A Descriptive Review of ADHD Coaching Research: Implications for College Students

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Abstract

Relative to their typically developing peers, college students with Attention Deficit/Hyperactivity Disorder (ADHD) often have poorer adjustment to college, higher rates of class withdrawal and academic probation, and lower rates of retention. Supportive services for these students are still being researched and developed. ADHD coaching—increasingly recognized as an important component of multimodal treatment for individuals with ADHD—may be a useful support for college students. To examine this question, the authors conducted a comprehensive descriptive literature review of studies examining ADHD coaching outcomes. Nineteen quantitative and qualitative studies of coaching outcomes were identified. Of these, 10 focus specifically on college students. All 19 studies indicate that coaching supports improved ADHD symptoms and executive functioning. The majority of quantitative studies report statistically significant benefits; several report positive trends. Additionally, six studies report improved participant well-being; three demonstrate maintenance of gains; five document high participant satisfaction with coaching. The authors provide: a description of ADHD coaching, a general overview of research on ADHD coaching, a detailed description of research on ADHD coaching for college students, implications for educational institutions, and suggestions for future study.

Keywords: ADHD, coaching, executive functions, disability, college students

Attention Deficit/Hyperactivity Disorder (ADHD), characterized by core symptoms including inattention, hyperactivity, and impulsivity was once thought to be a disorder of childhood, but recent literature has suggested that as many as 40% to 60% of individuals diagnosed as children continue to experience symptoms or impairments related to ADHD into young adulthood (Sibley et al., 2016). Some research indicates that individuals with ADHD are less likely to attend college than are their non-ADHD peers, though attendance rates of students with ADHD has been increasing (e.g., Newman et al., 2011). Recent estimates of the prevalence of ADHD in college students have ranged from 2% to 8%; however, since ADHD often goes undetected in college, the actual prevalence may be higher (Blase et al., 2009; DuPaul, Weyandt, O'Dell, & Varejao, 2009; Garnier-Dykstra, Pinchevsky, Caldeira, Vincent, & Arria, 2010).

In comparison to their typically developing peers, emerging adults with ADHD have been found to experience a decreased quality of life across many domains: more academic difficulties (DuPaul et al., 2009; Weyandt & DuPaul, 2013); vocational and financial challenges (Barkley, Murphy, & Fischer, 2010; Weyandt & DuPaul, 2013); high-risk behaviors, including criminal arrest (Barkley et al., 2010); difficulties with social adjustment and self-esteem (Blase et al., 2009); and higher rates of psychiatric conditions such as anxiety, depression, and drug and alcohol abuse (Biederman, Petty, Evans, Small, & Faraone, 2010; Weyandt & DuPaul, 2013). Students with ADHD entering college often experience challenges–resulting from difficulty managing variable course schedules; expanded autonomy; decreased structure; an increased number of distractions; and reduced social supports, including a reduction in parental supervision and support—all of which compound the challenge of adjustment to college (Farrell, 2003; Knouse & Fleming, 2016). Relative to their peers without disabilities, college students with ADHD have poorer

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adjustment to college (Blase et al., 2009), with less effective study habits, lower academic performance, lower test scores and GPA, and higher rates of class withdrawal and academic probation (Advokat, Lane, & Luo, 2011; Blase et al., 2009; DuPaul et al., 2009). Furthermore, students with ADHD are less likely to complete degree programs (Advokat et al., 2011; Weyandt & DuPaul, 2013).

Although support services for students with ADHD vary by school, colleges generally provide disability accommodations such as extended time on tests, alternate testing location, or extended deadlines on assignments. Students can also make use of other on-campus services such as mental health counseling or writing centers as needed. Nonetheless, the National Longitudinal Transition Study-2 (NLTS-2) found that not all students with disabilities identify themselves to the school for purposes of receiving accommodations; not all who disclose receive accommodations or supports; and of those who receive accommodations or use supports (whether or not they had disclosed a disability), only slightly over half find these services "very useful" (Newman et al., 2011, p. 36). In fact, some 34% of students with disabilities sought support on their own, outside of that provided by schools; this figure was 40% among students at four-year colleges. Some students with ADHD may seek outside support because of stigma or because colleges infrequently offer the support for individualized skill acquisition, improvement in self-regulation, and goal attainment that are essential for their success.

There is strong evidence that combining medications and other modes of treatment (i.e., a multimodal approach) will best address ADHD symptoms and executive functioning (EF) challenges and promote improved functional outcomes (Hinshaw & Arnold, 2015; Knouse, Cooper-Vince, Sprich, & Safren, 2008). Medications are considered a first-line component of multimodal treatment for ADHD at any stage of life. A 2011 study assessing medication use, study habits, and academic achievement found that, of students with ADHD taking prescribed psychostimulants, 92% believed their medications had helped them improve academically (Advokat et al., 2011). However, psychostimulants do not always yield improvement in key skills and strategies required for college success. Numerous researchers have examined the role of motivation, self-regulation, and academic skills (time management, organization and planning, study skills, study habits) in college student persistence and achievement (c.f., Bean, 1985; Lotkowski, Robbins, & Noeth, 2004; Robbins et al., 2003; Tinto, 1975, 1993). In fact, a meta-analysis of the psychological and educational literature found motivation, academic goals, academic self-efficacy, and academic-related skills to be the strongest predictors of retention (Robbins et al., 2004). For students with ADHD, psychoeducation, strategy instruction, and cognitive behavioral therapy are some other aspects of a multimodal treatment plan that have demonstrated benefit (Prevatt, Lampropoulos, Bowles, & Garrett, 2011; Prevatt & Young, 2014). Additionally, important functional areas for students with ADHD may be well addressed as key components of ADHD coaching. Although Hallowell and Ratey (1994) first described ADHD coaching for individuals with ADHD in print in *Driven to Distraction* in 1994, little was published on ADHD coaching before 2005. Since then, however, ADHD coaching has been increasingly recognized in the clinical literature as a useful and important component of multimodal treatment for individuals with ADHD (Barkley, 2015; Kooij, 2013; Murphy, 2015; Pehlivanidis, 2012; Pfiffner & DuPaul, 2015; Prevatt & Levrini, 2015; Sarkis, 2014). ADHD coaching is an approach to supporting students with ADHD that a growing number of colleges have begun to integrate (Goudreau & Knight, 2015; Parker, Hoffman, Sawilowsky, & Rolands, 2011). Rabiner (2014) commented that ADHD coaching focuses on:

> Academic goal setting, progress monitoring, dividing long-term projects into a sequence of specific and manageable tasks – along with frequent contact to help students stay on track – [that] is consistent with the emerging consensus of ADHD as a disorder of executive functioning . . . . From this perspective, coaching may be a better fit than traditional therapy models, and could certainly complement whatever benefits students may receive from medication treatment. (para. 18)

ADHD coaching is a specialized form of life coaching that has been employed since the early 1990s as an assistive psychosocial process to help people affected by ADHD identify and employ strategies and skills to help both minimize the effects of ADHD symptoms on their daily lives and more easily achieve their personal goals. The most common description of coaching—not limited to ADHD coaching—is that promulgated by the International Coach Federation (ICF; http://www.coachfederation.org). In the ICF model, coaches are primarily considered process facilitators, and the coaching is confidential, client-centered, and client-directed. Coaches hold the stance that clients are resourceful and have agency to effect the changes they desire to make. Clients meet regularly with their coaches who employ Socratic ques-

tioning and invite clients to reflect on their strengths, challenges, and possible courses of action, both in the service of goal attainment and to support full expression of potential. Coaches also provide the structure and accountability that support clients as they work towards their self-identified goals (ICF, 2007, 2015).

Coaching has variously been described as "the art of facilitating the learning, development, and performance of another" (Downey, 2001, p. 15); "unlocking a person's potential to maximize their own performance" (Whitmore, 1992, p. 8); and a catalyst for "sustained cognitive, emotional, and behavioral changes that facilitate goal attainment and performance enhancement," both personal and professional (Grant & Stober, 2006, p. 2). This emphasis on performance is the hallmark of ADHD coaching: while coaching may share with psychotherapy outcomes such as self-awareness, insight, and emotional self-regulation, its primary focus is setting goals, developing strategies, and taking action to get things done (Favorite, 1995). In fact, it is frequently an inability to "get things done" that leads people with ADHD to seek the assistance of an ADHD coach. A central aim of the ADHD coaching process is, therefore, to support behavior change by employing approaches that promote a client's ability to "better manage their lives by learning to set realistic goals and stay on task to reach those goals" (Murphy, 2015, p. 753).

As a still emerging coaching specialty, there is no single definition of what specifically comprises ADHD coaching (Wright, 2014). Wright described professional ADHD coaching as "a seamless blend of three elements employed by the coach as needed" (pp. 22–23): (a) life coaching; (b) providing education about ADHD and how it might be affecting the client; and (c) working with the client to develop external systems and strategies tailored to the client's needs and environment that shore up the client's executive functioning skills. As ADHD is increasingly understood as an implementation problem (Ramsay & Rostain, 2016), by necessity, ADHD coaching addresses the need for development of skills and strategies to manage the often significant pragmatic challenges faced in achieving one's aspirations while living with ADHD. As an example of this process, Quinn, Ratey, and Maitland (2000) provided the following general description of ADHD coaching for college students:

A coach can help a student take action on his or her goals by working together to:

- Clearly define and prioritize goals.
- Anticipate roadblocks that might prevent follow through on those goals.
- Develop strategies to address roadblocks.
- Create reminder systems to promote self-monitoring and improve follow through between sessions.
- Provide external accountability and evaluate progress toward these goals. (p. 17)

As Tuttle, Ahmann, and Wright (2016) described, ADHD coaching shares common elements with other psychosocial treatments; however, the following key factors distinguish it as a unique approach:

- Egalitarian and nonclinical: Partnership model with a personal-development orientation.
- Focus on skill acquisition and implementation: Targets clients' specific performance issues with personalized implementation plans and skill set development.
- Flexible structure: Client may meet with coach remotely (phone, video-conference), or may meet in nontraditional settings (workplace, library).
- Increased accessibility and accountability: Access to coach between sessions (text, phone, email) bolsters client accountability and engagement.

ADHD coaches are not trained to address complex comorbidities. Instead, certification bodies, in their ethics codes, indicate that clients with such concerns should be referred to appropriate mental health care provider(s) either in lieu of or in concert with coaching (ICF, 2015; Professional Association of ADHD Coaching, 2015). A growing number of mental health professionals, recognizing the merits of the coaching paradigm, are expanding their practices to include coaching or utilizing coaching techniques in their work with clients, either adopting the ICF-derived model (Williams & Davis, 2007) or employing models of their own (e.g., Prevatt & Levrini, 2015).

