Chapter 15
Attention-Deficit/Hyperactivity Disorder

Monica Mongia, Manju Mehta and Rajesh Sagar

15.1 Introduction

Attention-deficit/hyperactivity disorder is a neuro-developmental disorder that begins in childhood and affects individuals across the life span (American Psychiatric Association 1994). About 80 % of children diagnosed with ADHD continue to have the disorder in adolescence (Antshel et al. 2012; Ingram et al. 1999).

Although the primary manifestations of ADHD in adolescence are similar to those in childhood involving symptoms of hyperactivity, impulsivity, and inattention, adolescents experience a reduction in hyperactivity compared to children (Faraone et al. 2006). In adolescence, ADHD may be associated with high rates of impairments, e.g., cognitive, social, and emotional (Fischer et al. 2002) as well as high rates of comorbidity, e.g., anxiety, depression, and conduct disorder (Barkley et al. 2007), all of which drastically affect the adolescent's self-esteem (Harpin 2005).

Interestingly, while symptoms such as poor sustained attention, impulsivity, and restlessness continue during adolescence, hyperactivity tends to be less pervasive compared to childhood (Young and Amarasinghe 2010). Adolescents with ADHD are at a higher risk for negative outcomes including academic problems, substance use, interpersonal problems, and criminal offenses. New comorbid problems also

M. Mongia (✉)
Lady Shriram College, University of Delhi, New Delhi, India
e-mail: drmonicamongia@gmail.com

M. Mehta · R. Sagar
Department of Psychiatry, All India Institute of Medical Sciences, New Delhi 110029, India
e-mail: drmanju.mehta@gmail.com

R. Sagar
e-mail: rsagar29@gmail.com

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tend to emerge during this period. Even though a lot is known about ADHD as a lifelong disorder, research on the adolescent stage of ADHD in general is relatively sparse. The majority of what is known, especially relating to adolescent treatment, is based on assumptions derived from research on child and adult samples.

15.2 Need for CBT in Adolescents with ADHD

Unfortunately, despite suffering from ADHD and associated problems, adolescents are poorly represented in the ADHD literature with only 10–30 % receiving attention from mental health services (Jensen et al. 1999). This discrepancy may reflect changes in adolescents' attitudes toward treatment (e.g., desire for autonomy, identity issues), but it is also likely related to the dearth of research into effective treatments. Some adolescents with ADHD may not benefit significantly from medication and that others may experience adverse side effects that may prevent them from continuing pharmacotherapy. Even if the teens somehow struggle with the side effects, the delay in the manifestation of the positive effects of the ADHD medication as well as the inability to fulfill increased parental expectations after a period of sustained medication regime may force them to give up pharmacotherapy in the longer run. Thus, many teens may refuse to stay on ADHD medication and adherence to medication may be a big issue that the professionals and the parents of ADHD teens may encounter.

Since medication, which is the mainstay of treatment for ADHD, is effective only in the short term (Jensen et al. 1999) and also since studies report about 95 % non-compliance in individuals up to 21 years of age (McCarthy et al. 2009), it is understood that medication adherence may be problematic when adolescents perceive medication as an impediment to their independence or when they are not fully informed regarding ADHD and its treatment. In addition, literature points to the fact that medications do not teach skills such as organizational skills, study skills, or interpersonal skills that are required by individuals with ADHD for coping with their problems (Waxmonsky 2005). CBT interestingly teaches these skills to individuals with ADHD that help them deal with problem situations.

Finally, it is important to train individuals with ADHD to manage their dwindling sense of self-esteem due to the various difficulties they face in social, interpersonal, and academic realms. Skill-building exercise, such as cognitive behavior therapy, that has proven to be an effective strategy for adults with ADHD as well as individuals with other psychiatric disorders is presumably helpful for adolescents with ADHD as well.

Considering that the chronicity of the disorder of ADHD leads to significant public health burden, it is important that intervention is initiated early in life; thus, late childhood and adolescence being the right developmental phases to understand the nuances of CBT, it is suggested that CBT be started around that time (Quinn 2001).

CBT could be a promising intervention for the treatment of the core symptoms of ADHD in children (Safren et al. 2005). In adults, however, the literature provides

support for CBT as a useful adjunct to medication that may help improve ADHD symptoms, self-esteem, depressive symptoms, anxiety, anger expression, and global functioning (Greenfield and Hechtman 2005; Wilens et al. 1999; Stevenson et al. 2002; Safren et al. 2005). Theoretically, due to higher cognitive maturity in adolescents compared to children, adolescents would better comprehend the idea behind CBT and would communicate their needs and understand their deficits better. Thus, a CBT intervention that focuses on academic, interpersonal, and coping skills would hold promise for improving the quality of life of adolescents with ADHD. Adolescents may develop a clear sense of ownership when they are actively involved in their own ADHD treatment process (Smith et al. 2000). Adolescents and their families may have the best sense of which symptoms and skill deficits contribute the most to impairment in their lives; their input should be solicited for program development. Such an intervention could build on components that have been successful for adults with ADHD. Strategies must be put in place to ensure that adolescents acquire skills and practice them outside the treatment time, as generalization of skills is crucial to treatment success. The use of coaches to encourage skill maintenance in individuals with ADHD has received support (Quinn 2001).

