVERSITY OF SOUTHERN MISSISSIPPI

Institutional Review Board

118 College Drive #5147
Hattiesburg, MS 39406-0001
Tel: 601.266.6820
Fax: 601.266.5509
www.usm.edu/irb

HUMAN SUBJECTS PROTECTION REVIEW COMMITTEE
NOTICE OF COMMITTEE ACTION

The project has been reviewed by The University of Southern Mississippi Human Subjects Protection Review Committee in accordance with Federal Drug Administration regulations (21 CFR 26, 111), Department of Health and Human Services (45 CFR Part 46), and university guidelines to ensure adherence to the following criteria:

- The risks to subjects are minimized.
- The risks to subjects are reasonable in relation to the anticipated benefits.
- The selection of subjects is equitable.
- Informed consent is adequate and appropriately documented.
- Where appropriate, the research plan makes adequate provisions for monitoring the data collected to ensure the safety of the subjects.
- Where appropriate, there are adequate provisions to protect the privacy of subjects and to maintain the confidentiality of all data.
- Appropriate additional safeguards have been included to protect vulnerable subjects.
- Any unanticipated, serious, or continuing problems encountered regarding risks to subjects must be reported immediately, but not later than 10 days following the event. This should be reported to the IRB Office via the "Adverse Effect Report Form".
- If approved, the maximum period of approval is limited to twelve months. Projects that exceed this period must submit an application for renewal or continuation.

PROTOCOL NUMBER: **10080302**
PROJECT TITLE: **Further Validation of the Child Routines Questionnaire - Child Self-Report**
PROPOSED PROJECT DATES: 08/20/2010 to 08/20/2011
PROJECT TYPE: **Dissertation**
PRINCIPAL INVESTIGATORS: **Christina Binder**
COLLEGE/DIVISION: **College of Education & Psychology**
DEPARTMENT: **Clinical Psychology**
FUNDING AGENCY: **N/A**
HSPRC COMMITTEE ACTION: **Full Committee Review Approval**
PERIOD OF APPROVAL: **10/07/2010 to 10/06/2011**

Lawrence A. Hosman, Ph.D.
HSPRC Chair

10-11-2010
Date

APPENDIX B

CONSENT FORM

The University of Southern Mississippi

Dear Parents,

You and your child, between the ages of 8 and 12 are being invited to participate in a research study. The purpose of this study is to examine the validity of a child report questionnaire about child's daily routines and to examine the relationship between child routines and child behaviors. All children are equally encouraged to participate in this study that will help us better understand the function and importance of child routines. If you have more than 1 child between the ages of 8 and 12 who has been asked to participate in this study, please randomly select only 1 child.

If you agree to participate, your child will be asked for his/her assent and then be instructed to fill out a few questionnaires in school with his/her classmates about their daily routines and their feelings/behavior. The completion of the questionnaires should take approximately 30 minutes to complete during a non-class work time arranged by the child's teacher. If you do not wish to participate, your child will be given an alternative task (e.g., crossword puzzle) to complete while his/her peers complete the questionnaires. Additionally, you may be asked to complete a parent questionnaire about your child's behaviors within 3 months of your child's participation in the project. You will be given the option to complete this questionnaire over the phone or online. This portion of the project will take about from 20 minutes and can be completed at your convenience. Questionnaires will not include your name or your child's name. Each packet will be coded with a number to ensure confidentiality. The code list will be locked in a file cabinet in the principal investigator's lab, and all information will remain confidential. If you choose to complete the parent questionnaire online, you will be sent an email with a link to the appropriate site. This email will not contain your child's name, but will provide you with the initials and remind you of the details of the study. The principal investigator might use information from the questionnaires in other studies like this one. If study results are published, your child's name will not be used. Your responses may be excluded from the study if you or your child fails to complete several items on any given questionnaire in the packet.