The purpose of this study was to provide an overview of the current empirical foundation for ADHD coaching, with a particular focus on coaching for college students. This study consisted of a descriptive review of the literature on ADHD coaching outcomes, exploring the following research questions:

1. What comprises the current body of research literature examining outcomes of ADHD coaching?
    a. How many research studies have examined outcomes of ADHD coaching; and of these, what subset addresses coaching for college students?

   b. What types of studies, including sample sizes, comprise the research on ADHD coaching?
2. What theoretical frameworks for ADHD coaching are identified in the research literature?
3. What are the characteristics of the sample participants in the ADHD coaching research literature?
   a. What ages of participants were studied?
   b. How was ADHD diagnosed in the studies of ADHD coaching?
4. What are the characteristics of the coaching programs studied?
   a. Did coaching occur individually or in groups?
   b. What coaching models are described?
   c. What was the training of the coaches?
   d. What was the frequency and duration (number) of coaching sessions, and length of individual coaching sessions?
5. What outcomes of ADHD coaching are identified in the research literature? In particular, what outcomes are identified and what outcome measures are used in the coaching research specifically among college students?
6. Describe in detail the research on ADHD coaching, in particular, the research among college students.

Method

Search Strategy

Research studies reviewed herein were identified as of December 2016, through online searches on Pubmed/Medline, EBSCO Megafile, Google Scholar, and ERIC databases using search terms including "ADHD," "executive functions," and "coaching." Several studies also were identified through cross-referencing citations in articles or books and identifying grey literature through a generic Google search. "Gray Literature or 'Grey Literature' is literature (often of a scientific or technical nature) that is not available through the usual bibliographic sources such as databases or indexes. It can be both in print and, increasingly, electronic formats" (Outten, 2016, para. 1). Grey literature is increasingly recognized as an important and useful addition to systematic literature reviews. In fact, the *Cochrane Handbook for Systematic Reviews of Interventions* includes a section titled "Including unpublished studies in systematic reviews" (Sterne, Egger, & Moher, 2011).

Inclusion and exclusion criteria. Although mentioned elsewhere as useful in ADHD treatment (e.g., Barkley, 2015), studies of "parent coaching" were not included in this search. Only studies of ADHD coaching that examined coaching outcomes were selected for this review. One additional study examining the impact of the use of between-session assignments (BSAs) on coaching success among college students (Prevatt et al., 2011) explored a factor impacting outcomes and, for this reason, was described in this review, although not tallied among the outcome studies.

While identified studies used varying methods of establishing an ADHD diagnosis, diagnostic approach was not an exclusion criterion for studies in this comprehensive review. Additionally, theoretical or conceptual frameworks used for the coaching and training of the study coach(es) varied among studies but these also were not exclusion criteria as the aim of this review was to be comprehensive. The term "ADHD coaching" will be used throughout this article to describe both ADHD and executive skills coaching, as they are very similar.

Identification of Theoretical Frameworks

The second author of this study, trained as a mental health clinician, reviewed the methods section of each research study to identify the theoretical framework or frameworks used. For each study, if the report overtly identified a particular framework, that was ascribed to the study. If a framework was not overtly identified, the framework ascribed to the study was determined based on the outcome variables studied and/or the measures used. In some cases, if a framework was overtly identified and the outcomes studied and/or the measures used suggested an additional theoretical framework, this additional framework was also ascribed to the study.

Identification of Study Designs

The first author of this study has a research background and reviewed each study to categorize the study design. Most authors of reviewed papers overtly identified their study design (e.g., randomized controlled trial, mixed methods, qualitative), and, when this was the case, that classification was used. When a study design was not overtly identified, the first author reviewed the study methodology in detail and ascribed a study design most representative of the methodology described.

Identification of Outcome Categories

The first and second authors reviewed both the outcome variables identified in each study and the specific measures used for each outcome. Based on these variables and measures, they jointly established categories of study outcomes.

Findings

Research Question (1): What comprises the current body of research literature examining outcomes of ADHD coaching?

1-a. How many research studies have examined outcomes of ADHD coaching; and of these, what subset addresses coaching for college students? We identified nineteen studies directly addressing ADHD coaching outcomes. Sixteen of these studies were published in peer reviewed journals; one study was reported in a book (Dawson & Guare, 2012); one was a dissertation (Reaser, 2008); and one was a paper presented at the AHEAD conference and found online (Maitland, Richman, Parker, & Rademacher, 2010). Seven of these 19 studies examined ADHD coaching for children and teens and are mentioned herein, but reviewed in detail elsewhere (Ahmann, Saviet, & Tuttle, 2017). Two extant studies of ADHD coaching for adults are also mentioned, but not reviewed in detail herein. The remaining 10 studies, all of which examined outcomes of ADHD coaching for college students, are described in detail in this article.

1-b. What types of studies, including sample sizes, comprise the research on ADHD coaching? As illustrated in Table 1, the 19 studies exploring coaching outcomes comprised varied study designs, including quantitative and qualitative approaches. Two studies were randomized controlled trials; one of these focused on college students. Fifteen of 19 studies lacked control groups, although three were multiple-baseline studies for which this was not a concern.

The number of individuals receiving coaching interventions in studies to date varied widely. Of the studies of coaching for college students, seven were relatively small (fewer than 25 participants in the intervention group) and two studies were larger (Field, Parker, Sawilowsky & Rolands, 2010a, 2013; Prevatt & Yelland, 2015) with sample sizes of 88 and 148, respectively.

Research Question (2): What theoretical frameworks for ADHD coaching are identified in the research literature?

In the 19 studies examining ADHD coaching outcomes, six theoretical frameworks were used, either singly or in combination (see Tuttle et al., 2016). In decreasing order of frequency, these were: (1) executive functioning (12 studies); (2) psychoeducation (five studies); (3) self-determination/empowerment (five studies); (4) cognitive behavioral (three studies); (5) emotional intelligence/interpersonal skills (three studies); and (6) self-efficacy and social learning (one study).

Research Question (3): What are the characteristics of the sample participants in the ADHD coaching research literature?

3-a. What ages of participants were studied? As indicated in Table 1, studies examined coaching for elementary, high school, and college students, as well as adults. Ten studies addressed coaching outcomes for college students.

3-b. How was ADHD diagnosed in the studies of ADHD coaching? As indicated in Table 2, studies of ADHD coaching were inconsistent in the way an ADHD diagnosis was established. Six of the 10 studies of coaching for college students determined an ADHD diagnosis based on documentation having been accepted by the school's disability services office.

3-c. What factors are identified that impact coaching success? Table 3 outlines eight factors identified in the research literature as potentially related to coaching success. Most of these factors were individual characteristics; some were aspects of the coaching program itself.

Research Question (4): What are the characteristics of the coaching programs studied?

4-a. Did coaching occur individually or in groups? As detailed in Table 4, three of the 19 studies of coaching examined coaching in groups. The other 16 studies (including all ten studies of college students) examined outcomes of individual coaching.

4-b. What coaching models are described? Although not all ADHD coaching outcome studies described the coaching model used, a number of models were specified in the extant research. (Note that models understandably related closely to the theoretical framework of the studies.)

Dawson and Guare's (2012) executive skills coaching model was used in four studies of coaching for children and teens (Dawson & Guare, 2012; Merriman & Codding, 2008; Plumer & Stoner, 2005; Vilardo, DuPaul, Kern, & Hojnoski, 2013). This approach to coaching began with long-range goal setting followed by brief (e.g., 10 minutes), often daily, coaching sessions, drawing from correspondence training research: "goal setting, self-monitoring, performance feedback, and/or contingency management" (Merriman & Codding, 2008, p. 314).

Two studies among children and teens used coaching interventions as part of either multimodal treatment (Garcia Ron, Serrano Grasa, Blanco Lago, Huete Hernani, & Pérez Martinez, 2016) or a broader intervention (Evans, Schultz & DeMars, 2014). Wentz, Nydén, and Krevers (2012) used a model of Internet-based support and coaching for adolescents and young adults.

One study of coaching for college students used a peer coaching model in which college student "coaches" were trained by the school's Coordinator of Student Disabilities (Zwart & Kallemeyn, 2001). The training included education on ADHD and learning disabilities, as well as diagnostic information pertinent to college students; introduction to a resource library at the college and relevant websites; practice in time-management skills; and instruction in promoting student self-advocacy skills. Among the other studies of coaching for college students, two (Swartz, Prevatt, & Proctor, 2005; Reaser, 2008) used a coaching model based on life coaching and an approach to ADHD coaching described by Quinn et al. (2000). Another study (Prevatt & Yelland, 2015), used a similar approach: an EF-focused, CBT- and psychoeducationally-oriented coaching intervention, modeled on Swartz et al. (2005).

Three studies of coaching for college students used the Edge/JST model (see Field et al., 2010a, Appendix A), an approach providing life coaches with additional training to work with the unique challenges of youth with ADHD (Field et al., 2013; Parker et al., 2011; Parker, Field, Sawilowsky, & Rolands, 2013). Coaches using this model helped students assess their needs and set goals; provided assistance with structure, strategies and skills addressing individual challenges in EF and ADHD symptoms, such as focus, organization, prioritization, and persistence; offered support and accountability; and promoted self-confidence, self-advocacy, and success in goal attainment.

4-c. What was the training of the coaches? As indicated in Table 4, in the extant ADHD coaching research, the training and background of coaches was varied, including peer and "trained coaches." The term "trained ADHD coach" is used in this review to simply mean non-peer coach and comprised both informally and formally trained coaches.

4-d. What was the frequency and duration (number) of coaching sessions, and length of individual coaching sessions? The frequency of the coaching intervention varied among studies (see Table 3). All studies of college students used a model of weekly coaching sessions.

The duration of the coaching intervention was also heterogeneous in studies reviewed. As indicated in Table 3, interventions comprising daily coaching sessions typically provided a higher total of sessions.

Not all studies reported the length of individual coaching sessions, but there was wide variation among those reported. For studies utilizing daily sessions, for example those involving peer coaching for younger students, 10 minutes was the typical session duration (e.g., Plumer & Stoner, 2005; Vilardo et al., 2013). Of the studies reporting weekly coaching, including those involving coaching for college students, sessions generally ran 30-60 minutes in length.

Research Question (5): What outcomes of ADHD coaching are identified in the research literature? In particular, what outcomes are identified, and what outcome measures are used, in the coaching research among college students?

The research on coaching outcomes examined a range of outcome variables, falling generally into the following categories (see also Table 5; note that not all studies examined all of the same variables or used the same measures):

- ADHD and executive functioning symptoms, and related behaviors (19 studies, including all 10 studies of coaching for college students);
- Self-esteem, well-being, and quality of life (seven studies, six of which were studies among college students);
- Improved family functioning (two studies, both among elementary school children); and
- Satisfaction with coaching (nine studies, four of which were studies among college students).

