

Research Forum on Psychological Treatment of Adults With ADHD

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Background: A literature search found five empirical studies of psychological treatment for adults with ADHD, out of 1,419 articles on ADHD in adults. Practice guidelines to date all recommend multimodal intervention, given that a significant number of patients cannot tolerate, do not respond to, or fail to reach optimal outcomes with medication alone.

Method: This article provides a literature review and the recommendations of a forum of experts in the psychological treatment of adults with ADHD. **Results:** Empirical studies of brief, structured, and short-term psychological interventions for adults with ADHD to date demonstrate moderate to large effect sizes. Methodological challenges include selection of control groups, broad-based measures of outcome, and the need for larger samples. **Conclusion:** Psychological treatment may play a critical role in the management of adults with ADHD who are motivated and developmentally ready to acquire new skills as symptoms remit. (*J. of Att. Dis.* 2008; XX(X) xx-xx)

Keywords: ADHD; adult; psychosocial treatment; psychotherapy; cognitive behavioral therapy; dialectic behavioral therapy

The Canadian ADHD Resource Alliance and the American Psychiatric Association obtained an unrestricted educational grant from Shire pharmaceuticals to review and evaluate research to date on psychological intervention for adults with ADHD. There is a need for research on evidence-based psychological treatment of adults with ADHD, and this in turn requires methodological consensus to facilitate comparison of findings.

A literature search (PUB MED) using *ADHD* and *adult* as text words retrieved 1,419 articles, but the addition of the text words *psychological treatment*, *psychotherapy*, *cognitive behavioral therapy* (CBT), or *dialectic behavioral therapy* (DBT) yielded 37 references. Of these references, 5 studies represent open-label pre- and postevaluations of

Authors' Note: This article provides a written summary of a research focus group that took place at the annual meeting of the American Psychiatric Association in 2006. The meeting was sponsored by the Canadian ADHD Resource Alliance through an unrestricted educational grant from Shire pharmaceuticals. The article summarizes the key contributions of the participants, including Jim McGough, Annick Vincent, Martin Gignac, Craig Surman, Paul Hammerness, Tony Rostain, Russell Ramsay, Scott Kollins, Ross Clarke, Candice Murray, Lily Hechtman, Atilla Turgay, Susan Sprich, Stephen McDermott, Lily Hechtman, Candice Murray, J. Russell Ramsay, Anthony L. Rostain, Steven Safren, Mary V. Solanto, and Margaret Weiss. The event was facilitated and made possible by the continued efforts of Isabelle Poirier. Although the authors have borrowed heavily from the contributions of all the participants, the ideas expressed are the sole responsibility of the authors. Address correspondence to Margaret Weiss, Box 178, Children's and Women's Health Centre, 4500 Oak Street, Vancouver, BC V6H 3N1 Canada; e-mail: mweiss@cw.bc.ca.

specific psychological interventions tailored to adults with ADHD (Looper et al., 2001; Mandelbaum et al., 2002; Rostain & Ramsay, 2006; Solanto, Marks, Mitchell, Wasserstein, & Kofman, in press; Wilens et al., 1999). Two studies compared improvement in the treated sample to a wait-list control (Hesslinger et al., 2002; Wiggins, Singh, Getz, & Hutchins, 1999). Two studies (Safren, Otto, et al., 2005; Stevenson, Whitmont, Bornholt, Livesey, & Stevenson, 2002) are randomized control trials, of which 1 is based on published therapist and client manuals (Safren, Perlman, Sprich, & Otto, 2005; Safren, Sprich, Perlman, & Otto, 2005).

These articles reflect the growing awareness of the need to provide psychological treatment for the many patients. Half of adults with ADHD either cannot take medication, do not respond, or experience residual difficulty (Spencer, Biederman, & Wilens, 2000). The American ("Practice Parameters," 1997), Canadian (www.caddra.ca), and British practice guidelines (Nutt et al., 2007) all recommend that medication treatment be complemented by psychoeducation, support, and other nonpharmacological interventions (Gibbins & Weiss, 2007). Experts in the treatment of ADHD in adults have long been in agreement that adequate treatment of complex patients often involves more than just a prescription (Adler, 2004; Adler & Chua, 2002; Barkley, 2006; Liu & Stein, 2004; Murphy, 2005; Ratey, Greenberg, Bemporad, & Lindem, 1992; Robbins, 2005; Wender, 1998a, 1998b). This article reviews the literature to date, discusses methodological challenges in this area, identifies differences in the psychological treatment of adults and children, and makes recommendations for future research.

