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THE ROLE OF DAILY ROUTINES IN ADOLESCENTS DIAGNOSED WITH ATTENTION-DEFICIT/HYPERACTIVITY DISORDER

A Dissertation

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

in

The Department of Psychology

by
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ABSTRACT

Researchers consistently report both immediate and long-term benefits of establishing daily routines during childhood (e.g., increased physical health, medical treatment adherence, homework completion, and family communication). Increasing routines is also an essential component of evidence-based treatment programs for childhood externalizing problems (i.e., impulsivity, hyperactivity, and noncompliance). Research indicates that ADHD children respond particularly well to the regularity and predictability offered by daily routines. However, relatively few studies have examined the role that routines play on the adjustment and development of adolescents. In part, this is due to the lack of assessment tools available that specifically measure adolescent routines. The Adolescent Routines Questionnaire: Parent and Self-Report (ARQ:P/S) is the first measure designed to assess adolescent routines specifically, and initial studies evaluate the ARQ as psychometrically sound. The present study aimed to both replicate and extend preliminary research conducted on the ARQ and adolescent daily routines by demonstrating the clinical utility of the measure in a sample of ADHD vs. non-ADHD adolescents and their parents. Daily routines were examined across groups to compare rates of endorsement. Mean comparisons indicated ADHD adolescents and their parents endorsed significantly fewer daily routines, as well as significantly greater levels of parent-adolescent conflict, than a non-ADHD comparison group. Discriminant function analyses revealed significant group classification rates using ARQ score as the independent factor. Regression analyses indicated daily routines, as assessed by the ARQ, significantly predicted the severity of ADHD symptoms in adolescents. Benefits of assessing adolescents' daily routines and implications relative to treatment outcome research are discussed.

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INTRODUCTION

"Routines," defined broadly, are procedures or behaviors performed habitually or mechanically in a particular order, in the same location, and at regularly scheduled intervals (Fiese, 2006; Sytsma, Kelley, & Wymer, 2001). Popular press consistently emphasizes the importance of establishing daily routines during childhood. The structure and predictability offered by routines is thought to serve an integral role in a child's daily life, and routines arguably influence and promote appropriate child development. Moreover, child rearing resources such as parenting books and magazine articles regularly encourage parents to structure the daily lives of their children. Routines are commonly recommended for recurring events such as morning activities, mealtimes, academic task completion, socialization, hygiene management, healthcare, and bedtime (Curtis, 2000; Fiese, 2006).

Research suggests that consistent routines demonstrate advantages across a range of developmental periods. Toddlers with established routines appear to display smoother transitions and develop independence and trust (Handler, 1997; Shimm & Ballen, 1995). During childhood, routines are described as critical in the development of children's sense of predictability, stability, and security (Hall, 1997). For older children progressing into adolescence, research indicates that routines potentially facilitate academic achievement and assist in establishing adolescents' roles within the household (Robin, 1998; Meyer & Kelley, 2007). The benefits of daily routines even manifest during adulthood, assisting anxious parents to feel calmer and to experience decreased stress levels (Snyder, 1999).

The following review of the literature 1) provides empirical support for establishing daily routines with children, families, and adolescents, 2) describes available methods of assessing daily routines, 3) introduces an instrument developed specifically for assessing adolescents' daily routines, and 4) investigates previous research conducted on daily routines and ADHD.

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Empirical Support for Establishing Routines

Environmental constructs such as routines have historically been studied from sociological and anthropological perspectives. Recognition of the role that routines play in the psychological and physical health of children and families is a recent movement in the field of psychology (Fiese, 2006). Therefore, the majority of empirical support for maintaining routines thus far references child and family routines, although studies investigating the influence of routines specifically related to adolescents' well-being are beginning to emerge (Kiser, Bennett, & Paavola, 2005).

Childhood Routines. Routines of childhood are referenced frequently in both scientific literature (Pruitt, 1998; Murphy, Marelich, Herbeck, & Payne, 2009) and the popular press (Eisenberg, Murkoff, & Hathaway, 1996). A substantial portion of the research on childhood routines discusses evidence-based parent-training programs, which universally support increased structure and routine as a treatment component for managing oppositional or disruptive behavior in children (Forehand & Long, 2002; Adams & Rickerts, 1989; Baumann, Reiss, Rogers, & Bailey, 1983; Dadds, Sanders, & Bor, 1984). The literature suggests that daily routines that are consistently implemented instill a long-term sense of control and security in children, secondary to the immediate benefits of perceived predictability and stability (Curtis, 2000; Barkley, 2003). In addition, the increased sense of control offered by childhood routines promotes smoother long- and short-term transitions (i.e. task-to-task, grade to grade, etc.), which then influence various other critical domains within a child's life (i.e., academic achievement, physical health; Sytsma-Jordan, Kelley, & Henderson, 2002; Barkley, 2008). In addition to the reported effects on behavior and transitions, routines reportedly moderate hyperactivity and impulsivity and increase self-control and emotion regulation for children (Pruitt, 1998; Schipani, 2007). Increased daily routines are also associated with reduced parent-child conflict (Nelson, Erwin, &

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Duffy, 2007) and increased positive parent-child interaction and communication (Robin & Weiss, 1980).

Moreover, researchers recommend increased daily routines as an effective method for reducing a range of other problem behaviors in childhood (Kiser, Bennett, & Paavola, 2005; Sprunger, Boyce, & Gaines, 1985). For example, increased homework routines resulted in less problematic homework behavior and improved rates of homework completion (Toney, Kelley, & Lanclos, 2003; Bloomquist, 2005; Kahle & Kelley, 1994). Research also indicates that parents who establish consistent exercise routines with their children report increased physical activity and decreased body mass index for their children compared to parents with no established exercise routines (Dadds, Sanders, & Bor, 1984; Eisenberg, Murkoff, & Hathaway, 1996).

Family Routines. Like childhood routines, family routines are regularly emphasized in the literature and promoted as influential precursors to child development. For example, consistent family routines have been empirically supported as effective tools for helping children to cope with chronic medical illness. Lee, Murray, Brody, and Parker (2002) suggest that family routines increase children's health-promoting behaviors such as consistently taking multi-vitamins or adhering to other daily medication regimes. Family routines appear particularly advantageous for chronically-ill children facing complex, home-based treatment procedures, such as those typical for asthma (Schreier & Chen, 2010), type 1 diabetes mellitus (Mellin, Neumark-Sztainer, Patterson, & Sockalosky, 2004), and cystic fibrosis (Bartholomew, Czyzewski, Parcel, Swank, Stockrider, Mariotto, Schidlow, Fink, & Seilheier, 1997). Numerous studies suggest that consistent family routines are associated with optimal treatment adherence and long-term positive prognosis across a range of medical conditions (Markson & Fiese, 2000; Jacobs & Fiese, 2007; Mellin et al., 2004; Greening, Stoppelbein, Konishi, Jordan, & Moll, 2007; Boyce, Jensen, Cassel, Collier, Smith, & Ramey, 1977; Sytsma-Jordan et al., 2006;

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Peterson-Sweeney, 2009). For example, Schreier and Chen (2010) recently investigated the role of family routines in the long-term prognosis of asthmatic children and adolescents. The authors concluded that youth who maintained consistent family routines experienced less severe asthmatic symptoms compared to those with fewer, inconsistent routines. Consistent family routines prompted optimal medication adherence, which resulted in positive long-term outcomes for these children and adolescents. Therefore, Schreier and Chen (2010) recommend that when treating asthma in youth, consideration of the family's daily activities is warranted as routines appear to have implications for long-term prognosis of positive health.

Several other studies have demonstrated the benefits of family routines and rituals in children and adolescents with chronically-ill caregivers. For example, Buchblinder, Longhofer, and McCue (2009) were interested in modifications to family routines and subsequent emotional functioning for children following a maternal diagnosis of cancer. The authors noted that, despite significant upheaval in usual family activities during maternal cancer treatment, a subset of families strived to continue normal family routines, which resulted in a greater sense of normalcy and positive emotional well-being in the children of these families. Murphy, Marelich, Herbeck, and Payne (2009) reported similar benefits regarding family routines and maternal chronic illness. HIV/AIDS-infected mothers who continued to require normal routine and structure within the family reported lower rates of adolescent aggression, anxiety, worry, depression, and conduct disorder when compared to less structured families.

The empirical support for routines is based primarily on studies that have emphasized childhood and family routines, neglecting the potential role that routines play for adolescents (Coghill, Soutullo, d'Aubuisson, Preuss, Lindback, Silverberg, & Buitelaar, 2008). Although investigations on family routines often include adolescent participants, examination of adolescent routines in isolation remains unexplored, with previous work instead evaluating more

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general routines of the family. Therefore, the potential utility of adolescent routines remains unknown, and the role that adolescent routines play in adjustment and emotional well-being remains unclear. Historically, conclusions from studies of children's routines have been errantly generalized to adolescents; however, given the rapid changes associated with development, adolescent routines may emerge quite distinct from child or family routines, warranting separate empirical investigation.

Despite a paucity of previous research on the topic, promising research studies specific to adolescent routines are starting to emerge. For example, Fulkerson and colleagues (2006) investigated the importance of adolescents' daily routines on family meal engagement. The authors indicated that endorsement of frequent, structured family meals was associated with greater levels of communication and support in parent-adolescent relationships, as well as reduced parent-adolescent conflict and maladaptive communication. In addition to the effects of adolescent routines on communication and conflict, Larson, Dworkin, and Gillman (2001) investigated the role of daily routines on adolescents' time-management and activity-planning skills in single-parent homes. Results indicated a significant positive relationship between routines and productivity, as frequent, consistent daily routines were associated with increased planning skills and constructive use of time.