Further, diversion of stimulant medication has become a real problem and teens may do it often for want of money or favors from their peers in the form of drug, sex, or other things/behaviors that their parents may not approve of and thus need to be adequately informed.

Although the efficacy of CBT for adolescents with anxiety and mood disorders is well supported (Compton et al. 2004), there is a dearth of studies on CBT with adolescents with ADHD (Young and Amarasinghe 2010). Research supporting the efficacy of CBT for adolescent ADHD, therefore, is scarce. Results of the available studies suggest that CBT can be effective in addressing some of the unique needs of adolescents with ADHD (Antshel et al. 2012; Mongia and Hechtman 2014 [submitted]).

Compared to children, the cognitive abilities that develop during adolescence in theory should allow them to understand the purpose of therapy and better implement the various strategies taught.

It may be that employing a strict cognitive behavioral focus is an ineffective approach to adolescent ADHD treatment (Chronis et al. 2006). Therapies including both medication and psychosocial treatments may be able to control ADHD symptoms as well as help treat secondary problems and comorbid disorders. Waxmonsky (2005) suggested that CBT may be a helpful adjunct for adolescents (and adults) with ADHD.

Recent adolescent studies have begun to include more of a focus on combined treatments. Antshel et al. (2012) ran an intervention on 68 adolescents which was based on an empirically validated CBT protocol for adults (Safren 2006). Adolescents with ADHD alone as well as those who were only comorbid for depression or anxiety improved across several symptoms and improved on functional measures according to parent and teacher ratings. Those with ADHD who were comorbid for CD or ODD did not make the same gains. Unfortunately, those who did improve were still impaired on at least one domain and therefore

continued to perform sub-optimally. The strengths of this study include structured CBT and use of standardized outcome measures; limitations include inclusion of individuals with high motivational levels, lack of blinding, possible low inter-rater reliability, and lack of actual placebo control group.

In a recent study, by Mongia and Hechtman (2014; submitted), demonstrating the efficacy of CBT for 18 adolescents with ADHD on stable medication. Intervention consisted of 14 weekly group sessions and individual coaching 3 times per week. The areas addressed were organization and time management skills, anger management, social skills, and self-esteem. Baseline to post-treatment improvements in restlessness and impulsivity dimension (Conners' Global Index—self-report and parent report), self-esteem (Rosenberg Self-Esteem Scale), level of disability (Sheehan Disability Scale—independent blind clinician rated), and severity of ADHD (Clinical Global Impression Scale—independent blind clinician rated) were noted. These improvements were maintained at 3-month follow-up. Subjective improvements in ADHD symptoms, motivation, and level of disability were reported by adolescents, their parents, and the independent blind clinician. Treatment gains were maintained 3 months post-intervention. On CGI–independent blind clinician report, no improvements were noted from baseline to post-treatment. However, from post-intervention to follow-up, improvement in restlessness, impulsivity (CGI—independent blind clinician report), and disability (Sheehan Disability Scale (SDS)—self report) was observed. No improvements were noted on CGI (teacher report). No improvements were observed on SDS—parent report. The methodological limitations of this study include small sample size, low power, lack of actual control group, short duration of follow-up (i.e., 3 months), and no control over other treatments during follow-up. Despite these limitations, this study is one of the first studies assessing the efficacy of CBT in adolescents with ADHD. Standardized outcome measures were used for assessment to make the assessment more objective. Blinding served as an effective method for reducing bias.

In another study, a component of CBT, i.e., mindfulness meditation (8 weeks) was studied in 24 adults and 4 adolescents by Zylowska et al. (2008) that led to improvements in self-reports of ADHD symptoms, anxiety, and depression as well as attention and cognitive inhibition tasks after. An absence of evidence in favor of CBT for adolescents with ADHD, however, does not mean that CBT is ineffective for this population but does stress the need for more research.

To conclude, although the findings from studies examining CBT in adolescence to date are mixed, research should be continued into this type of treatment.

