

CHAPTER I

Attention, Executive Functioning, and Motivation Problems in Teens

The phone alarm goes off at 6:00 A.M., then again at 6:15, and at 6:30, without Marcus stirring. It is not until 6:45, when his mother pounds on his bedroom door, that he begins to gain consciousness. His mother yells, “The bus comes in five minutes.” She has a critical meeting at work she cannot afford to miss. “You have to catch the bus,” she tells him frantically, “I can’t be late to work again because I had to drop you off at school.”

Marcus stumbles out of bed and stares at the mess around his room. His shoes, textbooks, soccer equipment, and laptop cover the floor. His phone alarm chimes repetitively as he sifts about his belongings, trying to put a stop to the noise. He thought he had just had the phone in his hand a minute ago. Mom pounds the door again and rattles the locked doorknob. Increasingly upset, her tone escalates: “Marcus, I can’t do this again. Unlock this door right now.”

He bursts out 4 minutes later, with no time for breakfast, brushing his teeth, gathering his textbooks, or having a moment to think about what happened to the end-of-term math assignment he needs that day for class. Marcus catches the bus today, his final Monday of eighth grade, but barely. And his important assignment lies underneath his bed, kicked aside when he was playing video games the night before.

The bell for first period rings. Marcus gazes longingly over his shoulder at the popular group of students in his class, chatting, laughing, likely with their assignments safely stowed in their backpacks. He slowly makes his way to his seat in the middle of the classroom. His teacher instructs the class to turn in the math assignment. Marcus unzips his backpack and digs through the mishmash of papers hunting for his assignment. He’s sure he finished it last night. Where was it? He quickly texts his mother: “What did you do with my math assignment?!” Exasperated, he

notices his teacher standing next to his desk. The rule of no texting in class means his phone is about to be confiscated.

“I wasn’t really texting! I was just trying to figure out why my mom took my math assignment out of my bag.” His protest falls on deaf ears. The phone is confiscated, and his fellow classmates snicker something about his mommy from the back of the room. He blushes. The teacher begins to review material for the final exam. Marcus may have heard her voice, but he focuses his attention on the activity outside the classroom window, watching high-schoolers dribble a soccer ball down the field. When the teacher announces the homework assignment, Marcus’s mind is far away, counting the number of days until the start of the World Cup.

Back home after school, Marcus calls his mother from their home phone to explain his cell phone confiscation. He demands that she stop at school on her way home from work to pick up the phone and complain to the principal, expressing his conviction that the teacher was picking on him. He believes that the teacher always unfairly assumes he was doing something wrong. When Marcus hangs up the phone, he opens the cupboard, finds an unopened bag of chips, and turns on the television. *Wait, was there math homework?* he wonders. He doesn’t remember any. Probably just to study for the test, but he knows it isn’t until Thursday, so he has time to study tomorrow. Plus, he wants to catch up on episodes of one of his favorite shows before his mother returns from work and starts nagging him to do homework. She’d better get his phone back tonight, he thinks, fiddling with the casing of the TV remote.

Two hours later, Marcus’s mother opens the front door and drops a thick file folder on the kitchen table. She pours a glass of red wine and walks into the living room. She fixes her gaze on Marcus, who is sprawled on the couch with his eyes glued to the television. He turns to her. “Did you get my phone back?” Angrily, she replies, “I went all the way to school to catch someone before it closed. I found your counselor in the office and asked her about your phone. She didn’t know anything about it. But she knew all about the 10 detentions you received this month and how you didn’t show up to serve any of them. What is going on?”

Marcus ignores her demands for an explanation and focuses only on his phone. “You didn’t get my phone!?” His mind returns to and then fixates on his teacher’s unfairness. “She had no right to take away my phone. It’s stealing. I’m going to complain about her to the school board. This is injustice.” As Marcus’s mother steers the conversation back to his detentions, he refuses to let up on his complaints about the teacher. “She gave me those detentions for no reason. She is targeting me.” The discussion continues in this manner for 10 minutes, with Marcus blaming his teacher and his mother demanding answers about the detentions. Finally, she retreats to her bedroom and closes the door firmly behind her. Marcus turns back to the television and reaches back into his bag of chips, lifting a handful to his mouth as he settles back into his show. At 1:00 in the morning he sleepily drags himself to bed, setting his alarm to go off 5 hours later.

The evening caps what appears to be a very unlucky and stressful day for a teenager—yet for Marcus, this Monday represents a relatively typical day in his life.

What's Really Going On with Marcus?

Most therapists who treat teenagers have met Marcus. He may be a typically developing teen who stumbles with the increasing demands of adolescence. He may have a clinical diagnosis of attention deficit/hyperactivity disorder (ADHD), an autism spectrum disorder (ASD), or another diagnosable neurocognitive deficit. What is clear is that Marcus struggles in a way that significantly affects his daily life. Marcus could benefit from intervention—but which approach would be best for him?