ADHD/EF symptoms and related behaviors. Seven of the 10 studies among college student used the LASSI (Learning and Study Strategies Inventory; Weinstein & Palmer, 2002), or select subscales, as a measure of EF. The LASSI, a self-report instrument used in several studies of ADHD coaching, measures students' awareness and use of skills and beliefs related to academic success in college. The LASSI has 10 subscales in three clusters: (1) Skill (i.e., Information Processing, Selecting Main Ideas, Test Strategies); (2) Will to learn (i.e., Anxiety, Attitude, and Motivation); and (3) Self-regulation (i.e., Concentration, Self Testing, Time Management, and Study Aids [Study Aids was replaced with Using Academic Resources in 2016]; Weinstein & Palmer, 2002; Weinstein, Palmer, & Acee, 2016; Weinstein, Schutte, & Palmer, 1987). Richman, Rademacher, and Maitland (2014) use the LASSI differently: as a measure of beliefs and behaviors related to academic success. Two studies used other scales to measure EF: Maitland et al. (2010) used the Life Participation Scale-Adult (Saylor, Sutton, & Khan, n.d.), a measure of adaptive functioning and Richman et al. (2014) used the BRIEF-A (Behavior Rating Inventory of Executive Function–Adult Scale; Roth, Isquith, & Gioia, 2005). The Parker et al. (2011) study used grades as an

outcome measure. Seven of the college studies also documented improvement in EF skills and/or goal attainment using qualitative approaches.

Self-esteem, well-being, and quality of life. This outcome comprised a wider variety of variables and measures among college students. Zwart and Kallemeyn (2001) measured self-efficacy using the General Self-Efficacy Scale, a subscale of the Self-Efficacy Scale (SES; Sherer et al., 1982). Both Maitland et al. (2010) and Richman et al. (2014) measured self-determination using the Self-Determination Student Scale (S-DSS; Hoffman, Field, & Sawilowsky, 2004). Other variables in the "Self-esteem, well-being, and quality of life" category included life satisfaction, well-being, self-esteem, and psychological distress. Maitland et al. (2010) measured life satisfaction with the Authentic Happiness Inventory (Peterson, 2004). Field et al. (2010a, 2013) measured well-being using a 10-item College Well-Being Scale (CWB; Field, Parker, Sawilowsky, & Rolands, 2010b). Prevatt and Yelland's (2015) study measured self-esteem with the Rosenberg Self-Esteem Inventory (RSE; Rosenberg, 1965), a 10-item scale assessing global self-esteem; they measured psychological distress using the Outcome Questionnaire-45 (OQ-45; Lambert & Finch, 1999), a 45-item tool typically used as a repeated measure of client psychological distress over time in therapy.

Satisfaction with coaching. Four of the studies using qualitative approaches identified satisfaction with coaching among college students.

Research Question (6): Describe in detail the research on ADHD coaching, in particular, the research among college students.

The research on ADHD coaching for children/adolescents and adults is briefly presented here; it is reviewed in greater detail elsewhere (Ahmann et al., 2017). The research on ADHD coaching for college students is reviewed in detail herein. Details of all 19 studies appear in Tables 1, 4, and 5. Additionally, Table 3, and a separate section below, incorporate one study only addressing between-session assignments (Prevatt et al., 2011), for a total of 20 studies.

Children/adolescents and adults. Two studies examined outcomes of peer coaching for elementary students with ADHD, using the Dawson and Guare (2000, 2012) executive skills coaching model, and focusing on social and behavioral outcomes (Plumer & Stoner, 2005; Vilardo et al., 2013).

Five studies reported to date examined trained coaches working with children or teens with ADHD (Ahmann et al., in press). A prospective descriptive study examined the impact—on behavior and family quality of life—of five monthly group coaching sessions for 49 children with ADHD, as part of multimodal treatment (Garcia Ron et al., 2016). In two small studies (n = 5 and n = 3, respectively), school personnel used Dawson and Guare's coaching model to examine academic outcomes for teens (Dawson & Guare, 2012; Merriman & Codding, 2008). Evans et al. (2014) conducted a larger (24 participants with ADHD; 12 community controls), randomized controlled study of effectiveness and dose response of an intervention comprised of coaching for teens as well as an interpersonal skills group and parent training. Outcomes included academic, social, and familial factors. Wentz et al. (2012) conducted a small quantitative and qualitative longitudinal study among 10 teens and young adults (ages 15-26 years) to validate a model of Internet-based support and coaching for adolescents and young adults with ADHD, Asperger's syndrome, or pervasive developmental disorder not otherwise specified.

Only two studies to date have examined ADHD coaching for adults, both employing a group approach rather than individual coaching. Bloemen, Verbeeck, and Tuinier (2007) conducted a prospective study of 10 adults, meeting the DSM-IV criteria for ADHD, participating in an eight-week group coaching program. Kubik (2010) examined group coaching in a prospective study, with additional quantitative components, of 45 adults, diagnosed with or strongly suspected of having ADHD; 22 areas of concern, comprising five factors, were examined—cognitive, distractibility, social, inattentive, and behavioral concerns (Kubik, 2010).

College students. One study of coaching for college students used a peer coaching model: Zwart and Kallemeyn (2001) conducted a quasi-experimental study, including a matched-pairs analysis, with 22 college students having ADHD, some also having learning disabilities (LD). Coached students demonstrated pretest to posttest improvements in self-efficacy and on all subscales of the LASSI. An initial analysis compared pretest to posttest change scores of coached students to those of a control group of 20 students, some of whom only had LD and not ADHD, finding some differences between the groups. For a subsequent analysis, an adjusted control group (n = 11) was formed with students more similar to the coached group, in that they had only ADHD or ADHD and LD but not only LD; results changed somewhat (e.g., pre- to posttest changes in self-efficacy were no longer significant although pre- to posttest changes in five of the six LASSI subscales remained significant, excepting only Attitude). Finally, a matched pairs analysis demonstrated that the coached students had

significant ($p < .05$) improvement on eight subscales of the LASSI, excepting only Attitude and Information Processing. In contrast, the adjusted comparison group ($n = 11$) only had significant improvement in two subscales: Concentration and Self Testing.

Nine studies examined the impact of coaching with "trained coaches" (non-peer) for college students with ADHD; two of these studies also included some graduate students. An additional study specifically examined the use of BSAs when coaching college students (Prevatt et al., 2011).

Swartz et al. (2005) described a coaching program and reported a case study, with pretest and posttest data, of an individual whose ADHD diagnosis was determined by a licensed professional. Pre- to post-intervention improvement occurred in four of seven self-selected goals, with no change in one goal and a decrease in two; scores on the LASSI improved.

Reaser (2008) reported on coaching (using the approach of Swartz et al., 2005) for a convenience sample of seven college and graduate students "previously diagnosed with ADHD" (p. 31). This qualitative case series, following the methods of Yin (1993, 1994), included a quantitative pretest–posttest component in which students each demonstrated improvement on at least six of 10 LASSI subscales. Based on questionnaires and interviews with the researcher, students also reported positive gains in outlook, organization, self-awareness, and self-control; most students identified coaching as being more helpful than other ADHD treatment approaches and wished that the intervention had continued longer.

Parker and Boutelle (2009) conducted a phenomenological study involving a purposive sample of seven students at Landmark College (a school focused specifically on students with ADHD and LD). One student had math-based LD but not ADHD; the others had ADHD diagnoses, though the method of diagnosis was not described. After 10 weekly coaching sessions, students participated in two separate hour-long interviews about their coaching experience; one student completed just one interview. Three types of qualitative analysis on the interview transcripts uncovered key themes in students' experiences of coaching, including: changes in thinking and behavior, development of competencies for goal attainment, enhancement of well-being, and a positive sense of the future. The researchers also reported: "students' overall experiences with coaching were extremely positive" (p. 215).

The Maitland et al. (2010) mixed-methods study used a purposive sample of six students having ADHD (three also having LDs; method of ascertaining ADHD not described). Quantitative findings included a non-significant trend ($p = .059$) toward an increase in self-determination as well as non-significant increases in EF skills and life satisfaction. An analysis of hour-long interviews with each student found increases in the same three domains, as well as increased confidence about future success.

Parker et al. (2011) also reported a mixed-methods design with seven college students having ADHD (determined by their eligibility for college accommodations for the diagnosis). From pre- to post-intervention, coached students in this study showed improvements in grades (GPA) and "substantial" mean gains in the Self-Regulation subscale of the LASSI. When interviewed about their coaching experiences, students reported that coaching contributed to improved "goal attainment skills . . . a greater sense of well being and self-regulation;" and that they "enjoyed working with coaches, whom they found to be effective and supportive" (p. 115).

Richman et al. (2014) examined the impact of coaching on self-determination, executive functioning, and academic skills in a self-selected convenience sample of undergraduate and graduate students with ADHD/LD, determined based on eligibility for LD/ADHD services in a university disability office. Although quantitative results were not significant, "all intervention group students improved in every posttest measure and, except in one case, to a greater extent than the comparison group" (Richman at al., 2014, p. 39). Thematic analysis of interviews, based on 12 specific questions, explored the impact of coaching on the quantitative outcome variables, also identifying student views of benefits and limitations of coaching, described in the discussion section below.

Prevatt and Yelland (2015) examined ADHD coaching using an EF-focused, CBT- and psychoeducationally-oriented approach for coaching (modeled after Swartz et al., 2005) for students self-reporting ADHD in a descriptive prospective study with a correlational component. Coaching was complemented by between-session check-ins as needed. "With the exception of the OQ-45 (outcome questionnaire) subscale for interpersonal relations," the results indicated significant pre- to post-treatment effects for all variables studied ($p < .01$) (Prevatt & Yelland, 2015, p. 670): reductions in distress ($p < .01$); improvements in self-esteem ($p < .01$); improvements in learning and study strategies (each of the 10 subscales of the LASSI had $p < .01$; Cohen's d values ranged from 0.40 to 0.89); and improved satisfaction with school ($p < .01$; $d = 0.83$). For the LASSI, the largest effect sizes were found for Time Management ($d = 0.89$) and Concentration ($d = 0.76$), important EF skills for students with ADHD. Correlates of positive change

on various study measures were also examined, suggesting, in part, that clients with higher initial motivation, less comorbid anxiety and depression, and lower self-rated symptoms of ADHD, may derive a greater range of benefits from coaching.