Assessment of Daily Routines

Despite a substantial literature supporting consistent daily routines and increased predictability (Pruitt, 1998; Murphy, Marelich, Herbeck, & Payne, 2009; Eisenberg, Murkoff, & Hathaway, 1996; Nelson, Erwin, & Duffy, 2007), relatively few psychometrically-sound measures of daily routines are available (Sytsma, Kelley, & Wymer, 2001). Some researchers suggest the lack of assessment tools is partially explained by the infancy of the field of psychology, as well as the field's delay in acknowledging environmental factors, such as daily

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routines, in a comprehensive explanation of emotional well-being and adjustment (Fiese, 2006; Fiese & Klein, 1993). Therefore, assessment tools evaluating daily routines remain limited. Moreover, because the majority of literature on daily routines emphasizes child and family routines (Fiese & Klein, 1993; Jensen et al., 1983), those are the demographics targeted by the few measures that are available (Kiser, Bennett, & Paavola, 2005).

Several broadband measures of adolescent psychopathology, such as the Behavior Assessment System for Children—2 (Reynolds & Kamphaus, 2004) and Achenbach scales (Achenbach & Rescorla, 2001), include items related to adolescents' functional impairment, which indirectly query aspects of daily routines. However, these items appear overly general and are typically limited to 1-2 questions. With the development of measures for child and family routines such as the Family Routines Inventory (FRI; Jensen et al., 1983), the Family Rituals Questionnaire (FRQ; Fiese & Klein, 1993), and the Child Routines Questionnaire (CRQ; Sytsma et al., 2001), further evidence is provided to suggest that adolescent routines have been overlooked and underemphasized as informative tenets of adolescents' daily functioning and warrant empirical investigation. Taken together, the potential role that daily routines play in the adjustment and well-being of adolescents is, at best, minimally understood.

Adolescent Routines Questionnaire

The Adolescent Routines Questionnaire: Parent & Self-Report (ARQ:P/S; Meyer & Kelley, 2010) is the first measure specifically designed to evaluate adolescents' daily routines. Moreover, by including self- and parent report forms, the ARQ obtains information on daily routines directly from adolescents. This is important as parents are not always aware of adolescents' routines or lack thereof. The ARQ:P/S is a 33-item scale with five factors: Daily Living, School & Discipline, Household, Extracurricular, and Social Routines. Each factor produces a subscale score in addition to the ARQ Total score. Preliminary studies indicated that

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the ARQ has good internal consistency and test-retest reliability for all factors for both the parent and self-report forms. Adequate inter-rater reliability between parent and self-report forms (r = .65) was also obtained (Meyer & Kelley, 2010).

Initial studies also evaluated the ARQ as valid. Concurrent validity of the ARQ:P/S has been established using the Family Routines Inventory (FRI; Jensen et al., 1983), Conflict Behavior Questionnaire (CBQ; Robin & Foster, 1984), Issues Checklist (Prinz, Foster, Kent, & O'Leary, 1979), and Behavior Assessment System for Children (BASC; Reynolds & Kamphaus, 2004) as criterion measures. Both the parent and self-report forms of the ARQ were positively correlated with the FRI. A moderate negative relationship was reported between parent-endorsed externalizing problems and routines on the ARQ:P. Validity data also suggested a significant negative relationship between family conflict and ARQ scores for both parents and adolescents. Given favorable initial psychometric data available for the ARQ, further investigation of its utility is warranted; specifically, demonstration of the measure's utility in diagnosis, treatment implementation, and progress monitoring with clinical populations (Meyer & Kelley, 2010).

Attention-Deficit/Hyperactivity Disorder & Daily Routines

Attention-Deficit/Hyperactivity Disorder affects roughly 3-7 percent of children, which renders the externalizing condition the most prevalent mental health disorder of childhood (APA, 2000; Barkley, 1998). A more recent study conducted by Froehlich and colleagues (2007) purport that students have at least a 7.5 percent chance of being diagnosed with some level of attentional deficit between preschool and high school graduation. According to the National Institute of Mental Health (NIMH; 2007), approximately 70-80 percent of individuals who were treated for ADHD during childhood continue to require medicinal and/or behaviorally-based treatment into adolescence, indicating the impact of this disorder in an adolescent population.

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Children and adolescents diagnosed with ADHD frequently have difficulty with self-control, organization, and time management skills that contribute to academic, behavioral, and social problems (Barkley, 2003; Coghill et al., 2008). Barkley (1998; 2003) has characterized ADHD as a disorder of behavioral inhibition, where there appears to be an impairing inability for the individual to regulate their behavior. Poor behavior regulation has been associated with numerous secondary deficits in children: difficulty sustaining attention during mental tasks, poor work completion, inability to plan events, difficulty with sequential problem solving, and impaired transitions between daily activities (Mash & Barkley, 2003; Barkley, 1998). Social factors have been found to moderate the type and severity of impairment associated with ADHD, as well as the risk for additional comorbid externalizing disorders. Furthermore, individuals diagnosed with ADHD have been shown to encode fewer social cues (Matthys, Cuperus, & van Engelan, 1999), resulting in comorbid relationship problems and awkward social interactions. Previous research has demonstrated a relationship between ADHD and parental stress, which is associated with greater parent-child conflict and negative communication (Fischer, 1990).

The importance of structured routines is frequently reported as essential to the management of ADHD symptoms and related behavior in children (Mash & Barkley, 2003; Barkley, 1998; NIMH, 2007; Hammerness, 2008). The National Institute of Health (1996; 2008), for example, recommends implementing routines as an effective tool for managing children with ADHD. Studies comparing parenting practices of mothers of children with and without ADHD conclude that fewer daily routines are implemented by mothers of ADHD children (Sytsma-Jordan, Kelley, & Henderson 2002). This finding is concerning given that establishing rules and structured routines is particularly beneficial for children with ADHD. Daily routines assist children in the development of appropriate self-control and time management skills by establishing a stable, scheduled sequence of events, such as regular

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bedtime, mealtime, and morning routines (Barkley, 1998). Increased routine and structure have been shown to reduce instances of noncompliance in children with ADHD (Sytsma-Jordan, Kelley, & Henderson, 2002).

Despite the benefits of establishing daily routines in the lives of ADHD children, the role of increased daily routines in adolescents diagnosed with ADHD remains unclear (Coghill et al., 2006). Changes in ADHD symptom presentation from childhood to adolescence prohibit generalization of benefits noted in ADHD children to adolescents (Mash & Barkley, 2003). Hyperactive symptoms become less externally prominent during adolescence, while internal processes (i.e., mental planning, focused thought, etc.) become increasingly overactive. In addition, ADHD adolescents demonstrate reduced nonverbal working memory, manifested by symptoms such as difficulty remaining on task, difficulty with organized and strategic problem-solving and increased disruption in schoolwork and chore completion (Weiss & Hechtman, 1993). Moreover, Robin (1998) reports that teenagers with ADHD suffer numerous negative outcomes relative to their ADHD symptoms: academic failure, social isolation, depression, and lower self-esteem. ADHD adolescents also report lower quality of life than same-age, healthy peers (Robin, 1998).

Given the substantial negative outcomes and challenges faced by adolescents diagnosed with ADHD, several recent studies have included adolescent samples in their examination of the relationship between routines and various externalizing disorders. For example, Coghill et al. (2008) compared the daily activities, general behavior, and family relationships of both ADHD and non-ADHD children and adolescents (6-18 yrs). Results indicated that ADHD children and adolescents experienced greater interruptions to normal, everyday activities when compared to non-clinical peers. ADHD children and adolescents also reported greater family conflict and negative communication with parents when compared to a control sample (Coghill et al., 2008).

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Similarly, Kiser and colleagues (2005) investigated the relationship between family routines and broad adolescent psychopathology, including ADHD symptoms. Authors concluded that adolescents diagnosed with internalizing and externalizing disorders endorse significantly fewer family routines compared to a psychologically healthy comparison sample (Kiser, Bennett, & Paavola, 2005). While both of these studies mark significant contributions to research on adolescent routines within an ADHD population, adolescent routines were not targeted specifically, and ADHD symptoms were not isolated from global psychopathology.

Other empirical investigations have suggested that the homework problems exhibited by ADHD adolescents appear to be mitigated by increased structure and routine in a similar manner to those of ADHD children. Robin (1998), for example, recommends consistent homework routines for ADHD adolescents in order to reduce the ongoing distress and poor performance produced by daily homework. Meyer and Kelley (2007) examined the effects of increased study skills routines and self- vs. parent-monitoring techniques in a sample of ADHD adolescents exhibiting significant homework problems. The authors concluded that increased routines and monitoring reduced homework problems and improved rates of homework completion in ADHD adolescents.

Hammerness (2008), in a literature review discussing the challenges associated with ADHD during adolescence, addressed ADHD adolescents' problematic adherence to stimulant medication, and offered dosing options that maximize optimal adherence based on adolescents' daily routines and schedules. According to Hammerness, increasing structure in adolescents' daily activities potentially augments the efficacy of medication adherence by systematically organizing daytime events to allow for accurate and effective medication dosing. Hammerness purports daytime activities become more important during adolescence given increases in academic work load, social and extracurricular activities, and attempted independence during

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this developmental period. By promoting the establishment of predictable events with ADHD adolescents, parents are reportedly optimizing the chances that stimulant medication will optimally alleviate ADHD symptoms. Hammerness also acknowledges the lack of assessment tools for measuring adolescents' routines. While he offers suggestions for increasing consistency and routine, psychometrically-sound methods of assessing daily routines and activities are clearly warranted.