There are several treatment modalities that target the types of problems Marcus experiences. However, each approach tends to target just a single aspect of his impairments. Marcus and his mother easily spiral into stressful arguments when he fails to meet his mother's expectations. Traditional family therapy approaches may create positive communication and strengthen the parent-teen relationship, but they don't treat other issues that underlie the problem, such as his lack of organization, time management, and planning skills that create major problems with completion of homework and his daily routine and thereby contribute to tension with his mother. Organization skills training approaches teach teens strategies to better manage their schoolwork and daily activities; however, to promote independent skill use, the parent typically must provide structure at home that motivates the teen to practice skills daily. Marcus's mother relies on an exhausting combination of reminding, lecturing, and yelling to extract effort from Marcus, which may help him do his work but can damage their relationship, increase parental mental health problems, and stifle Marcus's independence. Behavioral parent training can offer Marcus's mother skills in using contingencies to motivate him to complete daily tasks independently; however, failing to involve Marcus in this process can stifle teen autonomy and undermine his engagement in behavioral interventions. Finally, Marcus holds several maladaptive beliefs that negatively influence his behavior—namely, that completing schoolwork is boring and that his teacher is out to get him. Cognitive-behavioral therapy may help Marcus challenge these thoughts to decrease procrastination and improve his emotional reaction to stressful situations, but again it won't address the entire picture.

In sum, each of these treatments may enhance functioning in one domain; yet the difficulties Marcus experiences are not discrete. Problems with homework and school behavior lead him to argue with his mother. Maladaptive cognitions trigger problems with his teacher and arguments with his mother. Poor planning affects his school grades. His mother's lack of structure at home exacerbates Marcus's disorganization and motivation problems. Her tendency to argue back to Marcus further seeds tension in their relationship. When Marcus's mother gives in to his demands, he learns that becoming angry will lead his mother to retreat. With decreased supervision, Marcus's organization and motivation further deteriorate. With teens like Marcus, a one-dimensional approach to treatment can be grossly insufficient.

Some refer to Marcus with terms such as *lazy*, *inconsiderate*, *irresponsible*, *scatterbrained*, or *stupid*. His neuropsychological profile tells a different story. Work by

researchers show us that teens like Marcus, who struggle to organize, plan, and self-regulate, often experience developmental deficits in one or more distinct but intertwined neurocognitive processes: attention, executive functioning (EF), and motivation (Barkley, 2014; Castellanos, Sonuga-Barke, Milham, & Tannock, 2006; Sonuga-Barke, 2002). These functions combine to produce goal-directed behavior and involve several regions of the brain, including the prefrontal cortex, striatum, anterior cingulate cortex, and thalamus.

In any given environment, attentional processes determine the brain's selection of particular information for processing. In selection, the brain acknowledges certain pieces of information but passes over others. When Marcus attends to the soccer players outside of his classroom window, his brain ignores the classroom lecture. This selective attention obviously leads to problems for teens such as Marcus when they fail to retain information presented in class or listen to adults who are speaking with them.

EF represents cognitive processes that control effort and behavior. EF is associated with the ability to organize and carry out goal-directed behavior, which includes organizing, planning, holding information in mind, and inhibiting actions that fail to support one's goal. EF also includes functions that provide top-down regulation of the attentional processes just described. Marcus shows impaired EF in a number of areas, including his difficulties keeping track of schoolwork, his tendency to lose materials, his difficulty remembering details, his inability to inhibit emotional verbalizations to adults, and his trouble in carrying out multistep tasks. Magnetic resonance imaging (MRI) scans of Marcus's brain might show less development than those of his classmates in certain areas—most likely in his prefrontal cortex (Shaw et al., 2006), which is the operation center for these functions.

Marcus also shows dysfunction in motivation processes. He experiences delay aversion, which is an atypical level of mental discomfort experienced during unstimulating activities. To escape this discomfort, he gravitates toward immediately gratifying activities, be they emotionally or visually stimulating (e.g., watching soccer out the window, television viewing, video games). His brain cues automatically to distractions that relieve the discomfort of sustaining the mental effort required to focus on uninteresting or difficult tasks. Unfortunately, this inclination to attend only to immediately stimulating activities often prevents him from completing multicomponent tasks and projects that feel hard or boring in the short term. As a result, Marcus chooses to watch television or play video games instead of completing academic tasks that he dreads but that yield important long-term payoffs (e.g., studying for a test, taking the time to clean up his bedroom). During the teen years, many of Marcus's peers will learn to work steadily on multistep assignments, recognizing the long-term gratification of a high grade, college acceptance, or fostering trusting relationships with adults. Instead of being viewed as someone who will "get the job done," Marcus may come to be viewed as inconsistent and unreliable. For Marcus, overcoming motivation problems will be a slow and challenging process.

If brain functioning is disrupted in any of the processes described above, the teen is likely to experience difficulties in self-regulation and enacting goal-directed behavior. For example, a student may receive a poor grade on a homework assignment because he or she cannot force him- or herself to get started or to keep working (motivation problems), has trouble attending to information or instructions needed to complete the assignment correctly (attention problems), or loses the assignment before turning it in (EF problems). Many teens who have problems with one of these functions also have problems with the others. Without recognition and treatment, these deficits may leave a lasting mark that limits their future opportunities.