There are no direct benefits for participating in this study; however, if you choose to participate, your name will be added to a drawing for two $50 Wal Mart Gift Certificates. Additionally, if you complete the parent questionnaire, your name will also be added for a drawing for ten $10 Wal Mart Gift Certificates. These measures are being gathered for research purposes and are not part of a clinical evaluation. Therefore, you will not be given any information about your child's specific scores on the questionnaires. However, you will be notified in the unlikely event that your child's responses indicate a serious symptom or self-harm behaviors. Through your help in completing this project, we hope to learn more about the role and potential benefits that routines have in children's lives. There is little risk for completing this study although your child

may find it mildly distressing to report their emotions or behaviors. If you choose to complete the parent questionnaire online there are some additional risks. There is always the possibility of security breaches; however, numerous steps are in place to ensure secure transmission and storage of your responses on the questionnaires. None of the questions during this project will ask specifically about child abuse or neglect; however, if during the course of the study your child were to disclose information that would cause us to suspect he/she is being harmed or neglected, we would be obligated to report to appropriate authorities. Participation in this research study does not involve clinical assessment or treatment. However, if you are concerned about your child's behavior and would like referral to a local mental health professional, please contact Pine Belt Mental Health Resources at 601-544-4641, Pine Grove Behavioral Health at 1-800-574-HOPE (4673)/601-288-4800, USM Psychology Clinic at 601-266-4588, Southeastern Louisiana Hospital at 985- 626-6300, or Dr. Sara Jordan at 601-266-4587 for more information.

You and your child's participation is voluntary. If you decide not to participate in this study you will not suffer a penalty or loss of benefits to which you are otherwise entitled. If you decide to participate in this study you may discontinue your participation at any time, without penalty or loss of benefits; however, if you or your child fails to complete any of the questionnaires, your data may not be used in this study.

If you have any questions or need to report any problems or want additional information about being a study participant, please call Christina Binder at (727) 504-1477 or by email at cb2105@aol.com or Dr. Sara Jordan at (601) 266-4587 or by email at sara.jordan@usm.edu. This project has been reviewed by the Human Subjects Protection Review Committee, which ensures that research projects involving human subjects follow federal regulations. Any questions or concerns about rights as a research subject should be directed to the chair of the Institutional Review Board, The University of Southern Mississippi, Box 5147, Hattiesburg, MS 39406, (601) 266-6820.

By signing below, you are indicating that you have read this letter, had an opportunity to ask questions about this study, and are agreeing that you and your child are participating in this study. Additionally, please complete and return the attached demographic form. Once completed the forms should be sent back to school with your child and returned to their teacher. Thank you for your interest in this research study.

Sincerely,

Christina Binder   Sara Jordan, Ph.D.
Graduate Student   USM Department of Psychology
USM Department of Psychology

_____   _____
Name of participant/parent (print)   Name of Child (print)

_____   _____
Signature of participant/parent   Date

_____   _____
Home Telephone Number   Cellular Telephone Number

Please select ONE of the following regarding your preference for followup.
I would like to be contacted by telephone to complete the parent questionnaire.
I would like to be contacted by email to complete the parent questionnaire online.

Email address (please write clearly) _____

APPENDIX C

DEMOGRAPHIC QUESTIONNAIRE

These forms are for mothers and fathers with children between the ages of 8 and 12. Please fill out the following information about your child.

Child's School: _____ Teacher's Name: _____

Child's Name: _____ Today's Date: _____

Child's Age:___   **Child's Date of Birth:**_____   **Child's Sex:** Female__ Male__

Child's Race: Caucasian/White___ African American/Black___ Asian___ Other:_____

Has this child received help (from a counselor, therapist, or psychologist) due to behavior problems?

Yes ___ No ___   **If *yes, when?* From:** _____ **To:** _____

                                                           (month/year)   (month/year)

ABOUT <u>YOU</u> AND <u>YOUR FAMILY</u>

Your Relation to Child: Biological Parent _____ Step-parent ___ Adoptive Parent ___

                                      Grandparent _____ Other (please describe): _____

Your Age:___   **Your Date of Birth:**_____   **Your Sex:** Female__ Male__

Your Race: Caucasian/White___ African American/Black___ Asian___ Other:_____

Marital Status:

Never Married/Living Alone_____ Never Married/Living with Significant Other_____

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
_____ Junior College Graduate	_____ Junior College Graduate
_____ Bachelors or University Graduate	_____ Bachelors or University Graduate
_____ Graduate Professional Degree (masters, doctrate)	_____ Graduate Professional Degree (masters, doctorate)

Occupation: Please provide your job title or position, NOT just the 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**, please state "unemployed".