Summary

The immense value of implementing predictable daily routines into the lives of children has been empirically supported (Jacobs & Fiese, 2007; Mellin, Neumark-Sztainer, Patterson, & Sockalosky, 2004; Buchblinder, Longhofer, & McCue, 2009). Research suggests that ADHD children, who are typically disorganized, noncompliant, and unequipped to manage transitions, respond particularly favorably to the predictability and structure offered by consistent daily routines (Pruitt, 1998; Schipani, 2007). Moreover, increased routine is frequently described as a first course of intervention in comprehensive treatment packages for ADHD children (Adams & Rickerts, 1989; Baumann, Reiss, Rogers, & Bailey, 1983; Dadds, Sanders, & Bor, 1984). Specifically, increased predictability promotes development of self-control skills required in smooth long- and short-term transitions, which then facilitate appropriate academic and behavior performance (Barkley, 1998, 2003). Given the noted benefits of establishing daily routines, a moderate literature exist introducing psychometrically sound instruments that examine individual child routines as well as more global family activities (Jensen et al., 1983; Fiese & Klein, 1993; Sytsma et al., 2001).

While increased daily routines are frequently recommended for ADHD children, Sytsma-Jordan, Kelley, and Henderson (2008) note that ADHD children and their parents report significantly fewer established daily routines than a comparison group of healthy children and

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their parents. These results indicate that ADHD children, who are in most need of consistent routines, are the ones least likely to be implementing them.

Despite empirical support for implementing child and family routines, particularly with ADHD children, the role of routines in the adjustment of adolescents remains unclear (Kiser et al., 2005; Coghill et al., 2008). A small number of studies on child and family routines recently included adolescents, but specific measures of adolescent routines remain largely unavailable. This is particularly concerning given the research indicating negative outcomes for ADHD adolescents.

The development of the ARQ:P/S (Meyer & Kelley, 2010) marks the first attempt to assess daily routines of adolescents uniquely. Although initial studies suggest that the ARQ is a psychometrically sound scale for assessing adolescents' daily routines, further exploration of the ARQ's clinical utility with adolescents with varying psychological disorders is warranted.

Present Study

Rationale. Previous research has demonstrated that children diagnosed with ADHD and their caregivers endorse significantly fewer daily routines than healthy, non-clinical children and caregivers. However, daily routines are consistently recommended as first course treatment for children diagnosed with ADHD, as predictable routines increase organization and structure that is typically deficient in the daily lives of these children. As ADHD children transition into adolescence, however, the continued benefits of routines become less clear, as the daily routines of adolescents are significantly underemphasized in the literature. Assessment of whether or not ADHD adolescents and their caregivers endorse fewer daily routines than healthy peers is warranted given that this trend was reported in ADHD children. Implementing consistent routines potentially offers adolescents, particularly those with ADHD, similar positive outcomes to those described in children.

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Objective. The goals of the current study were to assess whether adolescents diagnosed with ADHD endorse significantly fewer daily routines than non-clinical adolescents, and to provide evidence for the clinical utility of the ARQ in the diagnosis and treatment of ADHD adolescents. Adolescents who met full *DSM-IV-TR* (APA, 2000) ADHD diagnostic criteria, and one of their caregivers, were included in an ADHD group and were compared to a demographically similar sample of healthy, control adolescents. Daily routines, externalizing behavior problems, and parent-adolescent conflict were reported by both parent and youth responses. The relationships between daily routines, ADHD symptom severity, and parent-adolescent conflict were examined. In addition, daily routines were compared across the clinical and non-clinical groups. The ARQ's ability to predict severity of ADHD symptoms, and its potential utility as a treatment outcome measure in studies involving adolescent behavior modification or parent-adolescent communication training were also addressed.

Hypotheses. To examine frequency differences in daily routines for ADHD vs. non-ADHD adolescents and to provide evidence for the clinical utility of the ARQ:P/S, the following specific hypotheses were tested:

1. **Hypothesis:** Across parent- and adolescent- informants, adolescents' daily routines, as indicated by ARQ Total scores, will demonstrate a significantly negative relationship with severity of ADHD symptoms, as indicated by Conners 3 ADHD Index scores, such that more daily routines will be associated with less severe ADHD symptoms. This relationship will be detected in both the ADHD and non-ADHD group.
2. **Hypothesis:** Across parent- and adolescent- informants, parent-adolescent conflict as measured by CBQ scores will demonstrate a significantly positive relationship with ADHD symptom severity, as indicated by Conners 3 ADHD Index scores, such that

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greater parent-adolescent conflict will be associated with more severe ADHD symptoms. This relationship will be observed for both the ADHD and non-ADHD group.

3. **Hypothesis:** Adolescents diagnosed with ADHD and their parents will endorse significantly fewer daily routines than a control sample of healthy adolescents and their parents, as determined by ARQ Total mean comparisons of ADHD and non-ADHD adolescents and their parents.
4. **Hypothesis:** Adolescents diagnosed with ADHD and their parents will endorse significantly greater levels of parent-adolescent conflict than a control sample of healthy adolescents and their parents, as determined by CBQ mean comparisons of ADHD and non-ADHD adolescents and their parents.
5. **Hypothesis:** Frequency of adolescent daily routines, represented by ARQ Total scores of parent- and adolescent-informants, will accurately classify adolescents into the ADHD or non-ADHD group at higher than chance levels.
6. **Hypothesis:** Adolescent daily routines, represented by ARQ Total scores of parent- and adolescent-informants, will significantly predict severity of adolescents' ADHD symptoms, as indicated by parent- and adolescent-reported Conners 3 ADHD Index scores, when hierarchical regression analyses are conducted.

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METHOD

Participants

An a priori power analysis using *GPower 3.1* (Erdfelder, Faul, & Buchner, 1996) was conducted to determine the minimum sample size required to obtain a moderate effect size, with power specified as .80. Results indicated a minimum sample size of 77. Accordingly, participants included 95 adolescents (58.9% male, 41.1% female) between the ages of 12 and 17 years (M = 14.12, SD = 1.64) and one of their primary caregivers (93 mothers, 2 fathers), recruited from: 1) a private, medical outpatient clinic predominately serving middle and upper income Caucasian families and 2) several private psychology practices specializing in child and adolescent mental health and serving multi-racial, multi-SES families in southern Louisiana. The total sample represented diverse racial backgrounds (77.9% Caucasian, 17.9% African-American, 4.2% Hispanic) and varying levels of socioeconomic status (SES), as established by Hollingshead's (1975) four-factor index [Class I (6.4%), Class II (12.7%), Class III (40.3%), Class IV (34.5%), & Class V (6.1%)].

ADHD Group. Approximately one-third of adolescents (n = 27) were referred to private practitioners for an ADHD evaluation based on parent, teacher, or pediatrician concerns about ADHD or other externalizing symptoms. ADHD group adolescents were consecutively sampled from private practice waitlists containing parent-initiated referrals. Each practice's office staff maintained and managed a separate waitlist that only contained ADHD referrals. Office staff contacted caregivers by telephone to schedule intake sessions. In order to be included in the ADHD group, adolescents 1) were between the ages of 12 and 17 years-old, 2) were referred for psychological evaluation due to inattention and/or impulsivity, 3) met full diagnostic criteria for ADHD based on clinical interviews, 4) were not currently participating in parent training or behavior modification treatment for ADHD, and 5) reported no previous diagnoses of pervasive

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developmental disorders or cognitive impairment. Separate adolescent and parent diagnostic interviews served as the basis for ADHD diagnoses and were conducted by either: 1) the principal investigator (doctoral-level advanced graduate student in child clinical psychology) under direct supervision of a doctorate-level licensed clinical psychologist or 2) a doctorate-level licensed clinical psychologist. Teacher informants confirming academic impairment were unavailable due to summer vacation, but parents and adolescents were asked to elaborate on adolescents' academic performance and school conduct.

Non-ADHD Group. Approximately two-thirds of adolescents (*n* = 68) and their caregivers comprised a non-clinical, comparison sample recruited from waiting rooms of several health care facilities. Non-ADHD group adolescents 1) were between the ages of 12 and 17 years-old, 2) reported no history of diagnosis or treatment for externalizing disorders, and 3) did not endorse symptoms of ADHD, as reported by parents on a screening measure containing ADHD criteria. If parents reported 3 or fewer ADHD symptoms (scores of 0-3), the dyad was eligible for inclusion in the non-ADHD group.

Several adolescents (*n* = 4) were disqualified or determined ineligible. Three ADHD adolescents were disqualified based on their failure to attend scheduled follow-up appointments, and one additional ADHD group adolescent was determined to be ineligible due to current participation in a parent-training program. For three other ADHD group participants (*n* = 3) who currently received psychopharmacological treatment, study instructions were modified to elicit responses to questionnaires based on pre-medicated functionality and adjustment.

Measures

Demographic Questionnaire. A brief questionnaire completed by caregivers was administered to obtain general demographic information. The demographic questionnaire elicited information such as adolescent's age, gender, race, family income, parent marital status,

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and household composition. Demographic variables retained for data analysis included: adolescent gender, age, race, and household composition (see Appendix A).

Behavior Inventory. A 20-item, parent-response inventory was created for the current study to screen non-ADHD participants. The inventory ensured that non-ADHD participants were not currently exhibiting significant symptoms of ADHD, based on criteria presented in the *DSM-IV-TR* (APA, 2000). Parents were asked to place a check mark next to any statement that described their adolescent's typical behavior. Each parent check mark represented one point, and marks were summed to produce a total score. Adolescents were eligible for the non-ADHD group if a score of 3 or lower was obtained (see Appendix B).

Adolescent Routines Questionnaire: Parent & Self-Report (ARQ:P/S; Meyer & Kelley, 2010). The ARQ:P/S is a 33-item measure of adolescents' daily routines, with parallel forms for caregivers and youth. The ARQ assesses daily routines commonly endorsed by adolescents 12 to 17 years old. Caregivers and adolescents rate the frequency of various events or activities using a 5-point Likert scale ranging from 0 ("almost never") to 4 ("nearly always"). The ARQ is comprised of five factors (Daily Living, School & Discipline, Household, Social, and Extracurricular Routines), each yielding a subscale score, and the ARQ Total score (0-132) is the summation of the five subscale scores. Higher scores correspond to greater established routines. Preliminary unpublished validation results indicate that the ARQ: P/S has good internal consistency, test-retest reliability, and inter-rater reliability, and initial evidence of moderate validity (see Appendix C & D).