Navigating Adolescence

The adolescent period is meant to be fun, socially enjoyable, and personally formative (Steinberg, 2010). Adolescence is a time for personal exploration, skill development, building autonomy, and formulating one's own goals. For the first time, teens are given opportunities to organize their daily schedules, tailor their education, and engage in unsupervised peer activities. Teens start to develop their own taste in music and media and passions for sports teams and social causes. And for the first time, they begin to develop more adult-like social relationships. Decisions made and interests forged during the teen years pave the course of adulthood.

All teens possess unique strengths that can be cultivated during the period of adolescence to prepare them for adulthood and for an emotionally healthy and satisfying life. Although we've focused on Marcus's deficits, he also has strengths. He has been a gifted soccer player since elementary school. His interest in video games has allowed him to connect with a range of peers through live multiplayer gaming. As clinicians, we want to recognize his strengths and work with him with the hope that he will reach the milestones of adolescence and create a personally gratifying adult existence. We want Marcus to explore identity within the safety of his teen environment, to independently develop adaptive skills to allow him to leave home in an age-appropriate time frame, and to identify personal goals that guide him toward a positive future. Additionally, we want to make sure that Marcus's deficits do not lead to serious events that may derail his course toward happy and healthy adult living.

Unfortunately, positive adolescent development often eludes individuals like Marcus who display neurocognitive deficits in attention, EF, or motivation. Instead, adolescence may become a challenging period with lasting negative consequences. Social and academic demands increase exponentially in the teen years, and adolescents like Marcus may be unprepared to meet these challenges. We expect teens to independently manage their academic lives, responsibly moderate their use of social media, engage in a range of extracurricular activities, and increasingly contribute to their households and communities. With deficits that interfere with the ability to

plan, organize, and self-regulate, teens like Marcus may find the transition to adolescence to be overwhelming.

The secondary school environment is much more complex than elementary school. Teens must independently transition between classes with separate teachers, keep track of assigned work and deadlines, and complete multistep tasks and projects with minimal adult support. Even typically developing teens will at first struggle with academics when adapting to new secondary school environments (Eccles, 2004). However, gradually the foundational skills built in elementary school will successfully carry new middle school students through this rocky transition. Unfortunately, teens with neurocognitive deficits not only naturally struggle with independent self-management but also may have lost years of childhood skill development in less demanding elementary school environments (e.g., lower class placements, failure to participate in after-school activities). With missed opportunities to engage and develop their already lagging EF skills (i.e., organization, time management, planning), these teens may be substantially unprepared for the adolescent transition. Just when teenagers need all of their EF faculties working together, those with neurocognitive challenges have little ability to deal with the increasing complexity of their academic and social lives.

Struggles to independently manage the new demands of adolescence may leave some teens vulnerable to even more serious problems. We know from the work of B. J. Casey and colleagues (Casey, Jones, & Hare, 2008) that the typical adolescent brain experiences uneven development in the systems involved with behavioral decision making. Regions that create pleasure during enjoyable activities (largely through release of the neurotransmitter dopamine) develop earlier than the EF regions that help us to say “no” to behaviors that may at first be pleasurable but that ultimately lead to negative consequences (such as eating too many potato chips or playing video games instead of doing homework). For adolescents, this exaggerated and uninhibited dopamine release excites the teen in the presence of socially or emotionally salient stimuli (e.g., peer attention, social media, romantic encounters, fast driving, substance use). Unfortunately, immature EF regions are unprepared to sufficiently rein in these powerful reward responses. As a result, most teens, whether or not they have EF deficits, are prone to engage in exciting, fun activities that unfortunately can sometimes lead to negative results.

The typical afflictions of adolescence hit hardest when a teen experiences attention problems, EF deficits, motivation problems, or, worse, all three. Adolescent impulses can be difficult for a typical youth to manage, but teens with motivation problems will find these urges even more irresistible. These youth have two biological reasons to engage in risky or irresponsible behavior: (1) an adolescent drive toward emotionally rewarding experience and (2) deficits in motivation that drive them away from monotonous tasks and strengthen a desire to engage in immediately gratifying activities. When EF abilities are underdeveloped compared with those of peers, a teen has the worst of both worlds. With weakened abilities to inhibit

impulses, teens with EF deficits can become hamstrung by developmental surges in dopamine. With trouble finding success at home and school and a thirst for immediate gratification, these teens are at highest risk for school disengagement, problems with parents, and participation in problematic activities.

Developmental risk models (Sher, Grekin, & Williams, 2005; Zucker, 2006) warn that major negative life events disrupt adolescent milestones or present serious setbacks in adulthood. These include failure to complete high school or an equivalent vocational certificate, incarceration, addiction, driver's license revocation, severe mental illness, teen pregnancy, major injury, and dependence on government assistance programs. Pathways to many of these negative events begin with school failure and alienation from family members in early adolescence (see Figure 1.1). Many adolescents who fail to find personally rewarding experiences in positive environments—such as extracurricular activities, recreational interests, academics, or prosocial relationships—often seek stimulation from deviant peers, substances, rule breaking, and other risky activities. Not only can these alternatives present imminent negative consequences for the teen, but the absence of positive teen experiences also prevents development of adaptive interests, skills, and identity.