Literature Review

The first publication on the psychological treatment of ADHD in adults was that of John Ratey (Ratey et al., 1992), who conducted a retrospective chart review of 60 cases of adults with ADHD and concluded that ADHD was a neuropsychiatric syndrome, best managed by understanding the deficits in attention, arousal, and self-regulation. He suggested that the elements of therapy most likely to be helpful included (a) becoming educated about the disorder, (b) decreasing self-blame regarding core symptoms, (c) reducing automatic defenses against symptoms of ADHD, and (d) building on strengths. Ratey observed that psychoanalytic therapy had further worsened the patient's self-regard, an observation that implies that psychotherapies, like medication, can have unwanted side effects. He defined an intervention sequence from diagnosis, toward psychoeducation, medication trials,

and then psychological intervention to address skill deficits and impairments (Ratey, Hallowell, & Miler, 1997). The objective of treatment was to improve the core sense of self, change habitual modes of behaving, and teach the ADHD individuals techniques that will allow them to control the symptoms of ADHD rather than be controlled by them. All later research on psychological treatment for adults with ADHD has followed through on these ideas. The ingredients, which all the therapies described in this article have in common, include being structured, short term, and behavioral and also include psychoeducation about the disorder. The interventions vary in whether they are individual or group based and in whether they include the use of coaches.

Stephen McDermott (2000), Timothy Wilens (Wilens et al., 1999), and Steven Safren (Safren, Otto, et al., 2005; Safren, Sprich, Chulvick, & Otto, 2004) systematized these principles into a program of CBT for adults with ADHD. The principle behind adapting the CBT model to this condition was that negative cognitions further exacerbate task avoidance, negative affect, and lack of motivation, thus obstructing the potential for symptom control. Psychoeducation about the disorder, skills training, and suggestions for modifying the environment to minimize symptom impact were added to the core CBT program.

Open-Label Studies Evaluating Pre- and Postoutcome

Wilens et al. (1999) conducted a retrospective case review in which they looked at 26 patients, most of whom were on some medication, had had previous psychotherapy, and had significant comorbidity. All patients still had residual ADHD symptoms. CBT (McDermott, 2000) resulted in significant improvement in ADHD symptoms, anxiety, depression, and functioning. Wilens et al.'s article was the first publication to emphasize the importance of psychological treatment in providing an avenue of treatment for those who have a partial response to medication. Their application of McDermott's intervention was ambitious in that it attempted to target core neuropsychiatric symptoms of inattention, hyperactivity, and impulsivity per se, as well as the broader spectrum of associated problems faced by adults with ADHD. Of patients with partial improvement on medication, 69% showed further improvement in ADHD, anxiety, depression, and functioning with the addition of CBT. In the absence of a control group, this study could not differentiate the nonspecific effects of therapist attention and the effects of time from the specific effects of CBT. Two studies were conducted by the Montreal group (Looper et al., 2001), which developed a 12-week group program

with modules that address ADHD symptoms, organization, stress, anger management, and information on medication treatment. Posttreatment improvement was found on ADHD symptom scales, in psychopathology as measured by the Symptom Checklist-90 (SCL-90), in organizational skills, and in self-esteem. Rostain et al. conducted an open study in which 43 patients received combination treatment with medication and CBT. Patients who received combination treatment were found to improve on self-report of ADHD symptoms, anxiety and depression and clinician ratings of functioning (Ramsay & Rostain, 2008; Rostain & Ramsay, 2006).

The most recent study is that of Solanto et al. concerning a manualized group therapy program entitled Meta-Cognitive Therapy (MCT) that targets self-management executive function skills (in press). Cognitive-behavioral principles are employed to help patients assimilate and consistently utilize time-management, organization, and planning skills in the activities of daily life. Thirty patients with a confirmed diagnosis of ADHD and a T-score greater than 65 on the DSM-IV Inattentive symptoms scale of the Conners Adult ADHD Rating Scale (CAARS) completed treatment. Outcome was measured as the difference pre- and post-ratings on the CAARS, the Brown ADD scale, and a specific measure of executive function. Effect sizes of improvement over time were statistically significant, ranging from 1.1 to 1.6 for all outcomes, with the exception of hyperactive/impulsive symptoms. The authors are now in the process of testing meta-cognitive therapy against an attentional control group offering mutual support.