Field et al. (2013) conducted a randomized controlled study of coaching, using the Edge/JST model, on 10 college campuses, with students whose ADHD was determined by their eligibility to receive accommodations at school based on submitted documentation. Students who received coaching demonstrated significantly improved EF from pretest to posttest, as measured by total scores on the LASSI ($p < .01$; effect size $d = 1.02$), and also improvements in Will, Skill, and Self-Regulation, as measured by the LASSI's clusters of subscales (see description above), with moderate to large effect sizes ($p < .01$ for each; $d =$ 0.65, 0.88, and 1.10, respectively). Comparison subjects did not show similar gains. Additionally, controlling for the pretest LASSI scores as a measure of EF in analysis, coached students, as compared to non-coached controls, demonstrated significantly higher total ($p = .048$) and subscale ($p < .05$ for each) scores in executive functioning on the LASSI with moderate to large effect sizes (Partial Eta2 of 0.05 for Will; 0.04 for Skill; and 0.08 for Self-Regulation), as well as higher post-intervention well-being scores on the CWB ($p = .05$). Of note, no statistically significant differences were found in outcomes—with the exception of the LASSI Self-Regulation subscale posttest scores—between study participants self-identifying as having ADHD only or ADHD and at least one other condition: "depression, anxiety, learning disability, Obsessive Compulsive Disorder, Oppositional Defiant Disorder, Tourette's Syndrome, Asperger's/Autism, or Bi-polar Disorder" (p. 77).

Individual interviews were conducted with a purposive sample of the coached students ($n = 19$) for a qualitative component of the Field et al. (2010a, 2013) study, reported by Parker et al. (2013). These 19 students reported that coaching helped with numerous aspects of goal-directed behavior and attainment, meeting needs not addressed by other providers, including (a) designing more effective goals; (b) developing better coping strategies, including persistence and self-regulation; (c) working more productively; and (d) achieving "more positive outcomes" (pp. 222, 226). Based on analysis of themes in the interviews, artifacts students shared with researchers, and quantitative data, four main benefits to coaching were identified: (a) promotion of self-regulation; (b) assistance in developing productive beliefs; (c) a "unique and caring partnership"; and (d) "enhanced . . . positive feelings" (p. 226).

Between-session assignments among college students. To date, two studies of ADHD coaching for college students have examined in detail one specific strategy used in the coaching process: BSAs, which are individualized and may include activities such as purchasing a planner, scheduling daily study times, or gathering articles for a research paper. Prevatt et al. (2011), using the coaching model of Swartz et al. (2005) and the BSA approach of Dawson and Guare (2000), examined the use of BSAs in relation to factors including compliance, usefulness, and benefit for 13 college students with a "prior diagnosis of ADHD" (p. 20). Coaches rated student attitudes toward BSAs (mean rating of 4.8 on a Likert scale where 1 = *extremely negative* to 7 = *extremely positive*) and compliance with BSAs (a mean rating of 4, with a range of 2 to 7, where 1 = *never complete* and 7 = *always complete*). Coaches also rated the utility of the BSAs in helping students deal with problem areas (mean rating of 5.17 where 1 = *not at all useful* and 7 = *very useful*). Students were not more likely to comply with written than oral BSAs, but written instructions were correlated with greater time spent on the assignments ($r = .71$, $p < .01$). Coach ratings of overall client progress were positively correlated with their ratings of student positive attitudes toward the BSAs ($r = .84$, $p < .01$). Prevatt and Yelland (2015) examined this issue again, as part of a larger study of coaching outcomes (described above), finding that when coaches gave higher ratings of client compliance with, time spent on, and/or quality of the BSA, clients showed more positive changes on anxiety, concentration, selecting main ideas, and test strategies.

Summary and Discussion

ADHD coaching emerged as new field in the 1990s (Wright, 2014). Since most coaches—as well as current ADHD coach training programs—are not associated with university, hospital, or other health care settings, research on ADHD coaching has only begun to emerge more recently. We were thus encouraged to have identified 19 studies on ADHD coaching outcomes, 16 of which have been published in peer reviewed journals. Ten of these studies examined ADHD coaching for college students.

Study Designs

The studies exploring ADHD coaching outcomes comprised a combination of qualitative and quantitative approaches, with varied study designs, including two randomized controlled trials (see Table 1). The studies of coaching for college students ranged from a case study to a randomized controlled trial. Extant

studies were mostly quite small in size and lacked control groups. Additionally, only two randomized controlled trials of ADHD coaching, one with high school and one with college students, have been conducted to date (Evans et al., 2014; Field et al., 2010a, 2013). The varied extant literature is interesting in that beneficial outcomes of ADHD coaching, for managing ADHD and EF symptoms, as well as other positive outcomes (Table 5), are fairly consistently demonstrated across a wide range of study designs. Although existing studies uniformly found beneficial outcomes of ADHD coaching, larger sample sizes and the use of control groups, including randomization, would strengthen conclusions that can be drawn from this body of research.

Participant Characteristics

The 19 studies on ADHD coaching outcomes variously examined coaching for elementary and high school students, college students, and adults. Studies of ADHD coaching to date were inconsistent in the way an ADHD diagnosis was established (see Table 2). ADHD subtypes/presentations and use of medication were infrequently and inconsistently reported despite the possibility that both are potentially confounding factors (see Kubik, 2010). In one study, self-identified symptom severity impacted coaching outcomes (Prevatt & Yelland, 2015). Greater consistency in diagnostic approach and reporting of ADHD presentation, symptom severity, and medication use would undoubtedly improve future research.

Comorbid conditions were not always examined in extant studies. In fact, although Zwart and Kallemeyn's (2001) results suggest that co-occurring LD may confound the relationship of ADHD and coaching outcomes, several studies examined coaching for students with ADHD and comorbid LD without examining such potential confounding. Depression and anxiety are other commonly occurring comorbidities with ADHD. While Prevatt and Yelland (2015) found that lower initial levels of depression and/or anxiety among students were associated with higher levels of benefit from coaching, Field et al. (2013) found no effect of co-occurring conditions on outcomes of coaching, except on the post-coaching Self-Regulation cluster score on the LASSI. The impact of comorbidities on the success of coaching is unresolved and deserves further research attention.

Further, findings in several studies to date (see Table 3) suggest that it may be important for future research to identify and possibly control for—if not examine the impact of—concurrent use of therapy, tutoring, and other related services, in examining coaching outcomes. Whether socioeconomic factors play a role in coaching success has received almost no attention; but Evans et al. (2014) examined selected socioeconomic variables, finding that controlling for maternal education, but not paternal education or family income, influenced outcomes. These factors deserve further research attention as well.

A few of the studies of coaching for individuals with ADHD document that not all individuals who begin a coaching program complete it (e.g., Field et al., 2013; Prevatt & Yelland, 2013). Since EF challenges directly impact follow-through, this challenge is not unique to coaching, but occurs with any treatment modality for ADHD, including medication, CBT and others. Prevatt (2016) specifically described the importance of screening students for "suitability" for ADHD coaching, as well as evaluating a student's level of motivation before "accepting them for ADHD coaching" (pp. 110-111). Future research might examine differences between individuals who do and do not stick with coaching and investigate related factors, such as level of motivation and readiness to make use of coaching.

Characteristics of Coaching Programs

Coaching has always drawn on a rich theoretical base (Cox, Bachkirova, & Clutterbuck, 2014; Stober & Grant, 2006; Wildflower & Brennan, 2011). We were thus interested to examine the conceptual frameworks that may have been employed in the identified studies and the coaching programs investigated. It was no surprise that, of the six frameworks identified, a majority of the studies endorsed an executive functioning framework, which provides the basis for much of the work of ADHD coaching.

The various characteristics descriptive of the ADHD coaching process in the studies reviewed are similar to those examined in a systematic review of health and wellness coaching (Wolever et al., 2013). These include group or individual coaching; coaching models; coach training; length of individual coaching sessions; and the frequency and duration of the coaching program. Three of the 19 ADHD coaching outcome studies examined coaching for children; two used peer coaches and one examined group coaching, all models potentially useful in school settings. Three studies looked at coaching for teens with ADHD, with one additional study including both teens and young adults; none of these examined a group coaching model, although coaching in a group might make sense for teens, both due to peer influence and the potential cost-effectiveness in a school setting. Only two studies to date have examined coaching for adults with ADHD, both examining group rather than individual coaching, and demonstrating posi-

tive outcomes; in actuality, however, many adults are coached individually. No research examined group coaching for college students, a potentially cost-effective model as compared to individual coaching. Group coaching might have certain benefits, such as peer support, but also certain drawbacks for this age group, including less ability to effectively target individual needs. While several of the studies of coaching for children and teens examined peer coaching, only one study of coaching for college students used peers as coaches. If additional research were to find peer coaching for college students to have similar benefits to that demonstrated with informally trained or formally trained and certified coaches, costs to clients or educational institutions might be lower.

While three of 19 extant studies examined the use of peer coaching, the 16 studies examining outcomes with trained coaches utilized various definitions of what comprised an "ADHD coach," including differing approaches to coach training (Table 4), and the use of varied models (e.g., Dawson & Guare, 2000, 2012; Swartz et al., 2005; Edge/JST, described in Field et al., 2010a). It is interesting to note that positive outcomes were demonstrated across this range of coaching approaches and models. No comparison has been made of coaching with differing approaches (e.g., peer vs. "trained coach"), differing types of coach training, or differing coaching models. However, select aspects of coaching programs have been shown to impact outcomes: BSAs, as discussed herein, as well as incentives, consequences, and other factors as detailed in Prevatt et al. (2017). Clearly, future studies should explicitly describe coach training and the coaching approach and model used. At some point, research comparing these variables might also be useful.

With the exception of one study (Zwart & Kallemeyn, 2001), college students received at least eight, and as many as 24, weekly sessions of ADHD coaching (Table 4). Evans et al. (2014), studying coaching for teens with ADHD, explored a coaching dosage effect on selected outcomes, an important factor deserving more study in all age groups, and certainly among college students with their otherwise busy schedules. Dosage effects might also elucidate varying impacts over time. As a related matter, three studies of coaching, but none among college students, explored maintenance of gains over time. Longitudinal designs in future studies would contribute to understanding both dosage effects and the extent to which gains made in a coaching program are maintained over time (Ramsay, 2010).

Three studies (Maitland et al., 2010; Parker & Boutelle, 2009; and Richman et al., 2014) included interviews with small numbers of students (ns six, seven, and six, respectively) about limitations they experienced in coaching services provided, mostly related to a broadening of the coaching role. Some students reported feeling that it would be better if coaching were more accessible and appointments were longer or more frequent; others wished that coaches had more of a long-term orientation, such as knowing more about graduate programs or more directly addressing post-college planning (Maitland et al., 2010; Richman et al., 2014); and some wished that coaches had more directly taught them study skills, more typically the role of a tutor, but a role that some coaches incorporate into their work (Maitland et al., 2010; Parker & Boutelle, 2009; Richman et al., 2014). These findings may suggest additional avenues of exploration for future research.