All of Marcus's deficits in attention, EF, and motivation create difficulty with his ability to self-regulate. This problem puts him at risk for school failure (through

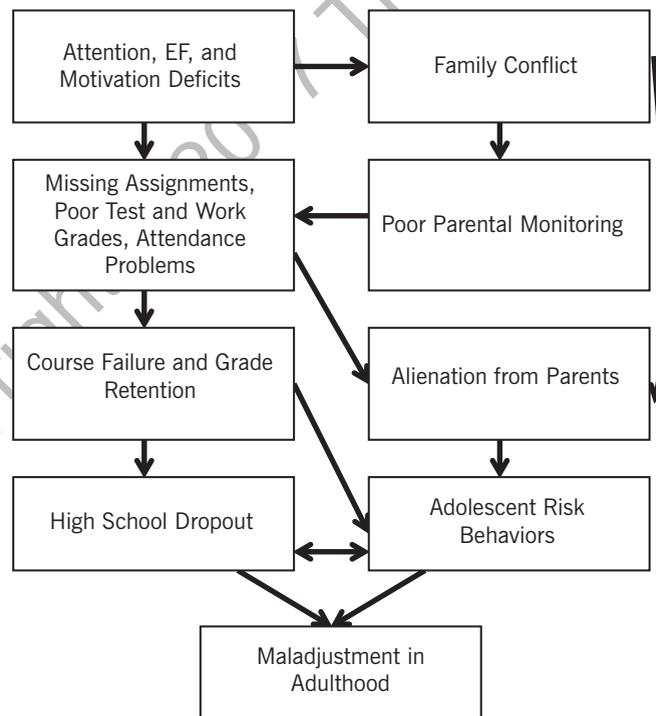


FIGURE 1.1. Pathways to adult maladjustment.

disorganization, disengagement, and poor work completion) and family conflict (through inconsistent completion of responsibilities, behavior problems, and poor verbal self-control that lead to conflicts with parents). For teens with these neuropsychological deficits, the unfolding consequences of academic failure and family stress are further compounded by poor behavioral inhibition. As they struggle to suppress particularly strong urges, these teens are prone to try substances, engage in unprotected sex, disregard rules, and engage in risky driving at higher rates than their peers. The capstone of these pathways is often a teen who drops out of high school. This leads to further problems, as teens who fail to earn degrees by young adulthood will struggle to sustain employment and achieve financial independence. In addition, they may experience severe mental illnesses or may turn to a life of persistent substance abuse and criminal behavior. Thus, due to cascading risks, teens with attention, EF, and motivation deficits are particularly prone to a disrupted adolescence with potentially debilitating consequences by young adulthood (for empirical support for these processes, see Barkley, Murphy, & Fischer, 2008).

Finding Success in Adolescence

To get teens with attention, EF, or motivation problems back on track developmentally requires scaffolding. To achieve critical milestones—identity building, goal formation, skill development, and self-sufficiency—intermediate steps must be set in place. Attempts to permanently remediate teens' underlying neurobiology through cognitive training programs or medication have been largely unsuccessful. So far, the outcomes of brain training programs for this age group reveal that teens master computer practice tasks but that these improvements do not translate into real-world gains (Gray et al., 2012; Steiner, Sheldrick, Gotthelf, & Perrin, 2011). Central nervous system stimulant medications that alter neurochemistry (e.g., Ritalin, Adderall, Concerta, Vyvanse) improve neurocognitive functioning only when the pill is active in the teen's system—improvements reverse once medication wears off (Greenhill et al., 2002). Chronic use of stimulant medications also causes limitations. Over time, physiological tolerance to these drugs' therapeutic effects may suppress their effectiveness (Swanson et al., 1999). In fact, most teens who are prescribed stimulant medications in childhood ask to stop taking the pills in adolescence due to uncomfortable side effects or to the social and self-concept implications of relying on daily medication (for more information on the long-term effects of stimulant medications, see the adolescent results of the Multimodal Treatment Study of Children with ADHD [MTA study]; Molina et al., 2009). Without a way to permanently alter neuropsychological capacities, teens with attention, EF, or motivation deficits must develop *compensatory* skills. For these teens, this becomes a central goal of adolescence: development of long-term strategies for overcoming neurocognitive deficits.

A second goal for teens with attention, motivation, or EF problems is to discover environments that maximize their strengths while minimizing the influence

of deficits. Thus a strength-based approach is particularly critical for teens who repeatedly experience failures. These efforts include choosing an educational path that engages the teen (minimizing motivation problems) and turns proclivities into unique skills that will serve the teen in the future. The experience of success in one domain can bring success in others; if Marcus excels on his school soccer team, he will be more appreciated by his peers. He also may push through motivation difficulties during homework to maintain an adequate grade point average (GPA) for team membership. Conversely, environments that are poorly suited to a teen with attention, EF, and motivation problems may increase the daily routine's averseness. This may include academic environments that demand high levels of self-sufficiency (exacerbating the effects of attention and EF deficits), schools with prevalent bullying, classrooms with teachers who are impatient with student symptoms, or highly rigorous academic programs.