Conners 3 Parent- & Self-Report Form (Conners 3 PF/SR; Conners, 2008). The Conners 3 series is a standardized, reliable, valid, and frequently administered set of instruments that measure various behavioral, cognitive, and emotional symptoms, with particular emphasis on the differentiation of ADHD from other externalizing disorders in children and adolescents.

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The Conners 3 series includes both full-length and shorted formats, as well as distinct versions for parents, teachers, and youth. The Conners 3 Parent and Teacher Forms are standardized for children and adolescents ages 6-18 while the Conners 3 Self-Report is standardized for children and adolescents ages 8-18. Subscales comprising the Conners 3 Full-Length Form include: Inattention, Hyperactivity/Impulsivity, Learning Problems, Aggression, Family Relations (Self-Report Form), Peer Relations (Parent Form), as well as an optional ADHD Index score, which is comprised of 10-items that directly correspond to *DSM-IV-TR* diagnostic criteria for ADHD, and reliably discriminates between ADHD and non-clinical children and adolescents. The current study administered the Conners 3 Full-Length Parent- and Self-Report Forms, and t-scores from the Inattention and Hyperactivity/Impulsivity scales and the ADHD Index were included in analyses. Inattention and Hyperactivity/Impulsivity scale t-scores were used in descriptive analyses and between-group comparisons. The ADHD Index t-score served as the criterion variable for hierarchical regression analyses.

Conflict Behavior Questionnaire (CBQ; Prinz, Foster, Kent, & O'Leary, 1979; Robin & Foster, 1984; 1989). The Conflict Behavior Questionnaire is a 20-item true/false measure of perceived conflict between parents and adolescents, who complete identical versions of the instrument. The single summary score (0-20) serves as an estimate of a family's ongoing negative communication and conflict level. Test-retest reliability ranges from .57 to .82 for parent-report and .37 to .84 for adolescent report. The CBQ accurately discriminates between distressed and non-distressed families and has been used to monitor therapeutic progress in a number of treatment outcome studies, supporting validity of the CBQ (Robin & Foster, 1984; see Appendix E & F).

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Table 1 provides an overview of measures included in the current study, as well as the constructs assessed by each measure and function and type of variable each measure served in data analysis.

Table 1. Measure Descriptions & Variable Types

Measure	Description	Variable Type
Demographic Questionnaire	Gender (Male, Female) Age (12-17 years) Race (Caucasian, African-Am, Hispanic) Household Composition	Control
ARQ: Parent Report	Parent-reported adolescent daily routines *ARQ Total Parent score*	Predictor
ARQ: Self-Report	Adolescent-endorsed daily routines *ARQ Total Adolescent score*	Predictor
CBQ: Parent	Parent-reported dyad conflict *CBQ Total Parent score*	Predictor
CBQ: Adolescent	Adolescent-endorsed dyad conflict *CBQ Total Adolescent score*	Predictor
Conners 3: Parent Form	Parent-reported ADHD symptoms *ADHD Index score*	Criterion
Conners 3: Self-Report Form	Adolescent-endorsed ADHD symptoms *ADHD Index score*	Criterion

Parent & Adolescent Diagnostic Interviews [Adapted from *Attention Deficit Hyperactivity Disorder: A Clinical Workbook, 3rd Edition* (Barkley, 1997; Barkley & Murphy, 2005)]. The diagnostic clinical interviews for ADHD group participants were adapted from those available in Barkley's (1997) comprehensive ADHD assessment and treatment package for children and adolescents and later revisions of the workbook (Barkley & Murphy, 2005). Individual interviews were conducted with parents and adolescents of the ADHD group

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by either an advanced graduate student supervised by a licensed psychologist or a licensed psychologist, and served as the primary method of diagnosis based on parent and adolescents' responses. The interview elicited information relative to the reason the adolescent was referred (primary concern); the adolescent's developmental, medical, social, and educational history; and detailed psychological history for the adolescent, including previous diagnoses, accompanying symptoms, and current level of impairment. ADHD criteria were individually discussed, and endorsement of any symptom required elaboration from respondents in order to carefully differentiate ADHD from other externalizing disorders. Diagnoses were rendered based on guidelines set forth by *DSM-IV-TR* (APA, 2000).

Procedure

Approval to conduct the present study was granted from Louisiana State University's Institutional Review Board, and permission to access the various facilities in the community was obtained from the sites' appropriate administrators. Eligible adolescents and caregivers provided assent or consent (see Appendix G & H) prior to participating.

ADHD Group. ADHD group participants attended intake sessions conducted at private psychology offices throughout the community. Each private practice's standard "new-patient" procedures and guidelines were followed in addition to any requirement of the study. Intake sessions consisted of separate parent and adolescent interviews and the completion of questionnaires by both informants. Caregivers completed a demographic questionnaire, and both adolescents and caregivers completed respective versions of the Adolescent Routines Questionnaire, Conflict Behavior Questionnaire, and Conners 3: Full-Length Form. Within one-week following the intake session, caregivers and adolescents attended a feedback session, where a brief diagnostic report, including treatment recommendations, was discussed.

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Non-ADHD Group. Non-ADHD group adolescents and caregivers were approached in waiting rooms of large medical facilities before and after routine medical appointments. Both adolescents and caregivers were required to be present, which minimized error and attrition associated with take-home questionnaires. A brief overview of the study was orally provided, and assent and consent was obtained. Caregivers completed the Demographic Questionnaire and Non-ADHD Group Screening Inventory, and both adolescents and caregivers completed respective versions of the Adolescent Routines Questionnaire, Conflict Behavior Questionnaire, and Conners 3. Clinical interviews were not conducted with participants in the control group.

Participation in the current study was voluntary and anonymous, and no monetary incentive or other compensation was offered. All questionnaires were scored according to published or previously established scoring techniques.

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RESULTS

Demographic Data

An alpha level of .05 was used when determining statistical significance to support or reject hypotheses. Group equivalence was established by examining demographic descriptive data and comparing group means of demographic variables.

As shown in Table 2, descriptive data revealed the ADHD group was 66.7% male and 77.8% Caucasian, 14.8% African-American, and 7.2% Hispanic, with a mean age of 14.04 (*SD* = 1.58) years and household composition mean of 3.70 (*SD* = 1.06) members. The non-ADHD group was 55.9% male and 77.9% Caucasian, 19.1% African-American, and 2.9% Hispanic, with a mean age of 14.15 (*SD* = 1.67) years and household composition mean of 4.28 (*SD* = 1.37) members. Comparisons of group means for demographics revealed no significant differences between groups with respect to adolescent gender [t (93) = .96, $p > .30$], race [F (1, 93) = .15, $p > .05$], or adolescent age [t (93) = .30, $p > .70$]. Household composition [t (94) = 1.95, $p = .053$] approached significance, with an observed trend suggesting larger family units for non-ADHD group participants.

Table 2. Demographic Characteristics & Group Equivalence

Variable	**Total** (N=95)	**ADHD** (N=27)	**Non-ADHD** (N=68)	**Sig. Test**
Gender				t (93) =.96
Male	56(58.9)	18(66.7)	38(55.9)	
Female	39(41.1)	9(33.3)	30(44.1)	
Race				F (1,93)=.15
Caucasian	74(77.9)	21(77.8)	53(77.9)	
African-American	17(17.9)	4(14.8)	13(19.1)	
Hispanic	4(4.2)	2(7.4)	2(2.9)	

(table continued)

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Age	*M*=14.12(1.64)	*M*=14.04(1.58)	*M*=14.15(1.67)	*t* (93)=.30
12	21(22.1)	6(22.2)	15(22.1)	
13	16(16.8)	4(14.8)	12(17.6)	
14	20(21.1)	7(25.9)	13(19.1)	
15	18(18.9)	6(22.2)	12(17.6)	
16	9(9.5)	1(3.7)	8(11.8)	
17	11(11.6)	3(11.1)	8(11.8)	
Household	*M*=4.11(1.31)	*M*=3.70(1.06)	*M*=4.28(1.37)	*t* (94)=1.95

Note. p = non-significant for all comparisons

Bivariate Correlations

Hypothesis 1. The first hypothesis predicted that the relationship between adolescents' daily routines and severity of ADHD symptoms would be significantly negative, such that, across both adolescent- and parent-informants, adolescent routines as measured by ARQ Total scores would be negatively related to severity of ADHD symptoms, as indicated by Conners 3 ADHD Index scores. This relationship was predicted for both ADHD and non-ADHD groups, as control informants endorsed a range of ADHD symptoms despite failing to meet diagnostic criteria. Separate bivariate correlation matrices for parent- and adolescent-reported variables were produced for each group to examine this hypothesis. Results revealed non-significant correlation matrices, failing to support the prediction that daily routines would demonstrate a negative relationship with ADHD symptom severity.

Hypothesis 2. The second hypothesis described the relationship between parent-adolescent conflict and severity of ADHD symptoms, stating that, across both adolescent- and parent-informants, parent-adolescent conflict as indicated by CBQ scores would be positively related to severity of ADHD symptoms, as indicated by Conners 3 ADHD Index scores. This relationship was predicted for both ADHD and non-ADHD groups. Results of the correlation matrices revealed non-significant relationships between daily routines and ADHD symptom

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presentation for both informants across both groups, failing to support the predictions of Hypothesis 2.