Outcomes

Rabiner (2014) suggested that one criticism of the coaching research to date is that only one study has examined the impact of coaching on GPA, and none has examined the impact on number of credits earned in a semester. (DuPaul, Dahlstrom-Hakki, Gormley, & Banerjee [2017, abstract] suggest that coaching has a positive impact on GPA for students with ADHD; full study not available at time of manuscript submission.) These variables could be explored in future research; additionally, the duration of coaching required to support these outcomes could be explored. Nonetheless, "ADHD and EF symptoms" was the study outcome most commonly studied in extant coaching research, and studies consistently demonstrated improvements in these symptoms as a result of coaching. Improvement in these key symptoms is unquestionably of substantial benefit to individuals with ADHD, easing functioning in many life domains. Among the domains likely impacted by improvements in ADHD and EF symptoms is student success in college, as indicated by GPA improvements examined in one study.

Also examined in the extant research, self-esteem, well-being, and quality of life are other important outcomes impacting individuals with ADHD (Weiss, 2017). In fact, Rabiner (2014) has suggested: "The fact that students [in coaching studies] reported feelings of increased well-being and confidence [is]…important and compelling in its own right" (para. 22). If additional future studies were to include measures addressing such outcomes, the breadth of impact of coaching in supporting a wider range of functional improvements for individuals with ADHD would be elucidated.

Functional impairment is receiving increasing attention as an important aspect of ADHD (Epstein & Weiss, 2012; Sjöwall & Thorell, 2014; Soendergaard

et al., 2015; Weiss, 2017). Both functional impairment and adaptive functioning may be other confounding factors to examine and/or outcomes worth measuring in future research. One study of coaching for college students used the Life Participation Scale-Adult, considered a measure of adaptive functioning (Saylor et al., 2007). Additionally, The LASSI was a common measure of EF outcomes used in studies of coaching for college students, and might be considered a reasonable measure of functional impairment related to academics. Other measures, such as the Behavior Rating Inventory of Executive Functions-Adult Version, used in one study among college students, or the Barkley Deficits in Executive Functioning Scale (BDEFS; Barkley, 2011), might examine EF more broadly and could allow easier comparison to the examination of EF in other types of research.

Additionally, while "objective" outcome measures of coaching were used in several studies (e.g., grades, behavioral observations, and teacher, parental or spousal reports) most research on ADHD coaching, including that among college students, has used participant self-report on measures such as the LASSI, the S-DSS and others. While most studies used valid, reliable scales, the future use of outcome measures that do not rely solely on participant self-report might corroborate and strengthen study findings (c.f. Bloeman et al., 2007; Swartz et al., 2005).

A number of studies explored subjective views, in small numbers of participants (study ns ranging from six to 19), of the benefits of working with a coach: college student participants cited improvements in arenas such as decision-making and goal attainment; self-awareness; productive beliefs; management of non-clinical levels of stress or anxiety; and both optimism and quality of life (Maitland et al., 2010; Parker & Boutelle, 2009; Parker et al., 2013; Parker, et al., 2011; Richman et al., 2014; see also Deal et al., 2015). Findings from several studies of college students and adults also suggest that participants endorse coaching as a unique partnership meeting needs not adequately addressed by other personal or professional relationships, including academic advising, tutoring, or therapy (Kubik, 2010; Parker et al., 2013; Parker et al., 2011). Reaser (2008), offering an eight-session coaching intervention, found that students wished more sessions had been offered. Nine studies, among children and college students, also report participant expressions of high satisfaction with coaching (see Table 5). These qualitative findings add texture and support to the quantitative reports of beneficial outcomes of ADHD coaching.

Implications

Research has demonstrated that students with ADHD often face a difficult adjustment to college and are less likely to graduate. Data from the National Longitudinal Transition Study-2 (NLTS-2; Newman et al., 2011) indicated that students with disabilities, including ADHD (or "other health impairment"), are going to college in greater numbers and, yet, are significantly less likely to seek accommodations in college than in high school (only 28% do so). This may be due, at least in part, to stigma concerns (Kranke, Jackson, Taylor, Anderson-Fye, & Floersch, 2013). (It is interesting to note that some coaching programs, through educating students about ADHD, are able to directly address the issue of (self-)stigma; see Goudreau & Knight, 2015). Newman et al. (2011) report that 25%, of students, or fewer, receiving supports in high school received accommodations in college. Additionally, a study among first year college students with and without ADHD, found that ADHD did not predict higher use of services on campus (Gormley, DuPaul, Weyandt, & Anastopoulos, 2016).

It also seems apparent that challenges faced by students with ADHD in higher education are not being adequately met by current support services, even for those who do receive them. According to the NLTS-2, 12% of students receiving support in postsecondary settings rated the assistance as "not very" or "not at all adequate," and an additional 33% rated these supports as only "somewhat useful" (Newman et al., 2011, p. 36). Gormley et al. (2016) examined predictors of academic performance and found that typically available academic services were not independently related to GPA for students with ADHD. Other studies have also suggested that various common accommodations are "either ineffective or equivocal" (Gormley et al., 2016, p. 2). For example, DuPaul et al. (2017) found that tutoring did not significantly impact the GPA of students with ADHD. Additionally, the NLTS-2 reported that 34%-40% of postsecondary students considered to have disabilities in high school sought help outside of that available in their current settings (Newman et al., 2011). Reports of higher rates of class withdrawal and probation, as well as lower likelihood of graduation than typically developing peers, also point to inadequate support.

Given both the growing number of college students with ADHD/EF issues, and the suggestion in the literature that currently existing support services may not be adequate, the emerging body of research demonstrating the potential effectiveness of coaching as a support for student success may be of interest to institutes of higher education. In fact, the research

on ADHD coaching suggests that, whether alone or as part of a broader service-delivery model, coaching may be a useful adjunct to current services in that it promotes student executive functioning and related academic skills (and GPA in one study), as well as bolsters self-esteem and supports well-being. In this way, ADHD coaching may be an effective approach for improving motivation, academic skills, self-efficacy, achievement, persistence, and, ultimately, retention among college students with ADHD (see, e.g., Robbins et al., 2003, Robbins et al., 2004; Tinto, 1975, 1993).

While it seems likely that coaching may augment other valued and evidence-based practices in supporting students with ADHD, such as the use of accommodations, assistive technology, writing centers, tutoring, and mental health counseling, little research to date has directly explored the role that various of these factors play, individually or in concert, in promoting student success (see Gormley et al., 2016). Future research might beneficially examine these questions. Although future research might also specifically explore more directly the impact of coaching on retention, it seems reasonable to hypothesize that any improvements found in student executive functioning and well-being might ultimately have a positive impact on retention.

As discussed in Newman et al. (2011), some 45% of students in postsecondary settings are at least somewhat dissatisfied with the support services available on campus, and some 34% to 40% seek supports outside of their academic settings; this suggests that students recognize the need for support even if they are not seeking or finding it in their schools, and even if stigma is a concern. In this regard, it is interesting to note that coaching is generally understood to be a "wellness model" as it focuses more on self-awareness, empowerment, self-determination, and the development of skills and strategies than do most other models of service delivery and support. In fact, ADHD coaching closely parallels health and wellness coaching in its definition and approach (see Wolever et al., 2013). It could be hypothesized that the emergence of a "wellness" model such as ADHD coaching might offer college administrators a new tool for promoting retention that more students with disabilities might find less stigmatizing. In fact, in this vein, a recent study in the Netherlands found that adults with ADHD prefer coaching, even with its out-of-pocket costs, over public mental health care (Schrevel, Dedding, & Bourse, 2016).

ADHD coaching originally developed as a private-practice model. One approach supporting student access to ADHD coaching in the private sector is for an educational institution to develop a referral lists to coaches in its geographic locale. As an example of this latter approach, the first author of this study is on a referral list at several local institutions. In fact, the research conducted by Parker et al. (2011), Field et al. (2010a, 2013), and Parker et al. (2013) was based on a private-practice model, with coaches often at a geographic distance from students. Since coaching is often conducted by telephone or video-conferencing, geographic proximity is not required.

The evolution and integration of other evidence-based practices for students with disabilities, such as the Strategic Instruction Model (SIM)™ (see e.g., Deschler & Lenz, 1989; Strategic Instruction Model, n.d.) may suggest approaches for integrating ADHD coaching as a service offered directly in varied educational settings. In fact, Prevatt (2016) reviewed several programs similar to a combination of strategic instruction and coaching. At the same time, ADHD coaching is a model of student support that some higher education settings have already begun to integrate as part of on-campus services (Parker et al., 2011). For example, Landmark College, a two-year college focused on students with ADHD and LDs, has had an EF coaching program in place since 2004, available to all students as part of their tuition fees (Parker & Boutelle, 2009). Students in this program typically "choose to work on organization, time management, timely work completion, stress management, and academic/personal life balance" (p. 206). DuPaul et al. (2017) found that among students receiving coaching at a college targeting students with ADHD and/or LDs, and making coaching readily available, it is "students with ADHD who obtain the greatest gains in GPA" (abstract). Lynn University's Institute for Achievement and Learning has developed an executive functioning-oriented coaching program that assists students with ADHD (and/or learning disabilities) during their first year of college to improve their ability to manage the often-challenging transition from high school to college (Goudreau & Knight, 2015). A separate model, proposed and tested with five students at a college "that exclusively serves students with learning disabilities, ADHD, and autism spectrum disorder" involves a coaching approach to academic advising: "integrating intrusive advising practices with components of ADHD coaching" (D'Alessio & Banerjee, 2016, p. 113).

To provide access for students with ADHD, higher educational institutions could consider a variety of approaches, such as any of the following: obtaining ADHD coach training for disability services staff, or others (c.f., D'Alessio & Banerjee, 2016); hiring trained, certified ADHD coaches; and/or developing

referral list of trained, certified ADHD coaches. In addition, postsecondary settings incorporating any of these models of providing coaching services to students could contribute to the field by conducting informal or formal research on the impact of coaching on student outcomes to share with the field through journals, through conferences, or even informally in newsletters or list-serve discussions.

Conclusions

To provide the most comprehensive possible review of the research on outcomes of ADHD coaching, we chose to include studies from peer-reviewed journals, which comprised 16 of the studies reviewed, as well as three studies from what is typically called grey literature (i.e., a book and both a conference presentation and a dissertation identified through a generic Google search). While some may consider inclusion of grey literature in a review a limitation, due to concerns that it is not peer-reviewed and may be of lower methodological quality, grey literature can be an important source in a comprehensive review. In fact, it may demonstrate a lower intervention effect than do published studies (Hopewell, McDonald, Clark, & Egger, 2007) and may mitigate to some extent concerns related to publication bias (Gopalakrishnan & Ganeshkumar, 2013). Perhaps for these reasons, acceptance of including grey literature in systematic reviews has increased (Tetzlaff, Moher, Pham, & Altman, 2006).