Finally, a critical goal for these teens is avoidance of negative life events that disrupt the path to healthy and independent living. As such, deliberate efforts must occur to measuredly increase independence in such a way that requires teens with attention, EF, and motivation deficits to prove readiness for new freedoms. Educational completion is emphasized here. A number of teens with these difficulties fail to finish high school (Barkley et al., 2008), making this outcome one of the most imminent and concerning for these youth. Failure typically begins with incomplete work and poor test grades. Without proper supports, school problems may escalate to course failure, grade retention, and complete disengagement from school (see Figure 1.2).

How to Help

What tools exist for professionals seeking to help teens with attention, EF, and motivation deficits? How does one facilitate identification and development of

Key Goals of Adolescence

- Identity formation
- Skill development
- Goal setting
- Self-sufficiency
- Limit testing and experiential learning

Additional Goals for Teens with Deficits

- Developing compensatory strategies
- Identifying environments that maximize strengths and minimize deficits
- Avoiding major negative life events

FIGURE 1.2. Developmental goals of adolescence.

compensatory skills, create opportunities for teens to explore values and interests, and enact measures to prevent major negative life events? Many therapists, counselors, and educators find that professional tools that support these goals are limited. Our field's recognition of the intertwined effects of teen attention, EF, and motivation deficits is fairly recent. Although several one-dimensional approaches to treatment are available to clinicians, integrated approaches for treating these teens are scarce. Several components of treatment must be incorporated to appropriately address the multiple areas of difficulty experienced by these youth.

First, teens need introduction to compensatory skills that help them overcome the effects of their neurocognitive deficits. These efforts involve age-appropriate organization, time management, and planning strategies. Instruction in these strategies has most frequently been delivered by school professionals, in after-school programs, or through multiweek summer programs. When teens practice these techniques, their ability to self-manage improves at home and school (Evans, Schultz, DeMars, & Davis, 2011; Langberg, Epstein, Becker, Girio-Herrera, & Vaughn, 2012).

Compensatory skills in organization, time management, and planning require continuous practice to produce mastery and, finally, habitual independent skill use by the adolescent. The biggest impediment to practice and habit development is the adolescent's motivation problems. Enacting compensatory skills takes effort and adds extra steps to the teen's daily routine. Adolescents with motivation problems are likely to find this extra work aversive. To jump-start skill practice and create lasting habits, treatment of EF deficits must be supplemented with treatment of motivation problems. Methods for addressing teen motivation problems are less developed than is treatment for EF skill deficits. In school-age children, parents and teachers are trained to override motivation deficits by administering salient rewards and consequences to children for meeting (or failing to meet) behavioral targets. The child's excitement at the thought of receiving these adult-administered rewards reduces the discomfort of boring or difficult tasks. In adolescence, contingency management takes a new form. Parents and teens are encouraged to collaborate in devising a daily structure that requires the teen to complete responsibilities before accessing enjoyable activities (Forgatch & Patterson, 1989). This structure is best reinforced by an adult in the teen's life who (1) is in daily contact with the teen, (2) can oversee the teen's access to enjoyable activities, and (3) is willing to allow the teen to contribute to planning and contracting as an equal.

When EF skill instruction and age-appropriate contingency management are delivered in concert, teens develop helpful new habits and begin to connect the dots between practicing organization, time management, and planning skills and achieving success. After a few weeks of consistent skill practice, a teen may begin to see an improvement in school grades. If the pride or newly realized benefits of this success outweigh the mental discomfort of practicing the skill, the teen may continue this habit in the absence of an explicit contingency structure at home. Of course, this epiphany likely is not enough to permanently change teen behavior, but it can be a productive first step for the teen.

Engaging Parents as Stakeholders

There are typically two classes of adult stakeholders engaged in the daily life of teens: parents and secondary school staff. For several reasons, parents may be ideal participants in treatment. First, many parents have more available time and resources than secondary school staff, and they obviously have more emotional investment in the teen. Second, parents are sustainable agents of change; school staff members are only available the year the teen is under their supervision. Third, in middle and high school, a large portion of academic work is completed at home, outside of the purview of school staff. Finally, parents who make lasting changes to their own maladaptive parenting behaviors will create much greater change in their adolescent than could occur by any outside resource or school intervention. If Marcus's mother can work with a therapist to find more appropriate ways to encourage independence and respond to his emotional outbursts, it will pay dividends for Marcus in the long term. The first component of this therapeutic support is often building parental engagement and parents' willingness to modify their own behavior in support of teens' success. Though many parents seek treatment in hopes that a therapist can teach or convince the teen to shape up, the deepest therapeutic work often occurs within the parent. Because maladaptive parental behaviors can take several different forms, sustainable treatment of the parent-teen dyad must accommodate individual differences in the parent's presentation.