What is your occupation? (please be specific)_____

What is your Spouse/Significant others occupation? (please be specific)_____

APPENDIX D

CHILD ROUTINES QUESTIONNAIRE – CHILD SELF REPORT

Your Name _____ Today's Date _____
           First   Last   Month   Day   Year
How old are you? _____   Sex: Girl ___ Boy   Grade ____

Routines are things you do at about the same time, in the same order, or in the same way every time. Some routines happen each day. Other routines happen more or less often. Answer the questions below based on **how often** you **have done** the routine compared to how often you **could have** done it in the past month. **You will have 5 answer choices: 0, 1, 2, 3, and 4.**

Here is an example:

1) I make my bed.   0   1   2   3   4

Fill in **0** if you **never** make your bed at the same time or in the same way.
Fill in **1** if you **rarely** make your bed at the same time or in the same way.
Fill in **2** if you **sometimes** make your bed at the same time or in the same way.
Fill in **3** if you **often** make your bed at the same time or in the same way.
Fill in **4** if you **almost always** make your bed at the same time or in the same way.

	How **often** does it occur at about the **same time** or in the **same way**? 0 = Never 1 = Rarely 2 = Sometimes 3 = Often 4 = Almost Always
1) I do the same things every morning like get dressed and brush my teeth.	0 1 2 3 4
2)I know what will happen if I don't follow rules.	0 1 2 3 4
3) I talk with my family about their day.	0 1 2 3 4
4) I have chores.	0 1 2 3 4
5) I pick up my bedroom each day.	0 1 2 3 4
6) I eat meals with family in the same place daily.	0 1 2 3 4
7) I hug/kiss my mom/dad each night before bed.	0 1 2 3 4
8) I clean up food mess after snack.	0 1 2 3 4
9) I spend special time talking with my parent each day.	0 1 2 3 4

	How **often** does it occur at about the **same time** or in the **same way**? 0 = Never 1 = Rarely 2 = Sometimes 3 = Often 4 = Almost Always				
10) I practice for lessons at about the same time each day.	0	1	2	3	4
11) I do the same thing each night before bed (brush teeth, kiss parent).	0	1	2	3	4
12) I have rules at my house like "no running inside" or "no yelling".	0	1	2	3	4
13) I wake up about the same time on school days.	0	1	2	3	4
14) I have to do my homework or chores, and then I can play.	0	1	2	3	4
15) I get rewards when I am good and do what I should.	0	1	2	3	4
16) I eat dinner at about the same time each day.	0	1	2	3	4
17) I brush my teeth before bed.	0	1	2	3	4
18) I pick up my dirty clothes.	0	1	2	3	4
19) I wash my hands before meals.	0	1	2	3	4
20) I read the bible or a holy book with my mom/dad each day.	0	1	2	3	4
21) I go to bed at about the same time on school nights.	0	1	2	3	4
22) I help clean up after meals.	0	1	2	3	4
23) I can only do fun things like watch TV for a short time each day.	0	1	2	3	4
24) I wash my hands after going to the bathroom.	0	1	2	3	4
25) I get in trouble when I am bad.	0	1	2	3	4
26) I help my family plan fun things to do.	0	1	2	3	4
27) I get in more trouble when I am really bad than when I am a little bad.	0	1	2	3	4
28) I pick up toys and put them away when I am done playing.	0	1	2	3	4
29) I eat breakfast at about the same time and place each day.	0	1	2	3	4
30) I make my bed each morning.	0	1	2	3	4
31) I help put things away from the store.	0	1	2	3	4
32) Mom/dad tells me when I am being good.	0	1	2	3	4
33) I pray before meals.	0	1	2	3	4
34) I do scheduled fun things with my family each week.	0	1	2	3	4
35) I show my mom/dad my school work.	0	1	2	3	4
36) I do homework at the same time and place.	0	1	2	3	4
37) I have a grown up who helps me and checks my homework.	0	1	2	3	4
38) I do all my homework.	0	1	2	3	4
39) I study for tests.	0	1	2	3	4