Controlled Studies

Wiggins et al. (1999) compared 9 adults with ADHD who received four sessions of intensive psychoeducation and active teaching on organization to a wait-list control of 8 adults with ADHD. Organization, attention, and emotional stability improved, whereas self-esteem deteriorated, hypothetically because of improved insight into self-perceived disability. The effect size comparing active and control treatments on organization was 1.7, attention 1.9, and emotional stability 1.3. A possible limitation of a wait-list control is frustration or perceived rejection because adults with ADHD typically find waiting frustrating. The small sample size, lack of control for medication, and the possible halo effects further limit this study when patients are aware of whether or not they have received treatment. Hesslinger et al. (2002) in Germany modified DBT (Linehan, 1993) for use with adults with ADHD on the presupposition that ADHD involves difficulty with self-regulation. Therapy modules included the neurobiology of ADHD, mindfulness, chaos and control, impulse control, behavior analysis, emotion regulation,

depression, medication in ADHD, stress management, dependency, effects of ADHD on interpersonal relationships, and self-respect. Hesslinger et al. compared 8 treated patients to those on the wait list, 4 of whom were lost to follow-up. The effect sizes for the treated group versus the control group were 2.2 for core ADHD symptoms, 0.99 for depression, and 1.35 for the SCL-16. The study therefore replicated the findings of Wiggins et al., with the same limitations. A randomized controlled trial of DBT for adult ADHD from this group is currently in progress.

Mandelbaum et al. (2002) reported a controlled trial of CBT in adults with ADHD in which there were no patients on medication and the comparator treatment was an attention control providing support. The CBT patients showed improvements in organization, self-esteem, family life, and anger management, but the results were modest compared to a previous study by the same group (Looper et al., 2001) in which patients were also medicated. The only improvement noted in those who received support was in occupational functioning. This study raises the possibility that the combined benefits of medication and CBT may be greater than either intervention alone.

Randomized Controlled Trials

In Australia, Stevenson et al. (2002) looked at cognitive remediation compared to a wait-list control. Stevenson et al. worked from a model wherein they attempted to apply techniques of cognitive remediation that had been successful with brain injury patients to adults with ADHD. The researchers targeted attention, motivation, organization, impulsivity, anger management, and self-esteem. Twenty-two participants were randomized to active treatment and 21 to a wait-list control. There were no changes in medication permitted during the course of the study. Treatment combined a group format with an individual coach to assist with implementation for each patient, thus obtaining benefit from the support of a group modality while assuring implementation and individualization of treatment. This Cognitive Remediation Program (CRP) attempted to retrain cognitive functions, teach compensatory strategies, and assist patients in restructuring work and home environments to optimize their capacity to function. Although the sample sizes were small, the effect size of treatment versus control for ADHD symptoms was 1.4 and for organization was 1.2. At 1-year follow-up, these improvements were still in place, but initial improvement in self-esteem and anger management had diminished. The presence or absence of medication or initial anxiety and depression did not seem to influence outcome. The conclusion was that it was possible to teach executive function skills to adults with ADHD using a brain injury model.

Following this study, Stevens and colleagues conducted a randomized controlled trial of CRP with minimal therapist contact (Stevenson, Stevenson, & Whitmont, 2003). This was self-directed treatment compared with a wait-list control. Patients received weekly treatment by telephone to assist them in carrying through the intervention described in the self-help manual. There were significant improvements found at the completion of treatment, and most of these gains were still apparent at the 2-month follow-up. It may be possible to incorporate some of the key ingredients of psychological treatment into office-based practice for patients who do not have access to specialized centers.

Safren, Otto, et al. (2005) used independent evaluators blind to treatment status and thus avoided the limitation of halo effects. Patients received either CBT with medication or medication alone. Similar to the open study conducted earlier by Wilens et al. (1999), combination therapy was superior to medication alone, with an effect size of 1.2 and with moderate effects on depression (0.65) and anxiety (0.55). Depression and anxiety improved as did ADHD, and the presence of internalizing symptoms did not moderate outcome.