Overcoming Negative Parenting Patterns

It is well known that consistent monitoring of teen behavior, positive parent-teen relationships, and allowing some teen autonomy are key elements of successful authoritative parenting—the parenting style that fosters best outcomes among adolescents (Steinberg, Lamborn, Dornbusch, & Darling, 1992). It is also known that these parenting practices tend to be disrupted in parents of teens with attention, EF, and motivation deficits (Edwards, Barkley, Laneri, Fletcher, & Metevia, 2001). Coercive parent-youth interactions unfold over time, such that child self-regulation problems lead to parental frustration, which can further exacerbate a child's behavior problems. As a youth's behavior escalates, parents who eventually give up on enforcing consequences teach their children that the more you protest, the more likely an adult will be to give in. By the arrival of adolescence, these patterns may be deeply ingrained, creating high levels of conflict, parental disengagement, over-control, or criticism.

As illustrated in recent work from our group (Sibley et al., 2016), negative parent-child cycles can also apply to academics. In a sample of nearly 300 teens with attention, EF, and motivation problems, parents were asked to complete questionnaires about their typical involvement in adolescent academics—with specific attention to how parents managed attention, EF, and motivation problems in their

teens. Statistical analysis of parental response patterns indicated the presence of three broad parent management patterns—two of which exposed habits that actually may worsen teen impairments.

First, there were some parents who seemed to be doing things right. Approximately 20% of parents and teens appeared to be engaging in a collaborative approach to managing teen deficits. These parents cooperatively set a home structure with teens, set limits on their freedom, and required accountability for completing schoolwork. Importantly, parents displaying this pattern appeared to have the highest levels of personal well-being. They experienced less emotional distress and fewer physical ailments, presumably due to the stable and calm home environment that stems from a collaborative approach.

A parental control group, formed by about 40% of the sample, represented a first maladaptive pattern. Many of these parents were highly involved in all aspects of teen organization, time management, and planning (though some limited their overinvolvement to homework help). These activities included frequent assisting with and checking of teens' academic work, high levels of contact with teachers, checking the teens' online grade book daily, and reorganizing school materials without their teens' involvement. When parents believe the adolescent is incapable of completing work independently, the parental control strategy offers an effective short-term solution to failing grades (i.e., parents manage academics for the adolescent and grades improve); however, long-term consequences of this approach undermine adolescent independence. Adolescents may learn that dawdling during academic work will encourage parents to offer a high level of assistance—ultimately reducing the amount of time and effort the teen needs to spend on homework. Teens also fail to develop and practice critical compensatory skills when parents manage academics for them. During treatment, we affectionately call these parents the teens' "personal assistants." This pattern can be debilitating to the teen and also highly taxing to the parent. Parents were most likely to enact this strategy when the teen was younger or showed high levels of EF dysfunction. These parents also reported the highest levels of anxiety and health problems in themselves.

A final parental pattern, termed uninvolved, comprised another 40% of parents in the sample; they represented broad disengagement from their teens' academic work. The older the adolescent, and the stronger the adolescent's motivation problems, the more likely the parent was to display the uninvolved pattern. Many parents who displayed the uninvolved pattern reported previously engaging in the parental control pattern. Perhaps years of adolescent EF and motivation problems that were unaltered by parental micromanagement created hopelessness in some parents. If prior attempts to encourage the teen were unsuccessful, these parents may see no value in continued efforts. Parents displaying the uninvolved pattern also reported higher levels of depression.

These study results suggest that a majority of parents of teens with attention, EF, or motivation problems adopt dysfunctional parenting patterns in natural response

to adolescent deficits. Unlike the parents of younger children, parents of adolescents have over a decade of experience interacting with their children and forming stable beliefs about the adolescents' abilities. These beliefs are powerful determinants of the parents' behavior and guide their parenting choices. Often, what professionals see as a parenting *problem* has been the parents' only *solution* for years.

Conflicts are particularly prone to arise when control-oriented parents attempt to withdraw support or uninvolved parents begin to increase oversight. In these cases, teens had not been held accountable for any independent work, and when new limits were suddenly placed on them, conflict ensued. In addition, these teens had not been taught the skills or learned the motivation required to transition to independent academics. As a result, families who desire to change rules and expectations at home may require therapist guidance and support to do so successfully.

Long-Term Success

We've seen that treating attention, EF, and motivation problems in teens requires compensatory skill instruction and practice, implementing a contingent daily structure that is supervised by a supportive adult, and remediation of maladaptive parenting problems. Earlier we noted that motivation problems may return when reinforcements for skill practice are removed. So, how does one help teens develop skills to overcome motivation deficits in the long run?

Let us reconsider the nature of teen motivation problems. Teens with motivation deficits, such as delay aversion, experience an unusual level of discomfort with monotony or effortful tasks when there is no immediately foreseeable benefit. This discomfort drives them away from activities that require time or effort with little short-term reward, even when there is high long-term payoff. Motivation problems occur as a function of two factors: time and perceived reward value. Long delays for payoffs reduce the likelihood that the teen will complete the activity or change the behavior. Marcus will be much more likely to study for tomorrow's test than one that is scheduled for next week.