APPENDIX C

PATTERN MATRIX FOR PRINCIPAL COMPONENTS ANALYSIS WITH PROMAX

ROTATION, FORCED 3-FACTORS, 35 ITEMS

	Subscale 1: Daily Living Routines	Subscale 2: Discipline Routines	Subscale 3: Household Routines	Corrected Item-Total Correlation
9. talk with parent	**.695**	-.133	.123	.530
32. praise good behavior	**.660**	-.074	.160	.573
34. fun with family	**.642**	-.158	.132	.465
3. talk with family	**.621**	-.134	.177	.499
15. rewards	**.609**	-.129	-.053	.342
26. decide family activities	**.599**	.154	-.003	.584
29. breakfast on time/place	**.565**	.032	-.173	.354
11. bedtime routine	**.555**	-.087	.208	.500
7. PM hug/kiss parent	**.470**	.215	-.065	.476
36. homework on time/place	**.443**	**.332**	-.277	.407
17. PM brush teeth	**.430**	-.092	.163	.365
6. meals with family	**.415**	**.328**	-.185	.454
16. dinner same time	**.396**	.264	-.022	.497
39. study tests	**.376**	**.364**	-.095	.499
37. homework supervision	**.315**	.280	-.047	.416
13. wake up on time	-.190	**.723**	.077	.443
25. punishment- get in trouble	-.166	**.695**	-.032	.373
21. bedtime	.038	**.672**	.088	.591
38. complete homework	.037	**.640**	-.063	.462
12. household rules	-.067	**.570**	.196	.503
14. finish chores before play	-.088	**.561**	.108	.413
27. consistent consequences	.006	**.470**	.021	.373
35. show parent school work	**.328**	**.397**	-.082	.495
23. limits on fun	.084	**.383**	.115	.421
2. discipline knows what happens	.081	**.325**	**.307**	.500
19. wash hands before meals	-.091	-.060	**.754**	.352
8. clean up after snack	.040	.160	**.616**	.546
18. pick up clothes	.127	-.107	**.598**	.398
5. straighten room	.029	-.144	**.589**	.288
31. help put away after store	-.063	.142	**.561**	.407
22. clean up after meals	-.101	.262	**.547**	.467
28. pick up toys	.109	.104	**.495**	.480
29. wash hands after toilet	.120	-.012	**.466**	.363
4. chores	-.045	.143	**.375**	.310
33. prayers before meals	.115	.251	.264	.436

Note: Values represent pattern coefficients for the rotated solution (Promax). Abbreviated item labels are used. Full items available on measure (see Appendix D).

APPENDIX D

CRQ-CSR MEASURE DEVELOPMENT STUDY: ITEM-TOTAL CORRELATION

COEDDICIENTS AND SUBSCALE COEFFICENT ALPHAS

Subscale 1: Daily Living Routines	Subscale Item-Total Correlations
3. I talk with my family about their day.	.511
6. I eat meals with family in the same place daily.	.467
7. I hug/kiss my mom/dad each night before bed.	.478
9. I spend special time talking with my parent each day.	.570
11. I do the same thing each night before bed (brush teeth, kiss parent).	.513
15. I get rewards when I am good and do what I should.	.396
16. I eat dinner at about the same time each day.	.495
17. I brush my teeth before bed.	.371
26. I help my family plan fun things to do.	.615
29. I eat breakfast at about the same time and place each day.	.418
32. Mom/dad tells me when I am being good.	.592
34. I do scheduled fun things with my family each week.	.500
36. I do homework at the same time and place.	.450
37. I have a grown up who helps me and checks my homework.	.402
39. I study for tests.	.486