All of these therapies (CBT, DBT, MCT, and CRP) were short-term, structured interventions modified to target the specific issues experienced by adults with ADHD, and despite differences in design and site, all of these empirical studies found large effect sizes for the primary outcome and more modest effects on self-esteem, anger management, and internalizing symptoms. The participants in these studies specifically consented to psychological treatment and were included as reasonable research participants, implying a level of motivation that may not be generalizable to all adults with ADHD. The use of various control groups (treatment as usual, wait list, or attention control with nonspecific support) suggests that these effects are specific to the intervention.

There are no studies comparing psychological treatment to medication or combination therapy to psychological treatment alone. There are no studies comparing different types of psychological intervention or the cost-effectiveness of group versus individual treatment. Future studies may consider employing more objective outcome measures. These may include blind employer reports, the adult laboratory classroom, driving simulators, executive function, drug use, sleep diaries, executive function measures, collateral from family members, or computerized testing. Patient ratings of satisfaction, including what they found most helpful, might guide future treatment directions. None of the therapies described above addressed effects on parenting, driving, substance use, or other areas of known impairment in ADHD, raising the

question as to whether specific modules to address these issues might be of use. College students, parents with ADHD, patients with problems with attention and executive function, and delinquent patients may benefit from further development of specific and targeted psychological interventions. The past 2 years have seen the publication of three books that manualize and review the clinical practice of psychological management of ADHD in adults (Safren, Perlman, et al., 2005; Safren, Sprich, et al., 2005; Ramsay & Rostain, 2008; Young & Bramham, 2007). Publication of treatment manuals facilitates comparison between treatments, permits identification of overlapping and distinct content, facilitates replication of studies, improves treatment fidelity, and permits application of treatment by clinicians in practice.

Methodological Standards for Future Research

The standard of practice for pharmacological research is the double-blind, placebo-controlled, randomized trial. In the following sections, we recommend standards of practice for research into psychological treatments.

Sample Bias

To determine the acceptability and usefulness of psychological treatment for the wide range of patients with ADHD, it may be necessary to use an intent-to-treat model. Such a study accepts a more naturalistic sample and randomizes patients to different types of interventions. This might permit us to determine the patient characteristics that predict differential response to different treatment modalities. It may also be important to use wider inclusion and exclusion criteria than are typically employed in pivotal medication trials to determine impact of demographic characteristics, comorbidity, and other variables on outcome of therapy.

Control Groups

There is no simple equivalent to the placebo group in psychological research. The use of wait-list controls, crossover designs, attention controls, comparator therapies, and treatment as usual in the community complement each other in identifying the specific ingredients of therapeutic impact. It is impossible to blind patients to whether or not they are receiving psychotherapy in the way that we do using a placebo medication, but it is possible to determine whether patients randomized to different treatments have differential outcomes irrespective of expectations or preferences.

One potential difficulty in devising a control condition for use in studies with ADHD patients is that due to the symptoms of the disorder, patients with ADHD may be a higher risk for dropout when there are not immediate gains from an intervention than are individuals with other disorders. This could lead to higher and selective attrition and thus weaken the chances for finding a significant experimental difference. Hence, there may be reasons to advance psychotherapy trials that employ controls consisting of treatment as usual or minimal treatment.

It is notable that no study to date has done a head-to-head comparison of psychological versus medication treatment. We assume that the standard of care and first line for treatment of ADHD in adults is medication. However, the literature review cited above suggests that such a study would be ethical in that the effect sizes of psychological treatment and medication treatment are, thus far, comparable, and a sizable proportion of adults with ADHD refuse, do not respond to, or have contraindications to medication treatment. Future studies should look at the duration of psychological treatment effects as well as interventions such as booster sessions that may improve the persistence of therapeutic effects.