A meta-analysis combining data from studies, and following guidelines such as PRISMA (Moher, Liberati, Tetzlaff, & Altman, 2009), is a stronger study design than a descriptive review. However, since the extant research literature on ADHD coaching included only two randomized controlled trials, and the 10 studies on coaching for college students included two purely qualitative studies and five studies with fewer than ten intervention subjects, we did not consider a meta-analysis of the ADHD coaching literature, or the use of pooled estimates, appropriate. At the same time, a review of the literature to date seemed timely and useful. While many narrative reviews introduce bias by their focus on a subset of the literature in a given subject area, this review is more consistent with a systematic review in that it is comprehensive (Uman, 2011), although the research was not systematically evaluated based on its methodological quality or on individual study sources of bias. We simply summarized results and presented the key points of each paper.

To be comprehensive and systematic, we included in this review studies with varied designs; varied population ages; varied methods of ADHD diagnosis in participants; varied outcome variables and approaches to measurement; and even sample sizes as small as one (a case study). In any comprehensive review, heterogeneity in samples and variables examined can create a problem for comparison of results (Gopalakrishnan & Ganeshkumar, 2013). In this review, integrating findings from quantitative and qualitative studies is one such concern. However, the fact that varied study designs point to similar conclusions in this body of research may add credibility to the fairly consistent findings in these studies. At the same time, while we suggest directions in the evidence provided by the reviewed studies, generally small sample sizes limit the strength of conclusions that can be drawn.

An additional limitation of this study concerns the fact that three of the four authors of this review are ADHD coaches, possibly introducing unintentional bias into the interpretation of the literature.

Future research on ADHD coaching will benefit from improved methodological approaches, including use of control groups and randomization, longitudinal designs, and setting more stringent inclusion/exclusion criteria, including reliable, replicable approaches to identification of ADHD. As suggested by Tables 2 and 3, future studies may also target emerging questions regarding the impact of additional potentially confounding variables on coaching outcomes, through data collection, reporting, and analysis. Future research may also shed further light on ADHD coaching efficacy among college students, and other age groups, and could begin to look more specifically at factors supporting the impact of coaching on student success. Retention could also be directly investigated in future ADHD coaching research.

Limitations evident in the extant body of literature notwithstanding, research to date consistently suggests that ADHD coaching supports improved outcomes in varied realms of ADHD and EF symptoms, as well as in well-being. This is true across varied types of study designs; across both peer and "trained coach" approaches; across several individual coaching models, and also in group coaching; and not only among college students, but across varied age groups. For these reasons, ADHD coaching appears to be a useful and valued service deserving increased attention as part of a multimodal treatment approach for individuals with ADHD. The 10 studies that focused on coaching and college students clearly suggest that ADHD coaching may not only be a useful aspect of multimodal treatment, but also a valuable and effective student support service for colleges and universities to explore.

References

Advokat, C., Lane, S. M., & Luo, C. (2011). College students with and without ADHD: Comparison of self-report of medication usage, study habits, and academic achievement. *Journal of Attention Disorders, 15*, 656-666.

Ahmann, E., Saviet, M., & Tuttle, L. (2017). Interventions for ADHD in children and teens: A focus on ADHD coaching. *Pediatric Nursing, 43*(3), 121-131.

Barkley, R. A. (2011). *Barkley Deficits in Executive Functioning Scale* (BDEFS) Manual. New York, NY: Guilford.

Barkley, R. A. (Ed.). (2015). *Attention-deficit hyperactivity disorder: A handbook for diagnosis and treatment* (4th ed.). New York, NY: Guilford.

Barkley, R. A., Murphy, K. R., & Fischer, M. (2010). *ADHD in adults: What the science says*. New York, NY: Guilford Press.

Bean, J. P. (1985). Interaction effects based on class level in an explanatory model of college student dropout syndrome. *American Educational Research Journal, 22*, 35-64.

Biederman, J., Petty, C. R., Evans, M., Small, J., & Faraone, S. V. (2010). How persistent is ADHD? A controlled 10-year follow-up study of boys with ADHD. *Psychiatry Research, 177*, 299-304.

Blase, S. L., Gilbert, A. N., Anastopoulos, A. D., Costello, E. J., Hoyle, R. H., Swartzwelder, H. S., & Rabiner, D. L. (2009). Self-reported ADHD and adjustment in college: Cross-sectional and longitudinal findings. *Journal of Attention Disorders, 13*, 297-309.

Bloemen, I., Verbeeck, W., & Tuinier, S. (2007). The effect of group coaching in adult ADHD. *European Psychiatry, 22*(suppl. 1), S205.

Cox, E., Bachkirova, T., & Clutterbuck, D. (Eds.). (2014). *The complete handbook of coaching* (2nd ed.). Thousand Oaks, CA: Sage Publications, Inc.

D'Alessio, K. A., & Banerjee, M. (2016). Academic Advising as an Intervention for College Students with ADHD. *Journal of Postsecondary Education and Disability, 29*, 109-121.

Dawson, P., & Guare, R. (2000). *Coaching the ADHD student*. North Tonawanda, NY: Multi-Health Systems.

Dawson, P., & Guare, R. (2012). *Coaching students with executive skills deficits.* New York, NY: Guilford.

Deal, L. S., Sleeper-Triplett, J., DiBenedetti, D. L., Nelson, L., McLeod, L., Haydysch, E. E., & Brown, T. M. (2015). Development and validation of the ADHD Benefits of Coaching Scale (ABCS). *Journal of Attention Disorders, 19*, 191-199.

Deshler, D. D., & Lenz, B. K. (1989). The strategies instructional approach. International Journal of Disability, *Development and Education, 36*, 203-224.

Downey, M. (2001). *Effective coaching.* London, England: Texere Publishing Limited.

DuPaul, G. J., Dahlstrom-Hakki, I., Gormley, M. J., & Banerjee, M. (2017, January). College students with ADHD and LD: Effects of support services on academic performance. *Learning Disabilities Research and Practice.*

DuPaul, G. J., Weyandt, L. L., O'Dell, S. M., & Varejao, M. (2009). College students with ADHD: Current status and future directions. *Journal of Attention Disorders*, *13*, 234-250.

Epstein, J. N., & Weiss, M. D. (2012). Assessing treatment outcomes in attention-deficit/hyperactivity disorder: A narrative review. *Primary Care Companion CNS Disorders 14*(6), pii.

Evans, S. W., Schultz, B. K., & DeMars, C. E. (2014). High school-based treatment for adolescents with attention-deficit/hyperactivity disorder: Results from a pilot study examining outcomes and dosage. *School Psychology Review, 43*, 185-202.

Farrell, E. F. (2003). Paying attention to students who can't. *Chronicle of Higher Education, 50*(5), A50-51.

Favorite, B. (1995). Coaching for adults with ADHD: The missing link between the desire for change and achievement of success. *ADHD Report, 3*, 11-12.

Field, S., Parker, D., Sawilowsky, S., & Rolands, L. (2010a). *Quantifying the effectiveness of coaching for college students with attention deficit/hyperactivity disorder: Final report to the Edge Foundation.* Retrieved from http://docplayer.net/11855521-Quantifying-the-effectiveness-of-coaching-for-college-students-with-attention-deficit-hyperactivity-disorder.html

Field, S., Parker, D., Sawilowsky, S., & Rolands, L. (2010b). *College Well-Being Scale*. Detroit, MI: Wayne State University College of Education.

Field, S., Parker, D. R., Sawilowsky, S., & Rolands, L. (2013). Assessing the impact of ADHD coaching services on university students' learning skills, self-regulation, and well-being. *Journal of Postsecondary Education and Disability, 26*, 67-81.

Garcia Ron, A., Serrano Grasa, R., Blanco Lago, R., Huete Hernani, B., & Pérez Martinez, D. A. (2016). Pilot study of the efficacy of empowering patients through coaching as a complementary therapy in attention deficit hyperactivity disorder *Neurologia (English Ed.), 31*, 83-88.

Garnier-Dykstra, L. M., Pinchevsky, G. M., Caldeira, K. M., Vincent, K. B., & Arria, A. M. (2010). Self-reported adult attention-deficit/hyperactivity disorder symptoms among college students. *Journal of American College Health, 59*, 133-136.

Gopalakrishnan, S., & Ganeshkumar, P. (2013). Systematic reviews and meta-analysis: Understanding the best evidence in primary healthcare. *Journal of Family Medicine and Primary Care, 2*(1), 9-14.

Goudreau, S. B., & Knight, M. (2015, April). Executive function coaching: Assisting with transitioning from secondary to postsecondary education. *Journal of Attention Disorders. Online First*.

Gormley, M. J., DuPaul, G. J., Weyandt, L. L., & Anastopoulos, A. D. (2016, January). First-year GPA and academic service use among college students with and without ADHD. *Journal of Attention Disorders. Online First.*

Grant, A. M., & Stober, D. R. (2006). Introduction. In D. R. Stober & A. M. Grant (Eds.), *Evidence based coaching handbook* (pp. 1-14). Hoboken, NJ: Wiley & Sons.

Hinshaw, S. P., & Arnold, L. E. (2015). Attention-deficit hyperactivity disorder, multimodal treatment, and longitudinal outcome: Evidence, paradox, and challenge. *Wiley Interdisciplinary Reviews. Cognitive Science, 6*(1), 39-52.

Hallowell, E., & Ratey, J. (1994). *Driven to distraction: Recognizing and coping with attention deficit disorder from childhood through adulthood.* New York, NY: Pantheon.

Hoffman, A., Field, S., & Sawilowsky, S. (2004). *Self-Determination Assessment Battery*. Detroit, MI: Wayne State University.

Hopewell, S., McDonald, S., Clarke, M., & Egger, M. (2007). Grey literature in meta-analyses of randomized trials of health care interventions. *Cochrane Database Systematic Reviews, 2*(2).

ICF. (2007). *Code of ethics*. Retrieved from https://lifetothefullcoaching.files.wordpress.com/2007/09/icf-code-of-ethics.pdf

ICF. (2015, June). *Code of ethics (Rev.)*. Washington, DC: Author. Retrieved from http://coachfederation.org/about/ethics.aspx?ItemNumber=854

Knouse, L. E., Cooper-Vince, C., Sprich, S., & Safren, S. A. (2008). Recent developments in the psychosocial treatment of adult ADHD. *Expert Review in Neurotherapy, 8*, 1537-1548.

Knouse, L. E., & Fleming, A. P. (2016). Applying cognitive-behavioral therapy for ADHD to emerging adults. *Cognitive and Behavioral Practice, 23*, 300-315.

Kooij, J. S. (2013). Pharmacological treatment of ADHD in adults. *European Psychiatry, 28*(suppl 1), 1.