Table 3. Correlation Matrix: Parent-Reported Variables by Group

	ADHD Group							Non-ADHD Group						
Variable	1	2	3	4	5	6	7	1	2	3	4	5	6	7
Gender	--	.04	.28	.12	-.03	.00	-.35	--	.03	.24*	.08	.02	-.25*	-.27*
Race		--	.07	.14	.19	.77**	.08		--	-.09	.07	-.15	-.07	-.12
Age			--	-.15	.18	-.07	-.03			--	.18	-.14	-.17	-.25*
Household				--	.16	.09	-.01				--	.03	.01	-.12
CBQ:P					--	.28	.41*					--	.09	.21
ARQ:P						--	.06						--	.28*
Conners							--							--

Note. *$p < .05$ **$p < .01$

Table 4. Correlation Matrix: Adolescent-Reported Variables by Group

	ADHD Group							Non-ADHD Group						
Variable	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**1**	**2**	**3**	**4**	**5**	**6**	**7**
Gender	--	.04	.29	.13	-.07	.11	.04	--	.03	.24*	.08	.02	-.22	.08
Race		--	-.07	.14	-.15	.64**	.00		--	-.10	-.07	-.15	.06	.17
Age			--	-.15	.21	.05	-.10			--	.18	-.14	-.03	-.02
Household				--	.14	.34	.19				--	.03	.05	-.02
CBQ:A					--	.04	-.10					--	.00	.02
ARQ:S						--	.01						--	-.17
Conners							--							--

Note. *$p < .05$ **$p < .01$

Group Mean-Comparisons

ADHD Symptom Severity. A series of *t*-tests compared ADHD and non-ADHD group performance on the Conners 3 subscales and ADHD Index. Providing further support for ADHD diagnostic accuracy, parents of the ADHD group scored significantly higher on the Inattention [t (93) = 8.4, $p < .001$] and Hyperactive/Impulsive subscales [t (93) = 8.2, $p < .001$] and ADHD Index [t (93) = 12.7, $p < .001$] compared to parents of the non-ADHD group. Adolescents in the

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ADHD group scored significantly higher on Inattention [t (93) = 5.1, $p < .001$] and Hyperactive / Impulsive subscales [t (93) = 6.1, $p < .001$] and ADHD Index [t (93) = 4.6, $p < .001$] compared to adolescents in the non-ADHD group (see Table 5), as expected based on previous diagnoses.

Hypothesis 3—Daily Routines. The third hypothesis predicted that ADHD adolescents and their parents would endorse significantly fewer daily routines than a comparison group of healthy counterparts. A series of independent samples *t*-tests were conducted to compare mean scores on the ARQ for parents and adolescents of the ADHD and non-ADHD groups. As shown in Table 5, parents of ADHD adolescents reported significantly fewer daily routines than did the parents of the comparison sample on all ARQ factors [Daily Living: t (93) = 2.4, $p < .05$; School & Discipline: t (93) = 5.6, $p < .001$; Household: t (93) = 3.4, $p < .01$; Extracurricular: t (93) = 5.3, $p < .001$; & Social: t (93) = 4.0, $p < .001$] as well as the ARQ Total [t (93) = 5.5, $p < .001$], which is represented in Figure 1.

Also presented in Table 5, regarding adolescent-reported daily routines, ADHD adolescents endorsed significantly fewer routines than non-ADHD controls on the following factors: Household [t (93) = 3.8, $p < .001$]; Extracurricular [t (93) = 2.8, $p < .01$]; and Social Routines [t (93) = 2.0, $p < .05$]; as well as the ARQ Total [t (93) = 2.8, $p < .01$]. Figure 1 depicts group differences for total daily routines for both parent- and adolescent-informants. Scores on the Daily Living and School & Discipline factors were not significantly different for adolescent informants of each group. Taken together, these results largely supported the predictions of Hypothesis 3.

Hypothesis 4—Parent-Adolescent Conflict. The fourth hypothesis predicted that ADHD adolescents and their parents would endorse greater parent-adolescent conflict than a comparison group of healthy counterparts. A series of independent samples *t*-tests were conducted to compare mean CBQ scores for parents and adolescents of the ADHD and non-

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ADHD groups. As shown in Table 5, parents of ADHD adolescents reported significantly greater levels of parent-adolescent conflict than did parents of non-ADHD adolescents [t (93) = 4.6, $p < .001$]. Likewise, adolescents in the ADHD group reported significantly greater levels of parent-adolescent conflict than did adolescents in the non-ADHD group [t (93) = 3.9, $p < .001$]. Therefore, Hypothesis 4 was fully supported by the series of t-tests comparing means, and group means for routines and conflict are presented in Figure 1.

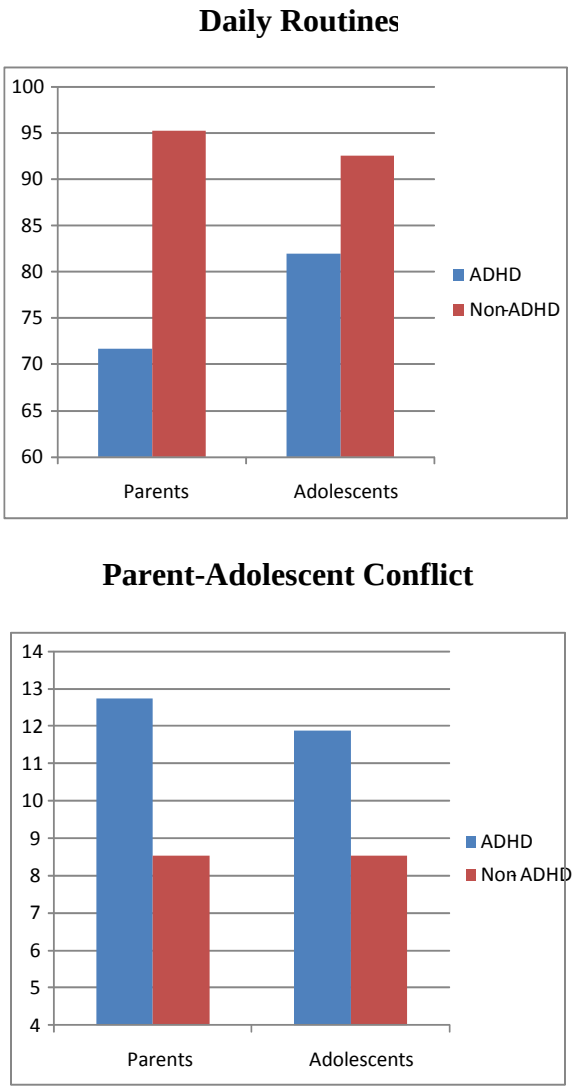

Figure 1. Daily Routines & Parent-Adolescent Conflict by Group & Informant

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Table 5. Mean-Comparisons by Group

Variable	ADHD *M*	ADHD *SD*	Non-ADHD *M*	Non-ADHD *SD*	Significance *t* (93)
Parent—					
ARQ:PR					
Total	71.67	21.30	95.24	17.61	5.5***
Daily Living	22.26	8.84	26.43	7.21	2.4*
School & Discipline	16.96	5.89	24.37	5.28	5.6***
Household	11.52	4.78	15.04	4.38	3.4**
Extracurricular	12.00	4.46	17.29	4.26	5.3***
Social	8.93	3.56	12.10	3.36	4.0***
CBQ:P	12.74	4.02	8.53	3.97	4.6***
Conners 3					
Inattentive	68.41	9.93	49.81	9.65	8.4***
Hyperactive/Imp.	69.89	10.80	52.15	8.95	8.2***
ADHD Index	70.02	6.70	52.40	8.38	12.7***
Adolescent—					
ARQ:SR					
Total	82.00	17.67	92.56	15.90	2.8**
Daily Living	26.15	8.48	29.44	6.89	1.9
School & Discipline	20.96	6.17	20.47	6.10	.4
Household	10.22	4.25	13.76	3.99	3.8***
Extracurricular	14.70	4.89	17.43	3.95	2.8**
Social	9.96	3.55	11.46	3.06	2.0*
CBQ:A	11.89	3.47	8.53	3.98	3.9***
Conners 3					
Inattentive	62.44	10.07	52.15	8.45	5.1***
Hyperactive/Imp.	66.63	7.38	53.19	10.43	6.1***
ADHD Index	67.37	6.98	56.32	11.80	4.6***

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

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Discriminant Function Analyses—Hypothesis 5

The current study hypothesized that the frequency of adolescents' daily routines, as reported by parents and adolescents on the ARQ, would accurately discriminate between ADHD adolescents and non-ADHD, healthy controls. Separate discriminant analyses were conducted for each informant, with ARQ Total scores as the independent variable and ADHD vs. Non-ADHD (group membership) as the criterion variable for both analyses. Regarding parent-reported daily routines, the discriminant function revealed a significant association between group membership and ARQ Total parent scores [$\chi^2(1) = 26.3$, $p < .001$], and the classification results concluded that 81.1% of adolescents were correctly classified based on parent ARQ scores, as shown in Table 6.

Regarding adolescent-reported daily routines, the discriminant function analysis revealed a significant association between group membership and ARQ Total adolescent scores [$\chi^2(1) = 7.6$, $p < .01$], and the classification results concluded that 70.5% of adolescents were correctly classified based on their self-report ARQ scores, as shown in Table 7. Therefore, the discriminant function analyses supported the predictions of Hypothesis 5.

Table 6. Classification Table: Parent ARQ Scores

	Predicted Group		**Percentage Correct**
	Non-ADHD	**ADHD**	
Non-ADHD Group	60	8	88.2
ADHD Group	10	17	63.0
Total			81.1

Table 7. Classification Table: Adolescent ARQ Scores

	Predicted Group		**Percentage Correct**
	Non-ADHD	**ADHD**	
Non-ADHD Group	65	3	95.6
ADHD Group	25	2	7.4
Total			70.5

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Hierarchical Regression Analyses—Hypothesis 6

Hierarchical multiple regression analyses were conducted to explore whether demographics (adolescent gender, age, race, and household composition), negative communication/conflict, and daily routines serve as predictors of adolescent ADHD symptom presentation. More specifically, the proportion of unique variance explained by assessing daily routines was examined to investigate the clinical utility of the ARQ. Separate regression analyses were conducted for parent- and adolescent-reported variables, and demographic variables were entered in Step 1for both. Step 2 contained the addition of CBQ scores, and ARQ Total scores were entered on Step 3. Conners 3: ADHD Index scores served as the criterion variable in both regression analyses.