Outcome Variables

Outcome of treatment varies with different primary outcome variables. There has been a recent trend in all research to broaden outcome measures to include more than core symptoms, which have been the traditional primary objective of pharmacological studies. If one focuses on effectiveness outcomes (Weiss, Gadow, & Wasdell, 2006) such as functional impairment, quality of life, patient satisfaction, and longer term impact, as opposed to focusing on short-term impact on core symptoms in controlled settings, then the relative benefit of psychological, medication, or combination treatment may change. For example, a patient enrolled in a stimulant trial may note marked improvement in losing things. The same patient in a psychotherapy study may still misplace his keys but now has multiple spare sets so that although the symptom is still present (losing things), the functional impact of the symptom is not. This is of particular interest in that it has now become standard to include functional and quality-of-life outcomes as secondary objectives of pharmacological studies as much as it has become standard to include measurement of core symptoms as a target of psychological treatment.

This trend toward measuring both functional and symptomatic outcomes is particularly salient in ADHD, where symptoms can be context dependent. For example, a patient

receiving medication in a clinical trial was attempting to complete his 1st year of college. His initial self-report of ADHD symptoms showed him to be 2 standard deviations from the norm, with major deficits in attention, disruptiveness, and self-regulation. He experienced modest improvement in symptoms with medication and did not feel he could manage college. He then quit school and got a job as a tree planter. Work as a tree planter capitalized on his high energy; was highly structured in a work camp setting; and required little, if any, attention to detail. His self-reported ADHD symptoms disappeared immediately: They were not evident in this setting. His ADHD symptoms improved dramatically. However, it is questionable whether this patient's quitting school represents actual functional improvement rather than a significant longer term loss of the potential earnings a college education would have afforded him. His improvement in symptoms was an artifact of eliminating the environmental challenges that brought his ADHD symptoms to awareness.

The way patients or independent evaluators rate symptoms usually defines a symptom as present even in the context of specific efforts to mitigate impact. For example, in medication trials, when a patient reports being able to focus on something if she increases her breaks, switches activities, and regroups, an independent evaluator may still rate the patient as distractible because she has to try to avoid distractions. On the other hand, if the patient has learned this skill successfully, this nonetheless represents significant functional improvement. There are different pathways to getting better. In a psychosocial treatment, the goal may be to use CBT skills to cope with the existing symptom instead of eliminating the neurological deficit per se.

One of the intriguing findings of the early studies of psychological interventions for adults with ADHD was a modest impact or even a negative impact on self-esteem. This suggests the need to look at self-esteem more critically and to identify whether it is possible to improve patients' insights into their disability while encouraging them to identify their strengths and to have confidence in their ability to succeed. Recent studies that include psychoeducation, which helps the patient work through the diagnosis, may have corrected this problem.

Individualizing Treatment

Research that reports statistical differences between randomized groups does not always allow for identification of which patients respond differentially to particular treatments. For example, research studies may specifically exclude patients with significant personality disorders,

current substance use, suicidal ideation, or other serious psychiatric problems, although these patients represent a significant proportion of the global population of adults with ADHD. Patients with limited education, low income, poor insight, and low IQ may respond less well to cognitively based therapies. Studies that require the patient to pay for treatment may have a significant treatment bias when compared with studies in which the treatment is provided free of charge. Future research will therefore need to identify the patient characteristics that are most likely to predict differential response to distinct therapy approaches.

Objectivity of Outcomes

The use of an independent evaluator is a method that attempts to eliminate the bias in reports of therapists who know whether the patient received the active treatment. This is equivalent to blinding the investigator in medication trials as to whether or not the patient is receiving the active drug or placebo. However, use of an independent evaluator has limitations. It does not control for the patient's awareness of whether he or she received active treatment. The independent assessor does not know the patient as well as the therapist does and therefore does not have the same level of information about the patient's functioning, improvements, or disabilities. The independent evaluator walks a fine line. The more information the evaluator obtains from the patient the more accurate the assessment. On the other hand, the more information the evaluator obtains, the less likely he or she is to remain completely blind to treatment assignment.

Psychological treatment includes a nonspecific component. Therapist skill and warmth can contribute to site-by-site differences even with manualized treatments and videotaped reliability ratings. Multisite studies can evaluate some of these differences and their etiology. Patient dropout and patient selection may vary between sites. Lastly, if these treatments are only as good as the skill of the therapist, then the next step in applying this research to a wide range of patients must include training programs and strategizing on how to implement modified techniques in office-based practice.