If the teen perceives little benefit to the behavior (low perceived reward value), he or she also is less likely to complete it, even if the payoff is immediate. Marcus may choose not to study for an impending test if he has no interest in improving his GPA or believes that studying will not help his test performance. In teens with motivation problems, dopamine transmission is altered such that an immediate and highly valued benefit to a behavior is often required to overcome the dread of sustained effort. So Marcus may not study for a test unless he decides that studying will accomplish a meaningful goal with immediate payoff.

Thus part of treatment might be a search for natural circumstances that have high reward values to the teen and reduced wait time for payoff. What does this look like? The teen should be encouraged to discover environments that maximize the

presence and frequency of valued natural and adaptive reinforcers. In Marcus's case, this means finding a high school with a strong soccer program, a team that values him, and academic electives that engage his interests.

In addition to maximizing the presence of natural environmental rewards, therapeutic work can strengthen teen response to these built-in contingencies by increasing their perceived value. Marcus may enjoy soccer, but helping him comprehend the benefits of this activity (e.g., building social relationships, physical activity, developing leadership skills, recognition from adults and peers, college acceptance) may strengthen the perceived value of soccer. Marcus may embrace the benefits of soccer but not believe he has the academic ability to qualify for athletic participation. Thus work may also build a teen's self-efficacy, forging beliefs that adaptive behaviors are worthwhile because they are *likely* to lead to desired rewards. Earlier, it was mentioned that one way this can be done is by enacting a contingent structure in the short term that spurs skill use and allows adolescents to witness themselves being successful. During therapy sessions, appropriately processing this initial success can clarify the relationship between hard work, skill use, and successful performance. Exploring the benefits of successful performance (e.g., athletic eligibility, pleasing a parent, higher school grades, increased self-worth) can further strengthen the perceived value of natural rewards associated with teen efforts.

Meanwhile, long-term success for the parent also means therapeutic attention to parent motivational and cognitive factors that maintain maladaptive parenting practices. As part of this process, parents embark on a parallel journey of finding reasons to make and sustain long-term parenting changes (e.g., requiring teens to complete work independently, monitoring and reinforcing teen work completion) by (1) increasing the perceived value of this change (e.g., fostering a positive future for the teen, allowing the parents more time for themselves in the evening, reducing parent-teen conflict, creating academic independence) and (2) building parent self-efficacy—forging beliefs that teen's behavior *can be influenced* with the proper parenting strategies in place.

There is a well-established literature on using therapy to alter aspects of motivation in adults and adolescents. Once such approach is motivational interviewing (MI), a therapeutic paradigm that has undergone decades of refinement (see Miller & Rollnick, 2013). MI supports the treatment goal of strengthening the value of natural rewards for adolescent adaptive behavior (EF skill use, academic effort) and parent changes (reducing control strategies or increasing oversight of academics). MI also supports the treatment goal of building self-efficacy in teens (helping adolescents see that adaptive behavior will lead to receipt of valued natural rewards) and parents (helping parents see that when they change their parenting style, changes in the adolescent's home behavior will follow). MI can accomplish these goals by guiding the client to discuss changes in a way that increases discussion of the positive aspects of change and reduces attention to arguments in favor of the status quo. Chapter 4 provides a full discussion of the use of MI in parent-teen treatment for attention, EF, and motivation problems.

Treatment Model

The preceding discussion highlights the multifaceted challenges facing teens with attention, EF, and/or motivation problems. As such, maximally effective treatment for these teens often requires multifaceted therapy. Attention and EF deficits can be targeted by teaching teens compensatory skills. Motivation deficits can be treated in the short term through an adult-overseen contingency structure that incites initial teen success—and in the long term by incorporating therapeutic techniques designed to build motivation. Over time, therapy may enhance the perceived value of natural rewards for adaptive behaviors and build adolescent self-efficacy as practiced skills slowly lead to success. Finally, maladaptive parenting processes are addressed in the short term by training parents to appropriately practice reinforcing home structure. In the long term, maintenance of appropriate parenting practices can be encouraged by increasing the perceived value of these parenting changes (see Figure 1.3).

The treatment described herein represents an integrated and developmentally informed approach for teens with attention, EF, and motivation problems. To address the multiple mechanisms of dysfunction in this population (many of whom receive a clinical diagnosis of ADHD, a learning disorder, or an ASD), this approach combines training in compensatory skills, parent–teen collaborative contingency management, and MI. This integrated treatment (which we refer to as Supporting Teens’ Autonomy Daily, or STAND for short) is an autonomy support approach that engages parents and teens in age-appropriate and collaborative care. Other treatments for this population may not be integrated—including training only in EF skills, parent behavior management, family communication skills, or cognitive restructuring. STAND seeks to be an accessible approach that helps parents and teens understand how the brain influences behavior (*why* teens have trouble paying attention or controlling impulses) and what steps they must take to find success. STAND’s integrated approach frames treatment for any adolescent with significant impairments in attention, EF, or motivation domains—regardless of clinical diagnosis.

1. Develop compensatory skills.
2. Identify environments that maximize presence and frequency of salient natural rewards.
3. Create an age-appropriate contingency structure by contracting with the parents to overcome short-term motivation problems.
4. Support parents in practicing consistent implementation of adaptive parenting skills.
5. Use MI to increase perceived value of natural rewards in the teen’s environment and enhance teen self-efficacy for achieving success (long-term improvement in motivation).
6. Use MI to increase the parents’ perceived value of making parenting changes and to enhance parents’ self-efficacy for influencing teen behavior (long-term maintenance of parenting practices).