15.3 Process of CBT in Adolescents with ADHD—Practical Steps

This section describes the psycho-educational training process that all the adolescents and their parents enrolled in a CBT-based skill training program must undergo. After each skill training session, handouts are provided detailing the skill

taught in the session. In addition, homework is given to enable the adolescent to practice, in real-life settings, the skills learnt in therapy. Also, individual coaching is provided by trained individuals who may assist the adolescents during the group CBT sessions and may remain in once a week telephonic contact with the adolescents. Retention of skills taught in the last session is checked before beginning the new session, and also, homework given in the last session is reviewed. Barriers in completing homework are addressed.

Case vignette

"A 14 year old adolescent, 'X', with complaints of persistent restlessness, inability to concentrate on any task, poor performance at school, inability to maintain friendships is referred to the clinic by his school teacher. Even though 'X' has a normal IQ, he is unable to perform academically as well as socially at par with his peers. In addition, he has problems in learning such as inability to remember concepts taught at school, poor handwriting, incomplete work, slowness etc. Despite repeated requests, 'X' is unable to organise his belongings and loses them frequently as a result. He has shown aggressive behaviour in social settings in the past and has no friends. 'X' is shy and has poor self esteem and therefore, does not like to attend social gatherings. He has recently started experimenting with drugs and feels he is better accepted by his peers when he uses them. His parents report that he has been extremely active and fidgety since childhood and has never been able to complete his work on time. 'X' has intermittently been on stimulant medication for ADHD since childhood and lacks social skills as well as takes a lot of time for adjusting to a new settings. He cannot deal with failures as well as feels upset that he is so different from his peers. 'X' and his parents reported feeling isolated from the social setting and extremely burdened by his symptoms and their consequences."

15.4 Sessions 1 and 2: Introduction, Interview, and Assessment

In the first two sessions, after forming a rapport with the adolescent and his/her parents, the adolescent's as well as the parent's subjective problems are recorded. These may relate to excessive activity, impulsivity, and inability to attend and concentrate on tasks. In addition, behavioral and self-esteem problems may be noted. Parental stress and anxiety impact on their lives due to ADHD in their adolescent as well as burden of caring for an offspring with ADHD may be understood. Visual analog scale may be used to record the subjective level of distress due to ADHD. Positive and negative coping strategies may also be recorded. Subjective account of the impact of ADHD on various aspects of the adolescent's as well as parent's lives is also noted (Tables 15.1 and 15.2).

In addition, objective account of the adolescent's ADHD symptoms, their performance at school, and behavior in general, using standardized scales such as Malin's Intelligence Scale for Indian Children (MISIC), Child behavior checklist

Table 15.1 Aims: Sessions 1 and 2

Aims
• Forming rapport with adolescents and his/her parents
• Recording the adolescent's as well as parent's difficulties using semi-structured interview technique as well as standardized scales
• Noting the subjective and objective impact of ADHD on the adolescent and their family
• Assessing willingness for CBT
• Informing adolescents and their parents about the process of CBT

Table 15.2 Aims: Session 3

Aims
• Normal developmental course of children and adolescents
• Distinguishing normal development from pathological development
• Hyperactivity that is abnormal
• Subjective assessment of parents' knowledge of ADHD
• Psycho-education about ADHD
• Clarifying misconceptions

(CBCL), Conners' Parent Rating Scale (CPRS), Conners' Teacher Rating Scale (CTRS), and ADD Evaluation Scale (ADDES)—Home and School versions— are used. In addition, historical treatment and therapy reports are analyzed.

Further, both the parties are informed about the process of CBT structure, duration, techniques, and levels of expected involvement and their willingness to participate is assessed informally. Perceived barriers in participation may be discussed. Consent and assent for CBT is finally sought after clarifying misconceptions and discussing barriers.

15.5 Session 3: Psycho-education for Adolescents and Their Parents

The psycho-educational element of giving information by discussion supplemented with fact sheets is crucial to CBT. This may help in improving compliance to treatment and is genuinely appreciated by the child, family, school, and often the referring general physician.

Educating adolescents and parents about ADHD as a disorder, its symptoms, course, types, comorbidity, causes, impact, role of parental disciplining, and resources available to deal with it may help them understand from a scientific point of view.

In addition, clarifying misconceptions associated with this disorder such as ADHD is an intentional behavior on the part of the child that these children are absolutely normal or on the other hand are absolutely abnormal and can never function normally and that they are absolutely handicapped, among several others

may be essential to initiating effective management. Parents who feel that their child is malingering symptoms may attribute resultant problems to adolescent's behavior, whereas those who understand it as being caused by uncontrollable biological factors and maintained by environmental factors may work in collaboration with the adolescent sufferer and may support him/her in dealing with their symptoms. Misconceptions are thus addressed, and a balanced view of ADHD is presented to the parents.