Response Over Time

To determine the durability of treatment response, it is necessary to evaluate outcome at the end of treatment and in follow-up. Because different treatments take different amounts of time to work, the first measurement of outcome should coincide with the known time course needed to respond to that treatment. For stimulant therapy, for example, response is evident within a couple of weeks.

For a 12-week group therapy program, it would be necessary to measure outcome after the 12 weeks of treatment are completed. For all types of therapy, evaluation of actual impact requires assessment of the maintenance of initial improvement over time and the identification of factors that determine the persistence of treatment effects. For example, it may be that the excellent short-term responses to medication are less impressive 1 year later when more than half of the participants are no longer adherent (Bussing et al., 2005; Marcus, Wan, Kemner, & Olfson, 2005; Miller, Lalonde, & McGrail, 2004). Longer term outcomes of psychological treatment may vary depending on whether the patient has consolidated the principles of problem solving and continued skill building. ADHD is also a chronic developmental and often persistent condition, and the assumption that any treatment will endure in the absence of follow-up may be unrealistic. This is suggested by the Multimodal Treatment of ADHD (MTA) findings in children, where persistence of specific treatment effects had all but disappeared over 3 years when treatment was being managed in the community (Jensen et al., 2007).

Given that we know that ADHD persists in a majority of adults through later years of adulthood and given that we know that there is continued psychological damage, secondary comorbidity (Kessler et al., 2006), and specific impairments, the durability of a treatment intervention is a critical dimension of outcome.

Extrapolation of Psychological Treatment Research in Children to Adults

There is a large body of research concerning psychological treatment of children with ADHD, which raises the issue of whether methods and/or findings of psychological research in children can be extrapolated to adults with ADHD. This issue becomes especially salient for clinicians faced with a relative paucity of evidence on psychological treatment in adults as compared with the widespread dissemination of comparator trials in children, such as the MTA study. The MTA study determined that children randomized to receive medication alone or in combination with psychological treatment had better outcomes with regard to ADHD symptoms than did children who received behavioral treatment or community care (MTA Cooperative Group, 1999a). Physicians assume that medication should be the first line and the standard of care for adults, although there is no comparable head-to-head comparator study to support this assumption in adult patients. It is therefore worthwhile to delineate the differences between adult and child patients that could influence either method or outcome.

An important difference between child and adult psychosocial treatments that rely on behavioral methods is that parents and teachers manipulate contingencies for children, reinforcing appropriate behaviors and withholding reinforcement for unacceptable behaviors. Adults with ADHD, by contrast, have to learn to self-administer reinforcements, despite their impulsivity and difficulty with consistency. Nonetheless, there is clinical evidence that adults with ADHD can implement such strategies. An example is that of a disorganized adult with ADHD who learned to defer the gratification of having a snack immediately after she arrived home each evening until she had taken a few minutes to sort out the mail.

The MTA identified moderators and mediators of outcomes that were associated with greater benefits from behavioral than from medication treatments (MTA Cooperative Group, 1999b). These included presence of comorbid conditions (such as anxiety or disruptive disorders) and family psychopathology. In addition, the relative difference between treatment arms varied according to the outcomes examined, such as patient satisfaction. When we consider the relevance of these variables to adults with ADHD, it becomes apparent that they are even more important in the adults than in children. Lifetime comorbidity in adults with ADHD accumulates so that a majority have a history of depression, substance use, or oppositional disorder (Biederman et al., 2006). Patient satisfaction is critical because adults who present for treatment are motivated to change. Parents and teachers refer children, often against the children's wishes or understanding.

Adults refer themselves, whereas parents bring their children to treatment. This means that adults come to treatment for problems that are difficult for *them*, whereas children come to treatment for problems that are problematic to someone else. The adult patient is often the informant, whereas the parent or teacher is typically the primary informant in child studies.

Psychological treatments that require insight into higher order abstractions may be challenging to young children. Although mothers may prefer talking therapy, young ADHD boys often feel this is a waste of time or even uncomfortable. By contrast, adults with ADHD have had the opportunity to learn on their own and over time what ADHD is and how it has affected them, and they can be highly motivated for any intervention that can assist them and bear witness to the struggles they face. These adults have made the connection between symptoms and functional impairment both in their life histories and currently. They are eager to have someone assist them in what they see as a battle that they otherwise fight alone.