Total Alpha: .852

Subscale 2: Discipline Routines	
2. I know what will happen if I don't follow rules.	.454
12. I have rules at my house like "no running inside" or "no yelling".	.521
13. I wake up about the same time on school days.	.503
14. I have to do my homework or chores, and then I can play.	.425
21. I go to bed at about the same time on school nights.	.582
23. I can only do fun things like watch TV for a short time each day.	.386
25. I get in trouble when I am bad.	.500
27. I get in more trouble when I am really bad than when I am a little bad.	.386
35. I show my mom/dad my school work.	.444
38. I do all my homework.	.512

Total Alpha: .794

Subscale 3: Household Responsibilities	
4. I have chores.	.312
5. I pick up my bedroom each day.	.365
8. I clean up food mess after snack.	.593
18. I pick up my dirty clothes.	.483
19. I wash my hands before meals.	.545
22. I help clean up after meals.	.520
24. I wash my hands after going to the bathroom.	.390
28. I pick up toys and put them away when I am done playing.	.465
31. I help put things away from the store.	.458
33. I pray before meals.	.356

Total Alpha: .777

APPENDIX E

CRQ-CSR TEST-RETEST RELIABILITY COEFFICIENTS

	CRQ-CSR ($n = 31$)
CRQ-CRS Subscale 1: Daily Living	.754***
CRQ-CSR Subscale 2: Discipline	.546**
CRQ-CSR Subscale3: Household	.764***
CRQ-CSR Total Score	.769***

Note: *$p < .05$. ** $p < .01$; *** $p < .001$

APPENDIX F

CRQ-CSR INTERRATER RELIABILITY: BIVARIATE CORRELATIONS BETWEEN

SUBSCALES AND TOTAL SCALE SCORES OF THE CRQ-CSR AND THE CRQ-

CPR

	CRQ-CPR Subscale 1: Daily Living	CRQ-CPR Subscale 2: Household	CRQ-CPR Subscale 3: Discipline	CRQ-CPR Subscale 4: Homework	CRQ-CPR Total Score
CRQ-CSR Subscale 1: Daily Living	**.154**	-.099	-.083	.190*	.017
CRQ-CSR Subscale 2: Discipline	**.227****	-.006	**-.048**	.090	.072
CRQ-CSR Subscale 3: Household	.002	**.204***	-.025	-.049	.056
CRQ-CSR Total Routines	.162	.010	-.069	.116	**.053**

Note: * *p* < .05. ** *p* < .01. CRQ-CPR = Child Routines Questionnaire-Child Parent Report; CRQ-CSR = Child Routines Questionnaire-Child Self Report

APPENDIX G

CRQ-CSR CRITERION RELATED VALIDITY: BIVARIATE CORRELATIONS

BETWEEN THE CHILD ROUTINE CHECKLIST AND THE CRQ-CSR

	CRQ-CPR Subscale 1: Daily Living	CRQ-CPR Subscale 2: Household	CRQ-CPR Subscale 3: Discipline	CRQ-CPR Total Score
CRQ-CSR Subscale 1: Daily Living	**.675***	.545***	.443***	.658***
CRQ-CSR Subscale 2: Discipline	**.346***	.392*	**.237**	.381*
CRQ-CSR Subscale 3: Household	.360*	**.277**	.536***	.437**
CRQ-CSR Total Routines	.531**	.470**	.452**	**.564***

Note: * *p* < .05. ** *p* < .01. *** *p* < .001

APPENDIX H

CRQ-CSR CONSTRUCT VALIDITY: BIVARIATE CORRELATIONS BETWEEN

CRQ-CSR AND OTHER MEASURES

	FRI (f)	CBCL (ex)	CBCL (ax/dp)	CBCL (wd/dp)
CRQ-CSR	.235*	.048	.064	-.05

Note: * *p* < .05. CRQ-CSR = Child Routines Questionnaire-Child Self Report, FRI = Family Routines Inventory-frequency subscale, CBCL(ex) = Child Behavior Checklist-raw score externalizing composite, CBCL(ax/dp) = Child Behavior Checklist-raw score anxious/depressed composite, CBCL(wd/dp) = Child Behavior Checklist-raw score withdrawal/depressed composite

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