The final hypothesis postulated that adolescents' daily routines would significantly predict variance in ADHD symptom severity when controlling for demographic variables. The first regression analysis was conducted to determine whether parent-reported daily routines, as assessed by ARQ Total scores, and parent-adolescent conflict, as assessed by CBQ scores, predicted ADHD symptom severity after controlling for demographic variables. As shown in Table 8, the results indicated significant predictors at each step of the analysis. Parent-adolescent conflict [F (1, 89) = 29.00, $p < .001$] and daily routines [F (1, 88) = 9.42, $p < .01$], as reported by parents, were significant predictors of ADHD symptom severity, and together accounted for 39% of the variance.

Regarding adolescent-informant regression analyses, neither demographic variables [F (4, 90) = .62, $p > .05$] nor parent-adolescent conflict [F (1, 89) = 2.85, $p > .05$] were significant predictors of ADHD symptom severity. However, fewer adolescent routines significantly predicted [F (1, 89) = 6.16, $p < .05$] ADHD symptom severity and accounted for 12% of the variance (see Table 9).

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Table 8. Hierarchical Regression: Parent-Reported Variables

Block	*B*	SE *B*	*β*
Step 1			
Gender	-5.77	2.75	-.22*
Race	.26	2.48	.01
Age	-.55	.83	-.07
Household	-1.84	1.01	-.18
Step 2			
CBQ:P	1.40	.26	.47***
Step 3			
ARQ:PR	-.16	.05	-.27**

Note. R^2 = .10* for Step 1; ΔR^2 = .22*** for Step 2; ΔR^2 = .07** for Step 3.
***p < .001 **p < .01 *p < .05.

Table 9. Hierarchical Regression: Adolescent-Reported Variables

Block	*B*	SE *B*	*β*
Step 1			
Gender	.89	2.56	.04
Race	3.01	2.31	.14
Age	-.26	.77	-.04
Household	-.76	.93	-.09
Step 2			
CBQ:A	.50	.29	.18
Step 3			
ARQ:SR	-.18	.07	-.26*

Note. R^2 = .03 for Step 1; ΔR^2 = .03 for Step 2; ΔR^2 = .06* for Step 3.
*p < .05.

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DISCUSSION

The purpose of the present study was to examine the clinical utility of the Adolescent Routines Questionnaire by comparing daily routines of ADHD and non-ADHD adolescents. Given previous studies suggesting that ADHD children typically report fewer daily routines than healthy peers, the current study sought to identify whether similar discrepancies are observed in adolescents. Moreover, the present study sought to investigate the role that daily routines play in the symptom presentation of ADHD adolescents. An additional aim was to demonstrate the importance of understanding and assessing adolescents' daily routines, which have been underemphasized in the literature. This study represented the first attempt to examine the clinical utility of the Adolescent Routines Questionnaire, the first measure of adolescent daily routines, by comparing the frequency of daily routines in a sample of ADHD versus non-ADHD adolescents and their caregivers. Results of the current study indicated several significant findings and generally supported the proposed hypotheses. Across parent- and adolescent-informants, fewer reported daily routines were associated with increased ADHD symptom severity, and established daily routines were endorsed significantly less frequently in the ADHD group compared to controls. ADHD adolescents and their parents also endorsed significantly greater levels of parent-adolescent conflict than non-ADHD participants. For parent-informants, a significant positive relationship between parent-adolescent conflict and ADHD symptom severity was observed, such that increased parent-adolescent conflict was associated with more severe ADHD symptom presentation. Finally, regression analyses with controlled demographic variables revealed that adolescent daily routines and parent-adolescent conflict, in combination, significantly predicted ADHD symptom severity in adolescents when only parent-reported variables were included. When adolescent-reported variables were included in regression analyses, only daily routines significantly predicted ADHD symptom severity.

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Results of the current study provided support for the clinical utility of the ARQ and reiterated the importance of assessing daily routines in adolescents. Specifically, the ARQ:P, in combination with parent-adolescent conflict, was clinically useful for predicting adolescent impairment associated with ADHD. These results indicate that by assessing parent-reported daily routines in adolescents with the ARQ:P, information on functional impairment associated with ADHD symptoms is revealed. Moreover, the ARQ:S was also clinically useful for predicting adolescent impairment associated with ADHD, although to a lesser degree than observed for parents. These results indicate that by assessing adolescent daily routines with the ARQ:S, information on functional impairment associated with ADHD symptoms is also revealed.

In general, results demonstrated weaker relationships among constructs and fewer significant differences between groups for adolescent-informants compared to parents. For example, adolescent-reported ARQ scores for Daily Living and School & Discipline factors were not significantly different for ADHD and non-ADHD adolescents, and scores obtained on other ARQ factors demonstrated weaker significance for adolescent-reports than for parents. However, these results are consistent with initial psychometrics provided by the ARQ's author, who indicates the ARQ:S is generally less reliable and valid than the ARQ:P.

The significant relationship between adolescent daily routines and ADHD diagnoses and, specifically, the finding that ADHD adolescents established fewer daily routines than non-ADHD peers, is consistent with similar research previously conducted on childhood routines (Sytsma-Jordan & Kelley, 2004; Sytsma-Jordan, Kelley, & Henderson, 2002; Barkley, 2008). Literature suggests that consistent daily routines established during childhood promote the development of self-control, security, and smoother transitions, which are integral to children's daily functioning and adjustment (Curtis, 2000; Barkley, 2003). Children diagnosed with

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ADHD, on the other hand, demonstrate marked impairments in time management, organization, and task transition, and research indicates they exhibit fewer consistent routines than healthy same-aged peers (Sytsma-Jordan & Kelley, 2004). Therefore, the same deficiency in daily routines that is present in ADHD children continues to manifest during adolescence. This notion makes sense given that daily routines likely do not spontaneously appear between childhood and adolescence without environmental accommodation to ensure it.

ADHD children have also been shown to respond especially favorably to the predictability and structure offered by consistent daily routines (Pruitt, 1998; Schipani, 2007). Academic achievement, adherence to medical treatment, increased physical health, and reduced noncompliance are documented functional domains in childhood that have benefited from increased routines. Given that ADHD adolescents continue to exhibit many of the same impairments present during childhood, it is recommended that increased daily routines remain a crucial component of comprehensive treatment of ADHD adolescents (Adams & Rickerts, 1989; Baumann, Reiss, Rogers, & Bailey, 1983; Dadds, Sanders, & Bor, 1984).

Results of the current investigation also have implications for treatment of ADHD adolescents as well as treatment outcome research. The conclusions suggest that the very individuals who would benefit most from increased daily predictability and organization skills are the ones experiencing daily routines the least. Therefore, it appears that parent training programs should not only recommend increased daily routines for ADHD adolescents but should instruct parents on how to implement these routines. Moreover, routines should be frequently assessed to examine adherence to the recommendation. In other words, the idea of increasing daily routines to manage behavior problems does not appear to be intuitive to parents, demonstrating the need for increased explanation with frequent assessment of daily routines in treatment of adolescent ADHD.

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In addition to parent training programs, the assessment of daily routines has other treatment implications. Previous research has suggested that adolescence is accompanied by increased daily demands and longer periods of required concentration (Faraone, Biederman, & Monuteaux, 2002; Robin, 1998). Therefore, adolescents diagnosed with ADHD in particular experience marked decreases in academic performance and inability to manage daily demands. Coincidently, adherence to psychopharmacologic treatment for ADHD is poorest during adolescence (Hammerness, 2008). Recent studies have suggested that by assessing and understanding frequency and types of daily routines established in ADHD adolescents, prediction of potential success with psychopharmacologic treatment could be estimated, which may have secondary benefits such as providing physicians with useful dosing information when offering medicinal treatment (i.e. "qd" vs. "tid" dosing; Robin, 1998; Hammerness, 2008). The potential utility of understanding daily routines relative to ADHD medication adherence for adolescents not only emphasizes the important role that routines play in the daily lives of ADHD adolescents, but also reiterates the benefits of developing psychometrically sound assessment tools capable of quantifying this construct, such as the clinically useful ARQ:P/S.

Among the strengths of this study was the use of a clinical sample of ADHD adolescents whose diagnoses were verified through multiple methods including semi-structured interviews with adolescents and parents, conducted by experienced and well-trained mental health providers. In addition, self- and parent-report questionnaires were completed in the presence of investigators, potentially minimizing threats to reliability from take-home questionnaires.

Despite the strengths of the study, several limitations are noteworthy. Lack of teacher informants during ADHD evaluations limited accuracy of adolescents' academic impairment. Both teacher- and parent-reported symptoms and relative impairment are ideal when evaluating criteria for ADHD. Other limitations of this study include the cross-sectional design, and the

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correlational nature of the findings. Issues related to methodology and design of the study fail to negate the alternative possibility that infrequent or deficient routines are a result of, rather than a predictor of, levels of severity of ADHD symptoms. However, these relative limitations should be permissible given the current study's purpose of exploring poorly understood constructs.

Future research conducted on the ARQ should re-examine the factor structure of the self-report version and refine the measure using a larger validation sample. Also, it would be useful to incorporate the ARQ into treatment outcome studies involving adolescent behavior modification to assess the measure's sensitivity to treatment effects. Future studies should aim to use more complex research designs to disambiguate the direction of the relationship between daily routines and ADHD symptom severity. For example, studies to disseminate whether deficient daily routines contribute to ADHD symptom exacerbation or function as sequelae of already severe ADHD symptoms would be particularly useful.