Kranke, D., Jackson, S. E., Taylor, D. A., Anderson-Fye, E., & Floersch, J. (2013). College student disclosure of non-apparent disabilities to receive classroom accommodations. *Journal of Postsecondary Education and Disability, 26*, 35-51.

Kubik, J. A. (2010). Efficacy of ADHD coaching for adults with ADHD. *Journal of Attention Disorders, 13*, 442-453.

Lambert, M. J., & Finch, A. E. (1999). The Outcome Questionnaire. In M. E. Maruish (Ed.), *The use of psychological testing for treatment planning and outcomes assessment* (2nd ed.) (pp. 831-869). Mahwah, NJ: Erlbaum.

Lotkowski, V., Robbins, S. B., & Noeth, R. J. (2004). The role of academic and non-academic factors in improving college retention. *ACT Policy Report.* Retrieved from http://files.eric.ed.gov/fulltext/ED485476.pdf

Maitland, T., Richman, E., Parker, D., & Rademacher, K. (2010, July). *The impact of coaching on academic success: A focus on university students with learning disabilities and attention deficit/hyperactivity disorder.* Paper presented at the conference of AHEAD: Association on Higher Education and Disability, Denver, CO.

Merriman, D. E., & Codding, R. S. (2008). The effects of coaching on mathematics homework completion and accuracy of high school students with attention-deficit/hyperactivity disorder. *Journal of Behavioral Education, 17*, 339-355.

Moher, D., Liberati, A., Tetzlaff, J., Altman, D.G., The PRISMA Group. (2009). Preferred reporting items for systematic reviews and meta-analyses: The PRISMA Statement. *PLoS Medicine, 6*(7).

Murphy, K. R. (2015). Psychological counseling of adults with ADHD. In R. A. Barkley (Ed.), *Attention-deficit hyperactivity disorder: A handbook for diagnosis and treatment* (4th ed.) (pp. 741-756). New York, NY: Guilford.

Newman, L., Wagner, M., Knokey, A. M., Marder, C., Nagle, K., Shaver, D. . . . Schwarting, M. (2011). Section 2. Postsecondary education. In *The post-high school outcomes of young adults with disabilities up to 8 years after high school: A report from the National Longitudinal Transition Study-2* (NLTS2), NCSER 2011-3005 (pp. 15-51). Menlo Park, CA: SRI International.

Outten, C. (2016). *Gray literature.* CSULB Library Guide. Long Beach: California State University, Long Beach.

Parker, D. R., & Boutelle, K. (2009). Executive function coaching for college students with learning disabilities and ADHD: A new approach for fostering self-determination. *Learning Disabilities Research & Practice, 24*, 204-215.

Parker, D. R., Field, S., Sawilowsky, S., & Rolands, L. (2013). Self-control in postsecondary settings: Students' perceptions of ADHD college coaching. *Journal of Attention Disorders, 17*, 215-232.

Parker, D. R., Hoffman, S. F., Sawilowsky, S., & Rolands, L. (2011). An examination of the effects of ADHD coaching on university students' executive functioning. *Journal of Postsecondary Education and Disability, 24*, 115-132.

Pehlivanidis, A. (2012). Awareness of adult attention-deficit/hyperactivity disorder (ADHD) in Greece. *Psychiatriki, 23*(suppl. 1), 60-65.

Peterson, C. (2004). *Authentic Happiness Inventory.* Ann Arbor: University of Michigan.

Pfiffner, L. J., & DuPaul, G. J. (2015). Treatment of ADHD in school settings. In R. A. Barkley (Ed.), *Attention-deficit hyperactivity disorder: A handbook for diagnosis and treatment* (4th ed.) (pp. 596-629). New York, NY: Guilford.

Plumer, P. J., & Stoner, G. (2005). The relative effects of classwide peer tutoring and peer coaching on the positive social behaviors of children with ADHD. *Journal of Attention Disorders, 9*, 290-300.

Prevatt, F. (2016). Coaching for college students with ADHD. *Current Psychiatry Reports, 18*, 110.

Prevatt, F., Lampropoulos, G. K., Bowles, V., & Garrett, L. (2011). The use of between session assignments in ADHD coaching with college students. *Journal of Attention Disorders, 15*, 18-27.

Prevatt, F., & Levrini, A. (2015). *ADHD coaching: A guide for mental health professionals.* Washington, DC: American Psychological Association.

Prevatt, F., Smith, S. M., Diers, S., Marshall, D., Coleman, J., Valler, E., & Miller, N. (2017, January 19). ADHD coaching with college students: Exploring the processes involved in motivation and goal completion. *Journal of College Student Psychotherapy. Online First.*

Prevatt, F., & Yelland, S. (2015). An empirical evaluation of ADHD coaching in college students. *Journal of Attention Disorders, 19*, 666-677.

Prevatt, F. A., & Young, J. (2014). Recognizing and treating attention deficit/hyperactivity disorder in college students. *Journal of College Student Psychotherapy, 28*, 182-200.

Professional Association of ADHD Coaches. (2015). *PAAC Code of Ethics*. Retrieved from http://paacoaches.org/paac-ethics/

Quinn, P. O., Ratey, N. A., & Maitland, T. L. (2000). Working with an ADD coach. In P. O. Quinn, N. A. Ratey, & T. L. Maitland (Eds.), *ADD and the college student: A guide for high school and college students with attention deficit disorder* (pp. 99-109). Washington, DC: Magination Press.

Rabiner, D. (2014, March 19). Does coaching help college students with ADHD? *Mind Launch.* [Web log post; originally published in Attention Research Update].

Ramsay, J. R. (2010). *Nonmedication treatments for adult ADHD: Evaluating impact on daily functioning and well-being.* Washington, DC: American Psychological Association.

Ramsay, J. R., & Rostain, A. L. (2016). Adult attention-deficit/hyperactivity disorder as an implementation problem: Clinical significance, underlying mechanism, and psychosocial treatment. *Practice Innovations, 1*(1), 36-52.

Reaser, A. L. (2008). *ADHD coaching and college students.* (Unpublished doctoral dissertation). Florida State University, Tallahassee, FL..

Richman, E. L., Rademacher, K. N., & Maitland, T. L. (2014). Coaching and college success. *Journal of Postsecondary Education and Disability, 27*, 33-52.

Robbins, S. B., Davenport, M., Anderson, J., Kliewer, W., Ingram, K., & Smith, N. (2003). *The role of motivation and self-regulatory behaviors on first-year college adjustment.* Unpublished manuscript. Iowa City, IA: ACT. Cited in Lotowski, V. A.,

Robbins, S. B. & Noeth, R. J. (2004). *The role of academic and non-academic student factors in improving college retention: ACT policy report.* Iowa City, IA: ACT.

Robbins, S. B., Lauver, K., Le, H., Davis, D., Langley, R., & Carlstrom, A. (2004). Do psychosocial and study skill factors predict college outcomes? A meta-analysis. *Psychological Bulletin, 130,* 261-288.

Rosenberg, M. (1965). *Society and the adolescent self-image*. Princeton, NJ: Princeton University Press.

Roth, R., Isquith, P., & Gioia, G. (2005). *BRIEF-A: Behavior Rating Inventory of Executive Functioning. Adult version: Professional manual.* Lutz, FL: Psychological Assessment Resources.

Sarkis, E. (2014). Addressing attention-deficit/hyperactivity disorder in the workplace. *Postgraduate Medicine, 126*(5), 25-30.

Saylor, K., Buermeyer, C., Sutton, V., Faries, D., Khan, S., & Schuh, K. (2007). The Life Participation Scale for Attention-Deficit/Hyperactivity Disorder–Child Version: Psychometric properties of an adaptive change instrument. *Journal of Child and Adolescent Psychopharmacology, 17*, 831-842.

Saylor, K. E., Sutton, V. K., & Khan, S. A. (n.d.). *Development of an adaptive behavioral change measure for adult ADHD: The Life Participation Scale for Adults* [Data on file]. Herndon, VA: NeuroScience, Inc.

Schrevel, S. J. C., Dedding, C., & Bourse, J. E. (2016). Why do adults with ADHD choose strength-based coaching over public mental health care? A qualitative case study from the Netherlands. *SAGE Open, July-September, 1-18*.

Sherer, M., Maddux, J. E., Mercandante, B., Prentice-Dunn, S., Jacobs, B., & Rogers, R. W. (1982). The Self-Efficacy Scale: Construction and validation. *Psychological Reports, 51*, 663-671.

Sibley, M. H., Swanson, J. M., Arnold, L. E., Hechtman, L. T., Owens, E. B., Stehli, A.…Pelham, W. E.; MTA Cooperative Group. (2016). Defining ADHD persistence in adulthood: Defining sensitivity and specificity. *Journal of Child Psychology and Psychiatry*.

Sjöwall, D., & Thorell, L. B. (2014). Functional impairments in attention deficit hyperactivity disorder: The mediating role of neuropsychological functioning. *Developmental Neuropsychology, 39*, 187-204.

Soendergaard, H. M., Thomsen, P. H., Pedersen, P., Pedersen, E., Poulsen, A. E., Nielsen, J. M.… Soegaard, H. J. (2015). Education, occupation and risk-taking behaviour among adults with attention-deficit/hyperactivity disorder. *Danish Medical Journal, 62*(3), A5032.

Sterne, J. A. C., Egger, M., & Moher, D. (Eds.). (2011). Chapter 10: Addressing reporting biases. *Cochrane handbook for systematic reviews of interventions.* Version 5.1.0 (updated March 2011).

Stober, D. R., & Grant, A. M. (Eds.). (2006). Evidence based coaching handbook. Hoboken, NJ: Wiley & Sons.

Strategic Instruction Model. (n.d.). *SIM Website.* University of Kansas Center for Research on Learning. Retrieved from http://sim.kucrl.org/sim

Swartz, S. L., Prevatt, F., & Proctor, B. E. (2005). A coaching intervention for college students with attention deficit/hyperactivity disorder. *Psychology in the Schools, 42*, 647-656.

Tetzlaff, J., Moher, D., Pham, B., & Altman, D. (2006, October). Survey of views on including grey literature in systematic reviews. Presentation at the 14th Cochrane Colloquium, Dublin, Ireland. Cited in Chapter 10 "Addressing reporting biases." In J. P. T. Higgins & S. Green (Eds.), *Cochrane handbook for systematic reviews of interventions.*

Tinto, V. (1975). Dropout from higher education: A theoretical synthesis of recent research. *Review of Educational Research, 45*, 89-125.

Tinto, V. (1993). *Leaving college: Rethinking the cause and cures of student attrition* (2nd ed.). Chicago: University of Chicago.

Tuttle, L. J., Ahmann, E., & Wright, S. D. (2016 January). *Emerging evidence for the efficacy of ADHD coaching.* Poster presented at the Annual Meeting of the American Professional Society for ADHD and Related Disorders (APSARD), Washington, DC.