FIGURE 1.3. Treatment goals for adolescents with attention, EF, and motivation problems.

Empirical Support

We began the process of evaluating STAND's efficacy by piloting the treatment with 36 families. To test how STAND compared with typical community resources, half of our sample was randomly assigned to receive STAND while the other half pursued usual care in the community. Parents, teens, and teachers of teens in both groups filled out questionnaires about the teens' functioning before treatment, mid-way through treatment, and after treatment. We also collected observational measures of the participants' organization skills and school grades.

This first pilot study (Sibley et al., 2013) indicated that therapists found the new approach to be user-friendly, that all families completed treatment, and that nearly 90% of families took the step of scheduling a meeting with the adolescents' schools to discuss integrating home and school treatment approaches. Both parents and teens rated treatment as highly credible—they believed it addressed the problems that initially led them to present for help. Furthermore, both parents and teens reported that they enjoyed working with the therapists. We found these results encouraging given initially high levels of discord in the early didactic version of our program—these data suggested that MI might be helping engagement.

With respect to parental consistency, by the end of treatment, a majority of parents reported daily contingency management to reinforce adolescent skill use. Adolescents reported that the most helpful part of treatment was time spent discussing goals and interests, as well as creating a new structure at home that put responsibilities before enjoyable activities. Parents reported that the most helpful aspects of treatment were skill modules delivered to the adolescent. All families were highly satisfied with treatment.

Our preliminary work with this small group of families suggested that, compared with the community treatment group, adolescents who received STAND used EF strategies with greater frequency, more consistently recorded daily homework assignments, earned higher grades in school, and experienced sizable reductions in inattention and hyperactivity/impulsivity symptoms. In addition, parents reported the reduction in oppositional behavior and conflict at home.

To further test STAND with a larger sample of teens, we conducted a study in which 128 adolescents were randomly assigned to receive the program or a community control condition (Sibley, Graziano, et al., in press). Prior to treatment, after treatment, and 6 months later, parents, adolescents, and teachers provided similar ratings to those in the pilot study. Once again, adolescents who attended treatment made significant improvements in skill use, ADHD symptom severity, and organization skills relative to the community group. These effects were maintained 6 months after treatment ceased (see Figure 1.4).

Taking a closer look at parent changes during treatment, this study revealed that parents who participated in STAND were more likely than those in the community group to set a structure at home that required responsibilities to be completed before enjoyable activities. Most important, compared with parents in the

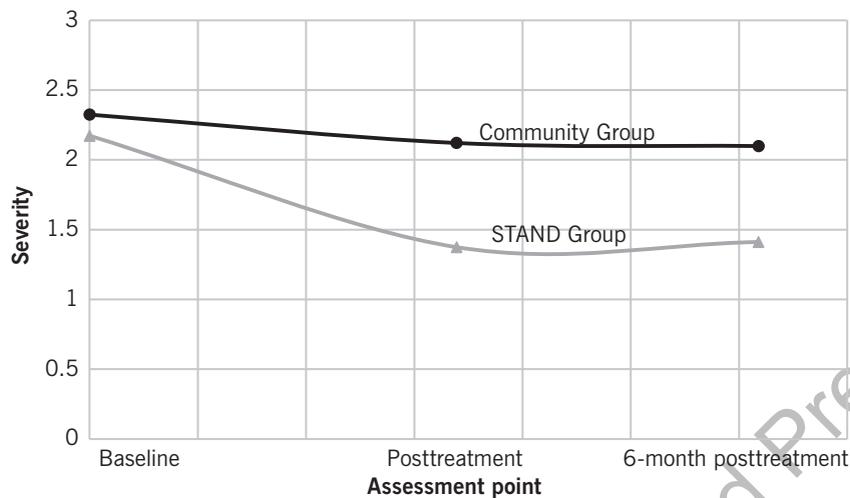


FIGURE I.4. Group differences in organization, time management, and planning problems.

community group, parents who participated in STAND reported lower levels of parenting stress after completing the program. This effect also was maintained 6 months after treatment. Interestingly, to arrive at these positive outcomes, parents made different types of changes—some increased their oversight of the teen’s school-work and daily responsibilities, whereas others decreased their micromanagement, allowing the teen to take on more independent work. Each family appeared to create its own unique pathway to improve life at home and school.

We are currently conducting additional research to better understand how a treatment such as STAND might best serve families. One study compares STAND delivered in its typical individual parent–teen format with STAND delivered to families in a group setting. Our hope is to understand whether mechanisms of integrated treatment can be engaged in this lower-resource approach. We also recently began piloting STAND delivered via videoconference to families who live too far from our clinic to receive treatment in person. Results thus far are encouraging. Finally, we began an initiative to train community therapists to deliver STAND in community mental health agencies. Our goal is to understand how STAND may be adapted to best serve adolescents receiving treatment in a variety of treatment provision settings.