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APPENDIX A

DEMOGRAPHIC QUESTIONNAIRE

This form is to be ***completed by a parent or primary caregivers*** of adolescents between ages 12 and 17 years.

PART 1: PARENT INFORMATION
Please carefully complete the following background information about yourself and your spouse.

Your Age: _____ years.

Race:
_____ White
_____ Black
_____ Hispanic
_____ Asian
_____ Native American
_____ Pacific Islander
_____ Other_____.

Marital Status:
_____ Never Married
_____ Married
_____ Separated
_____ Divorced
_____ Widowed

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

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

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

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

_____ $0 -- $ 4,999
_____ $ 5,000 -- $ 9,999
_____ $10,000 – $14,999
_____ $15,000 -- $24,999
_____ $25,000 -- $34,999
_____ $35,000 -- $49,999
_____ $50,000 -- $74,999
_____ $75,000 -- $99,999
_____ $100,000 and above

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Occupation: Please provide you and your spouse's job title, NOT the name of your employer/company. If retired, please state "retired" as well as your prior occupation. If you do not work outside of the home, state "unemployed". BE SPECIFIC. (Ex. "High school teacher")

Your occupation: _____ Your spouse's:_____

Family:
How many adults live in your household (including yourself)_____
How many children/adolescents live in your household_____

PART 2: YOUR CHILD'S INFORMATION:
Please answer the following questions regarding your child who is participating in this study.

Child's Age _____ Child's Gender? _____ Girl _____ Boy

Child's Initials _____ Is your child in school: _____Yes _____No
If Yes, which Grade_____

PART 3: YOU AN YOUR CHILD'S HEALTH INFORMATION

1. Have you been diagnosed with a **chronic health condition** (i.e., high blood pressure, diabetes, etc.)?

   No_____ Yes_____ If yes, please list_____

2. Has your child/adolescent been diagnosed with a **chronic health condition** (asthma, diabetes, etc.)?

   No_____ Yes_____ If yes, please list_____

3. Have you been diagnosed with any **mental health** condition, including ADHD?

   No_____ Yes_____ If yes, please list_____

4. Has your child/adolescent been diagnosed with any **mental health** condition, including ADHD?

   No_____ Yes_____ If yes, please list_____

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APPENDIX B

BEHAVIOR INVENTORY

<u>Directions</u>: Please complete the following brief questionnaire about your adolescent. Read each statement and place a check next to items that accurately describe your adolescent on a typical basis.

_____ My adolescent does not finish tasks or jobs that I give him/her to do.

_____ My adolescent does not listen to me, or does not pay attention to me when I'm talking.

_____ My adolescent daydreams a lot.

_____ We are always looking for things that my adolescent has misplaced or lost.

_____ My adolescent has problems concentrating on tasks that are difficult or boring.

_____ My adolescent jumps from one activity to another, more so than his/her friends.

_____ My adolescent is easily distracted.

_____ It takes my adolescent 2 hours to finish what should be 20-minutes of homework.

_____ My adolescent often acts before thinking, or before considering the consequences.

_____ My adolescent quickly changes from one activity to another--more than others his/her age.

_____ My adolescent has trouble doing homework and/or turning it in.

_____ My adolescent needs a lot of supervision.

_____ My adolescent seems to be in trouble with us or other adults very often.

_____ My adolescent interrupts others, or blurts out comments at inappropriate times.

_____ My adolescent has trouble with waiting, like waiting in a line or waiting for other people.

_____ My adolescent has a lot of energy compared to others his/her age.

_____ My adolescent runs or climbs on things a lot, more than other adolescents his/her age.

_____ My adolescent has difficulty staying seated, like at the dinner table or during a movie.

_____ My adolescent seems to be constantly moving and fidgeting a lot. .

_____ My adolescent is always "on the go" and at times seems to be "driven by a motor."

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APPENDIX C

ADOLESCENT ROUTINES QUESTIONNAIRE: PARENT REPORT

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

My Adolescent…	How often does it occur? 0 = Never 1 = Rarely 2 = Sometimes 3 = Often 4 = Nearly Always
1. Wakes up at the same time	0 1 2 3 4
2. Gets dressed in a timely manner	0 1 2 3 4
3. Washes his/her face	0 1 2 3 4
4. Brushes his/her teeth	0 1 2 3 4
5. Brushes/fixes his/her hair	0 1 2 3 4
6. Showers, bathes, and/or washes hands and face daily	0 1 2 3 4
7. Uses deodorant	0 1 2 3 4
8. Leaves for school at the same time	0 1 2 3 4
9. Eats a snack after school	0 1 2 3 4
10. Spends time with friends on weekdays (i.e., at or after school)	0 1 2 3 4
11. Completes homework in the same place (such as the dinner table) & time	0 1 2 3 4
12. Studies/reviews for tests	0 1 2 3 4
13. Organizes things for the next day	0 1 2 3 4
14. Uses the computer	0 1 2 3 4

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15. Spends time outside	0 1 2 3 4
16. Prays/says blessing before meals	0 1 2 3 4
17. Eats dinner with family at dinner table	0 1 2 3 4
18. Completes chores regularly (e.g. washes dishes, cleans room, mows the lawn)	0 1 2 3 4
19. Talks with family about his/her day	0 1 2 3 4
20. Goes to bed at the same time	0 1 2 3 4
21. Talks to friends on the phone	0 1 2 3 4
22. Participates in sports	0 1 2 3 4
23. Participates in extracurricular activities	0 1 2 3 4
24. Attends after school activities (e.g., sporting events, dances, etc.)	0 1 2 3 4
25. Spends time with friends on the weekend (e.g., hanging out, going to movies, etc.)	0 1 2 3 4
26. Spends time doing fun activities with family	0 1 2 3 4
27. Exercises regularly	0 1 2 3 4
28. Attends church	0 1 2 3 4
29. Asks for permission before going somewhere	0 1 2 3 4
30. Is told what time to be home	0 1 2 3 4
31. Reminds parents before leaving home for school or other activities	0 1 2 3 4
32. Uses good manners	0 1 2 3 4
33. Has specific and consistent consequences for misbehavior (e.g., remove computer, grounded)	0 1 2 3 4

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APPENDIX D

ADOLESCENT ROUTINES QUESTIONNAIRE: SELF-REPORT

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

I…	How often does it occur? 0 = Never 1 = Rarely 2 = Sometimes 3 = Often 4 = Nearly Always
1. Wake up at the same time	0 1 2 3 4
2. Get dressed in a timely manner	0 1 2 3 4
3. Wash my face	0 1 2 3 4
4. Brush my teeth	0 1 2 3 4
5. Brush/fix my hair	0 1 2 3 4
6. Shower, bathe, and/or wash my hands and face daily	0 1 2 3 4
7. Use deodorant	0 1 2 3 4
9. Leave for school at the same time	0 1 2 3 4
9. Eat a snack after school	0 1 2 3 4
10. Spend time with friends on week days (i.e., at or after school)	0 1 2 3 4
11. Complete homework in the same place (such as the dinner table) & time	0 1 2 3 4
12. Study/review for tests	0 1 2 3 4
13. Organize my things for the next day	0 1 2 3 4
14. Use the computer	0 1 2 3 4

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15. Spend time outside	0 1 2 3 4
16. Pray/say blessing before meals	0 1 2 3 4
17. Eat dinner with family at dinner table	0 1 2 3 4
18. Complete chores regularly (e.g. wash dishes, clean my room, mow the lawn)	0 1 2 3 4
19. Talk with my family about my day	0 1 2 3 4
20. Go to bed at the same time	0 1 2 3 4
21. Talk to my friends on the phone	0 1 2 3 4
22. Participate in sports	0 1 2 3 4
23. Participate in extracurricular activities	0 1 2 3 4
24. Attend after school activities (e.g., sporting events, dances, etc.)	0 1 2 3 4
25. Spend time with friends on the weekend (e.g., hang out, go to movies, etc.)	0 1 2 3 4
26 .Spend time doing fun activities with my family	0 1 2 3 4
27. Exercise regularly	0 1 2 3 4
28. Attend church	0 1 2 3 4
29. Ask for permission before going somewhere	0 1 2 3 4
30. Get told by my parents what time to be home	0 1 2 3 4
31. Remind my parents before I leave home for school or other activities	0 1 2 3 4
32. Use good manners	0 1 2 3 4
33. Have specific and consistent consequences for misbehavior (e.g., remove computer, grounded)	0 1 2 3 4

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APPENDIX E

CONFLICT BEHAVIOR QUESTIONNAIRE: PARENT

You are the child's: ___mom ___ dad (check one). Your child is ___male ___female & ___ yrs old.