Uman, L. S. (2011). Systematic reviews and meta-analyses. *Journal of the Canadian Academy of Child and Adolescent Psychiatry. 20*, 57-59.

Vilardo, B. A., DuPaul, G. J., Kern, L., & Hojnoski, R. L. (2013). Cross-age peer coaching: Enhancing the peer interactions of children exhibiting symptoms of ADHD. *Child & Family Behavior Therapy, 35,* 63-81.

Weinstein, C. E., & Palmer, D. R. (2002). LASSI: *Learning and Study Strategies Inventory: User's manual* (2nd ed.). Clearwater, FL: H & H Publishing.

Weinstein, C. E., Palmer, D. R., & Acee, T. W. (2016). *LASSI user's manual* (3rd ed.). Clearwater, FL: H & H Publishing.

Weinstein, C. E., Schutte, A. C., & Palmer, D. P. (1987). *Learning and Study Strategies Inventory* (LASSI). Clearwater, FL: H & H Publishing.

Weiss, M. (2017, January). *Understanding and measuring impairment in ADHD.* Discussion session presented at the Annual Meeting of the American Professional Society for ADHD and Related Disorders (APSARD), Washington, DC.

Wentz, E., Nydén, A., & Krevers, B. (2012). Development of an Internet-based support and coaching model for adolescents and young adults with ADHD and autism spectrum disorders: A pilot study. *European Child and Adolescent Psychiatry, 21*, 611-622.

Weyandt, L. L., & DuPaul, G. J. (2013). *College students with ADHD: Current issues and future directions*. New York, NY: Springer.

Whitmore, J. (1992). *Coaching for performance.* London, England: Nicholas Brealey.

Wildflower, L., & Brennan, D. (2011). *The handbook of knowledge-based coaching*. San Francisco, CA: Jossey-Bass.

Williams, P., & Davis, D. C. (2007). T*herapist as life coach: An introduction for counselors and other helping professionals.* New York, NY: W. W. Norton.

Wolever, R. Q., Simmons, L. A., Sforzo, G. A., Dill, D., Kaye, M., Bechard, E. M.,…Yang, N. (2013). A systematic review of the literature on health and wellness coaching: Defining a key behavioral intervention in healthcare. *Global Advances in Health and Medicine, 2*(4), 38-57.

Wright, S. (2014). *ADHD coaching matters: The definitive guide.* College Station, TX: ACO Books.

Yin, R. (1993). *Applications of case study research*. Newbury Park, CA: Sage.

Yin, R. (1994). *Case study research: Design and methods* (2nd ed.). Thousand Oaks, CA: Sage.

Zwart, L., & Kallemeyn, L. (2001). Peer-based coaching for college students with ADHD and learning disabilities. *Journal of Postsecondary Education and Disability, 15*, 1-15.

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Table 1

ADHD Coaching Outcome Studies by Age Group, Number of Participants, and Research Design

Age Group	Number of Participants	Research Design	Study
Elementary Students	49	Prospective descriptive	Garcia Ron et al. (2016)
	4	Multiple baseline across-participant	Vilardo et al. (2013)
	3	Multiple baseline across-participant	Plumer & Stoner (2005)
High School Students	24 intervention; 12 comparison	Randomized controlled trial (with dosage analysis)	Evans et al. (2014)
	5	Case series	Dawson & Guare (2012)
	3	Multiple baseline across-participant	Merriman & Codding (2008)
Teens & Young Adults	10	Longitudinal mixed method	Wentz et al. (2012)
College Students	148	Prospective descriptive (with correlational component)	Prevatt & Yelland (2015)
	88 intervention; 39 comparison	Randomized controlled trial	Field et al. (2013)
	22 intervention; 20 comparison (11 adj. comparison)	Quasi-experimental	Zwart & Kallemeyn (2001)
	19	Qualitative	Parker et al (2013)
	16 intervention; 8 comparison	Mixed method (with non-equivalent comparison group	Richman et al. (2014)
	7	Mixed method with prospective component	Parker et al. (2011)
	7	Qualitative case series (with quantitative prospective component)	Reaser (2008)
	7	Phenomenological	Parker & Boutelle (2009)
	6	Mixed method with prospective component	Maitland et al. (2010)
	1	Case study (with quantitative prospective component)	Swartz et al. (2005)
Adults	45	Prospective (with additional quantitative components)	Kubik (2010)
	10	Prospective	Bloemen et al. (2007)

Table 2

Methods of Establishing an ADHD Diagnosis in Reviewed Studies of ADHD Coaching

Diagnostic Approach	Number of Studies
Submission of documentation to a university office for disability services of: ADHD (3 studies) or ADHD and/or learning disability (2 studies)	5
DSM-IV diagnosis	4
Physician's report and multiple rating scales	2
Self-reported prior diagnosis	2
Diagnosis from a licensed professional	1
Physician diagnosis or personal strong suspicion of having ADHD	1
Caregiver report on a structured interview or use of a teacher rating scale	1
Exhibition of symptoms in the classroom	1
Not reported	2

Table 3

Factors Potentially Related to Coaching Success

Factor	Number of Studies	Studies
Presence of comorbidities (varied findings)	4	Field et al. (2013); Garcia Ron et al. (2016); Prevatt & Yelland (2015); Zwart & Kallemeyn (2001)
Concurrent use of tutoring or therapy	4	Field et al. (2013); Parker et al. (2013); Parker et al. (2011); Kubik (2010)
ADHD subtype; symptom severity	2	Kubik (2010); Prevatt & Yelland (2015)
Use of/time spent on between-session assignments	1	Prevatt & Yelland (2015)
Initial level of client motivation	1	Prevatt & Yelland (2015)
Medication use	1	Kubik (2010)
Socioeconomic factors (e.g. maternal education)	1	Evans et al. (2014)

Note. Prevatt et al. (2011), not one of the 19 outcome studies examined, also found between session assignments to be an important factor in coaching success.

Table 4

Characteristics of ADHD Coaching Programs by Age Group, Type, Training, Frequency, and Study

Age Group	Type	Coach Training	Duration (Frequency)	Study
Elementary Students	Group	Formally trained coaches	5 sessions (monthly)	Garcia Ron et al. (2016)
	Individual	Peer coaches	18 + weeks (daily)	Vilardo et al. (2013)
	Individual	Peer coaches	12 weeks (3 days/week)	Plumer & Stoner (2005)
High School Students	Individual	Former teachers[a]	Avg. ~27 sessions (weekly)	Evans et al. (2014)
	Individual	School personnel (non-psychologist)[a]	Two marking periods (daily)	Dawson & Guare (2012)
	Individual	School psychologists[a]	~3 weeks (daily, with systematic fading)	Merriman & Codding (2008)
Teens & Young Adults	Individual	Clinical psychologist and educational therapist[a]	8 weeks (2 face-to-face and up to 14 Internet sessions, twice weekly)	Wentz et al. (2012)
College Students	Individual	Doctoral-level practicum students in psychology[a]	8 sessions (weekly)	Prevatt & Yelland (2015)
	Individual	Formally trained coaches	12-24 sessions (weekly over 2 semesters)	Richman et al. (2014)
	Individual	Formally trained coaches	Avg. 17-18 sessions (weekly)	Field et al. (2013)
	Individual	Formally trained coaches	Avg. 17-18 sessions (weekly)	Parker et al. (2013)
	Individual	Formally trained coaches	Semester (weekly)	Parker et al. (2011)
	Individual	Formally trained coaches	8-13 sessions (weekly in one semester)	Maitland et al. (2010)
	Individual	Formally trained coaches	10 sessions (weekly)	Parker & Boutelle (2009)
	Individual	Doctoral-level psychology student[a]	9 sessions (weekly)	Reaser (2008)
	Individual	Doctoral-level psychology student[a]	8 sessions (weekly)	Swartz et al. (2005)
	Individual	Peer coaches	2-10 sessions (weekly, in one semester)	Zwart & Kallemeyn (2001)
Adults	Group	Formally trained coach	7 sessions (6 weekly, 1 follow-up 1 month later)	Kubik (2010)
	Group	Training not specified	8 sessions (weekly)	Bloemen et al. (2007)

Note. Formally trained coaches were also certified by training organization and/or the International Coaching Federation. [a]Specified individuals were informally trained in using coaching approaches

Table 5

ADHD Coaching Outcomes and Associated Variables

Outcome Category	Outcomes	Studies
ADHD/EF symptoms and related behaviors (19 studies)	Improved social behaviors	Evans et al. (2014); Plumer & Stoner (2005); Vilardo et al. (2013)
	Improved grades	Dawson & Guare (2012); Merriman & Codding (2008); Parker et al. (2011)
	Pretest–posttest clinical, symptom, or functional improvement	Bloemen et al. (2007); Evans et al. (2014); Garcia Ron et al. (2016); Kubik (2010); Wentz et al. (2012)
	Qualitative reports of improvement in executive functioning skills and/or goal attainment	Maitland et al. (2010); Parker & Boutelle (2009); Parker et al. (2013); Parker et al. (2011); Reaser (2008); Richman et al. (2014) Swartz et al. (2005)
	Pretest–posttest improvement and greater improvement than a comparison group in total and/or multiple subscale scores on the LASSI	Field et al. (2013); Parker et al. (2013); Parker et al. (2011); Prevatt & Yelland (2015); Reaser (2008); Richman et al. (2014); Swartz et al. (2005); Zwart & Kallemeyn (2001)
Self-esteem, self-efficacy, well-being, quality of life (9 studies)	Pretest-posttest improvements in self-esteem or self-efficacy	Prevatt & Yelland (2015); Wentz et al. (2012); Zwart & Kallemyn (2001)
	Quantitative measures and qualitative reports of improvements in sense of coherence, life satisfaction, well-being and/or quality of life	Field et al. (2013); Maitland et al. (2010); Parker & Boutelle (2009); Parker et al. (2011); Prevatt & Yelland (2015); Wentz et al. (2012)
Improved family functioning (2 studies)	Reduced family impairment or improved quality of family life/normalization	Evans et al. (2014); Garcia Ron et al. (2016)
Satisfaction with coaching (9 studies)	Quantitative or qualitative reports of participant acceptability and/or high satisfaction with coaching, view of coaching as a helpful intervention	Garcia Ron et al. (2016); Merriman & Codding (2008); Parker & Boutelle (2009); Parker et al. (2013); Parker et al. (2011); Plumer & Stoner (2005); Reaser (2008); Vilardo et al. (2013); Wentz et al. (2012)
Maintenance of gains (3 studies)	Maintenance of coaching gains demonstrated over varied time frames	Kubik (2010); Merriman & Codding (2008); Wentz et al. (2012)