Pills do not build skills. Functional improvement in an adult requires both improvement in core symptoms and the opportunity to develop and apply new skills. In children, this is self-evident. Once they are free of ADHD symptoms, children can make use of the daily opportunity to practice and develop executive function skills that is part of being in school. On the other hand, if an adult is less symptomatic but still unemployed and isolated and spends all day on the computer, he or she has no opportunity to develop and test the new skills that symptom remission might have otherwise enabled. In this case, symptom remission in the absence of rehabilitation has little impact.

Children are typically in school, and school is a particularly ADHD-unfriendly environment—children remain seated for long hours in a distracting milieu doing tasks they find boring with the opportunity to socialize within reach of the next desk. Adults with ADHD may find adaptive work environments better suited to their skills. They may be attracted to jobs that involve high levels of stimulation (the stock market), physical activity, or being on the move (restaurant server, truck driver); hyperfocus (pilot); chattiness (telemarketing or radio announcer); or bossiness (contractor). Many prefer to be self-employed to accommodate unusual sleep patterns or to work when it is quiet. In this case, the fit that is achieved in translating symptom remission into functional gains may require individualized interventions by the therapist. For example, a realtor presented for treatment. He had been quite successful, but not as successful as he would have been if he consistently completed the contracts for the deals he succeeded in acquiring. Here, the therapist recommended that he carry completed contracts with him on the road, prepared in advance by a junior assistant.

Adults with ADHD are trying to supervise others, including children, employees, and students. Many of the women we see who seek treatment do so because they had to live with their impairments as girls. They actively seek treatment when they realize that residual difficulties are having an impact on their families and parenting. These same women of childbearing age are responsible for the instrumental care of others. Clinical trials for medication exclude these women when they are still trying to bear children.

Executive function demands increase with age. Adults have to drive; manage money; take care of others; juggle work and home demands; and self-regulate nutrition, exercise, and sleep. Adults plan and prioritize constantly on both a micro- and macrolevel. These skills do not bounce into place when symptoms remit. Adults with ADHD need to become aware of what they can now do that they could not do before, and then they have to learn to do it.

In summary, there are multiple clinical differences between children and adults to suggest that psychosocial skill-building interventions will have a more prominent role in management of adults than of children.

Recommendations

This forum on psychological treatment of adults with ADHD concluded with the recommendations that follow. Research in adult ADHD has shown a disproportionate emphasis on medication as the standard of care, and the development of psychological treatment is a priority.

This research will need to address not only whether psychological treatment is helpful but also what types of psychological interventions are specific to particular areas of patient improvement and which patients are most likely to benefit.

This forum recommends the following methodological standards. A variety of different control groups may include randomization to receive either nonspecific therapist attention, wait-list control, treatment as usual, or a comparator treatment. The outcome needs to look at functioning, objective evidence of adaptive skills in daily management and at self-concept as well as symptoms. Independent evaluators may be used to circumvent therapist bias, and objective measures of improvement may be used to avoid bias in self-report. Multisite studies with larger sample sizes are required to determine the relative benefit of different therapeutic approaches for different types of patients and to determine the extent to which there are site-by-site differences. We cannot extrapolate child findings to adults. Demographic variables such as education, socioeconomic status, motivation, and degree of social comfort in the group situation may moderate impact of psychological treatment. Future studies should examine patient satisfaction and the patient's impressions of what was most useful. It would also be of value to know if treatment affects the specific areas of impairment known to be associated with ADHD, such as driving, performance at school and/or work, parenting, relationships, and compliance with substance abuse programs. Therapies specific to groups with particular needs (college students, parents, businesspersons) may be more effective than a more generic therapy applied to populations facing different challenges. Comparison between different types of approaches (individual vs. group, CBT vs. DBT) may be of value in helping us to understand what kinds of interventions affect what types of outcome. Lastly, use of an intent-to-treat model and measurement of outcomes in longer term follow-up is essential to determining the durability of treatment effects.

Adults and children with ADHD come to therapy with different developmental readiness and different environmental expectations such that psychological interventions may be more effective for adults. The research to date, although limited, strongly suggests that ADHD-specific, skill-based, structured, and brief psychological interventions for adults are effective. The standard of care at present is a careful clinical assessment and a trial of medication, but future research may demonstrate that optimal care also includes psychological intervention and rehabilitation.

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