*Read the statements below & circle **true or false.** Answers will not be disclosed to your child.*

1. My child is easy to get along with	**True**	**False**
2. My child is receptive to criticism.	**True**	**False**
3. My child is well behaved in our discussions.	**True**	**False**
4. For the most part, my child likes to talk to me.	**True**	**False**
5. We almost never seem to agree.	**True**	**False**
6. My child usually listens to what I tell him/her.	**True**	**False**
7. At least three times a week, we get angry at each other.	**True**	**False**
8. My child says that I have no consideration of his/her feelings.	**True**	**False**
9. My child and I compromise during arguments.	**True**	**False**
10. My child often doesn't do what I ask.	**True**	**False**
11. The talks we have are frustrating.	**True**	**False**
12. My child often seems angry at me.	**True**	**False**
13. My child acts impatient when I talk.	**True**	**False**
14. In general, I don't think we get along very well.	**True**	**False**
15. My child almost never understands my side of an argument.	**True**	**False**
16. My child and I have big arguments about little things.	**True**	**False**
17. My child is defensive when I talk to him/her.	**True**	**False**
18. My child thinks my opinions don't count.	**True**	**False**
19. We argue a lot about rules.	**True**	**False**
20. My child tells me s/he thinks I am unfair.	**True**	**False**

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APPENDIX F

CONFLICT BEHAVIOR QUESTIONNAIRE: ADOLESCENT

*Read each statement & circle **true or false.** Your answers will not be shown to your parents.*

1. My mom doesn't understand me.	**True**	**False**
2. My mom and I sometimes end our arguments calmly.	**True**	**False**
3. My mom understands me.	**True**	**False**
4. We almost never seem to agree.	**True**	**False**
5. I enjoy the talks we have.	**True**	**False**
6. When I state my own opinion, she gets upset.	**True**	**False**
7. At least three times a week, we get angry at each other.	**True**	**False**
8. My mother listens when I need someone to talk to.	**True**	**False**
9. My mom is a good friend to me.	**True**	**False**
10. She says I have no consideration for her.	**True**	**False**
11. At least once a day we get angry at each other.	**True**	**False**
12. My mother is bossy when we talk.	**True**	**False**
13. The talks we have are frustrating.	**True**	**False**
14. My mom understands my point of view, even when she doesn't agree.	**True**	**False**
15. My mom seems to be always complaining about me.	**True**	**False**
16. In general, I don't think we get along very well.	**True**	**False**
17. My mom screams a lot.	**True**	**False**
18. My mom puts me down.	**True**	**False**
19. If I run into problems, my mom helps me out.	**True**	**False**
20. I enjoy spending time with my mother.	**True**	**False**

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APPENDIX G

ADOLESCENT ASSENT FORM

1. **Study Title:** The Role of Daily Routines in Adolescents Diagnosed with ADHD.

2. **Performance Sites:** Sites of data collection include a private outpatient medical facility, upper level departments of pubic charter schools, and a private psychology practice serving both adults and children.

3. **Names and Telephone Numbers of Investigators:** The following investigators are available for questions about this study, M-F, 8:00 am-4:30 pm: Mary Lou Kelley, Ph.D. at 225.578.4113 and David Landry, M.S. at 225.246.9510.

4. **Purpose of the Study:** The purpose of this study is to demonstrate the clinical utility and incremental validity of the Adolescent Routines Inventory: Parent & Self Report by examining routines of an ADHD versus non-clinical sample of adolescents and their parents.

5. **Who is Involved:** The study will involve 100 adolescents and a primary caregiver (Total participants = 200), with adolescents' ages ranging from 12 to 17 years.

6. **What is Involved:** The current study will recruit 100 adolescents and a caregiver to independently answer a series of questionnaires, including an assessment of daily routines and activities, to better understand the utility of these measures and possible outcomes they predict. Parents will also complete a brief demographic questionnaire. Participation in this study is voluntary, and only those who read and sign consent and assent forms will be allowed to participate. The examiner will provide assistance to those participants who experience difficulty reading the forms. Completion of questionnaires will take each participant no longer than 30 minutes.

7. **Benefits:** By completing questionnaire packets, participants will assist us in expanding our knowledge about the function of adolescent daily routines. By participating, subjects are contributing to the process of refining a potential assessment tool so that it can be accurately administered by professionals who provide quality health care to adolescents.

8. **Risks to Participants:** There are no known risks to participating. Should you experience distress during or after participating, investigators can provide you with community health care resources to assist with distress alleviation.

9. **Participation is Voluntary:** This study is designed to gather research information and is not mandatory. Your participation is completely voluntary; and, should you decide to participate, you are not obligated to complete questions that make you uncomfortable.

10. **Right to Privacy:** All information gathered is strictly for research purposes, and the privacy and confidentiality of all subjects will be protected. Only researchers involved in this study will have access to participant's information, unless authorization for

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remittance to pediatricians is obtained on the request of the parent. Moreover, the information collected will be coded by number instead of name. No person will be identified in any manner. The consent forms, the only forms that contain your names, will be maintained in a locked file cabinet in the research laboratory of Dr. Mary Lou Kelley at Louisiana State University. No other forms contain any identifying information. The results of this study may be published, released to a funding agency, or presented in a scholarly fashion; but the privacy of the participants will continuously be protected and names will not be used under any circumstances.

11. **Financial Information:** There is no cost for participation in this study.

12. **Withdrawal:** You may refuse to participate or withdraw from the study at any time. Refusal or withdrawal will not jeopardize your standing with the performance site or services you receive within the site.

13. **Removal:** Those subjects who fail to fully complete the questionnaire packet will be removed from the study.

"By signing this form, I agree that this study has been discussed with me and all my questions have been answered. I may direct additional questions about the study to the investigators. If I have questions about participants' rights or other concerns, I can contact Robert C. Matthews, Chairman, LSU Institutional Review Board, (225) 578-8692."

"I agree to participate in the study described above and acknowledge the researchers' obligation to provide me with a copy of this consent form if signed by me."

_____	_____
Adolescent Participant's Printed Name	**Adolescent Participant's Signature**
_____	_____
Date	**Witness**

"The study participant has indicated to me that he/she experiences difficulty when reading. I certify that I have read this consent form to the participant and explained that by completing the signature line above, the participant has agreed to participate."

_____	_____
Signature of Reader	**Date**

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APPENDIX H

PARENT CONSENT FORM

1. **Study Title:** The Role of Daily Routines in Adolescents Diagnosed with ADHD.

2. **Performance Sites:** Sites of data collection include a private outpatient medical facility, upper level departments of pubic charter schools, and a private psychology practice serving both adults and children.

3. **Names and Telephone Numbers of Investigators:** The following investigators are available for questions about this study, M-F, 8:00 am-4:30 pm: Mary Lou Kelley, Ph.D. at 225.578.4113 and David Landry, M.S. at 225.246.9510.

4. **Purpose of the Study:** The purpose of this study is to examine clinical utility and incremental validity of the Adolescent Routines Questionnaire, Parent & Self Report, by assessing daily routines of an ADHD versus non-clinical sample of adolescents and their parents.

5. **Who is Involved:** The study will involve 100 parent-adolescent dyads (Total Participants = 200), with adolescents ranging in age from 12 to 17 years.

6. **What is Involved:** The current study will recruit 100 adolescents and a caregiver to independently answer a series of questionnaires, including an assessment of daily routines and activities, to better understand the utility of these measures and possible outcomes they predict. Parents will also complete a brief demographic questionnaire. Participation in this study is voluntary, and only those who read and sign consent and assent forms will be allowed to participate. The examiner will provide assistance to those participants who experience difficulty reading the forms. Completion of questionnaires will take each participant no longer than 30 minutes.

7. **Benefits:** By completing questionnaire packets, participants will assist us in expanding our knowledge about the function of adolescent daily routines. By participating, subjects are contributing to the process of refining a potential assessment tool so that it can be accurately administered by professionals who provide quality health care to adolescents.

8. **Risks to Participants:** There are no known risks to participating. Should you experience distress during or after participating, investigators can provide you with community health care resources to assist with distress alleviation.

9. **Participation is Voluntary:** This study is designed to gather research information and is not mandatory. Your participation is completely voluntary; and, should you decide to participate, you are not obligated to complete questions that make you uncomfortable.

10. **Right to Privacy:** All information gathered is strictly for research purposes, and the privacy and confidentiality of all subjects will be protected. Only researchers involved in this study will have access to participant's information, unless parental request and

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authorization to release information to pediatricians is obtained beforehand. Information collected will be coded by number instead of name as to further protect privacy. No person will be identified in any manner. The consent forms, the only forms that contain your names, will be maintained in a locked file cabinet in the research laboratory of Dr. Mary Lou Kelley at Louisiana State University. Identity will be kept confidential unless release is required by law.

11. **Financial Information:** There is no cost for participation in this study.

12. **Withdrawal:** You may refuse to participate or withdraw from the study at any time. Refusal or withdrawal will not jeopardize your standing with the performance site or services you receive within the site.

13. **Removal:** Those subjects who fail to fully complete the questionnaire packet will be removed from the study.

"By signing this form, I agree that this study has been discussed with me and all my questions have been answered. I may direct additional questions about the study to the investigators. If I have questions about participants' rights or other concerns, I can contact Robert C. Matthews, Chairman, LSU Institutional Review Board, (225) 578-8692."

"I agree to participate in the study described above and acknowledge the researchers' obligation to provide me with a copy of this consent form if signed by me."

_____ _____

Signature of Parent/Guardian **Date**

"The study participant has indicated to me that he/she experiences difficulty when reading. I certify that I have read this consent form to the participant and explained that by completing the signature line above, the participant has agreed to participate."

_____ _____

Signature of Reader **Date**

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VITA

David Landry earned his Bachelor of Arts degree in psychology from Loyola University-New Orleans in May 2003. He later earned a Master of Science degree in experimental psychology from University of Louisiana at Lafayette in May 2005, where he was appointed as an adjunct faculty member in the Psychology Department until May 2006. In August 2006, David entered the child clinical psychology program at Louisiana State University and Agricultural and Mechanical College in Baton Rouge, Louisiana, under the guidance of Dr. Mary Lou Kelley, Ph.D. Mr. Landry's research interests include childhood and adolescent daily routines, pediatric Attention-Deficit/Hyperactivity Disorder, adjustment to pediatric chronic illness and adherence to medical regimes, childhood obesity prevention program development, and pediatric pain management. David completed an APA-accredited pre-doctoral internship at Baylor College of Medicine and Texas Children's Hospital in Houston, Texas, with an emphasis in pediatrics, and he eagerly waits receiving the additional year of required supervision in order to obtain licensure to practice psychology independently. Mr. Landry is currently evaluating opportunities to work in community-based private psychology practices in Lafayette, Louisiana.

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