15.6 Session 4: Stress and Coping

In this session, after assessing the adolescent and parents' subjective stress levels on a visual analog scale, they are educated about stress: what is stress, how stress build up, what factors may maintain it, what happens when it continues beyond a point, and how ADHD and associated problems may cause and maintain stress in them. Further, adolescents and their parents are asked about ways in which they cope with problems. They are then educated about the different types of coping such as positive coping (adaptive and constructive coping) viz. anticipation or proactive coping (anticipating what the problem situation will be like and preparing the steps to cope with it), social coping (seeking social support), and meaning focussed coping (understanding the meaning of stress causing situation), temporary avoidance of thoughts or circumstances that cause stress and getting back to them when calm, relaxation exercises, physical exercises, healthy nutrition and adequate sleep, and humor. The adolescent and their parents also receive an understanding of how these positive ways of coping help in improving overall functioning (Table 15.3).

They are further taught about the negative or maladaptive coping strategies that may provide temporary relief from symptoms or problem but may maintain it in the long term. Ways of coping negatively include dissociation (the ability of the mind to separate and compartmentalize thoughts, memories, and emotions), sensitization (seeking to learn about, rehearse, and/or anticipate fearful events in a protective effort to prevent these events from occurring in the first place), safety behaviors (relying on something, or someone, as a means of coping with excessive anxiety), anxious avoidance (avoiding anxiety-provoking situations by all means), and escape (fleeing the situation at the first sign of anxiety).

Table 15.3 Aims: Session 4

Aims
• Addressing adolescent and parental stress
• Assessing current level of (subjective) stress using a visual analog scale
• Addressing coping strategies of adolescents and parents
• Psycho-education about stress and coping

Thus by the end of this session, the adolescents and parents are able to identify the various ways in which they cope with different situations and whether their ways of coping help them in overcoming or maintaining their distress.

15.7 Session 5: Stress Management and Coping Training

This session is a continuation of the last session in that it teaches some coping strategies to deal with specific symptoms of ADHD. Relaxation techniques such as deep breathing and imagery are taught to adolescents with ADHD. In addition, distraction techniques such as writing a diary, talking out to a friend, engaging in a hobby, reading books for pleasure, going out for a walk, praying, yoga, an elastic band around the wrist, holding an ice cube in the hand, or stroking a pet while distracting may actually help the adolescent in bring back his trail of thoughts to the point where he got distracted. Some mental strategies such as learning a rhyme, memorizing motivational quotes, or tongue twisters such as 'she sells seashells on the sea shore' may also challenge the distracting stimuli and remind the adolescents to divert back their focus to the task at hand. Similarly, self-use of memo or flash cards can also help in distracting adolescents with positive messages or memories of happy experiences such as holidays or personal achievements, reminding you that things will improve again (Table 15.4).

Further, adolescents are taught an important technique in cognitive behavior therapy, i.e., cognitive restructuring which is a set of techniques for becoming more conscious of one's thoughts and for modifying them whenever they are distorted or unrealistic. Adolescents are taught to use cognitive restructuring technique to use reason and evidence to replace the distorted thought patterns with more accurate, believable, and functional ones.

For helping the adolescents identify their thought distortions as well as restructure them after brief evaluation, the adolescents are introduced to the following worksheet (Tables 15.5 and 15.6):

Table 15.4 Aims: Session 5

Aims
To educate parents about
• Relaxation exercises: breathing exercises and imagery
• Distraction techniques
• Cognitive restructuring
• Effective communication
• Problem solving
• Planning and management

Table 15.5 Cognitive restructuring worksheet

Situation	Emotions (ratings)	Automatic thoughts (rating)	Evaluate and modify thoughts
			.

Table 15.6 Example of cognitive restructuring technique for dealing with self-esteem issues in adolescents with ADHD

Cognitive restructuring worksheet example			
1. Situation	2. Emotions and ratings	3. Automatic thoughts and ratings	4. Evaluate and modify thoughts
Thought of being a loser because I have ADHD	Discouraged/ashamed (rating before = 90; rating after = 70) New emotion = not that ashamed	I'm a loser because I have these symptoms (magnifying negative, minimizing positive, overgeneralizing)	Does having ADHD mean I am a loser? • No it is a distortion in my thinking. I have many positive qualities that I am ignoring by calling myself a loser

Ratings Both before and after you complete column 4: (A) in column 2, rate the intensity of the emotions (0–100 %); and (B) in column 3, rate your degree of belief (0–100 %) in the automatic thoughts. Cognitive distortions (detailed in appendix at the end of this book): in column 3, identify any cognitive distortions in automatic thoughts

Next, the adolescents are taught the technique called problem solving which involves the following steps:

1. Identify and define problem area/issue or problem definition
2. Generate and list all possible solutions/options
3. Evaluate alternatives in terms of their advantages and disadvantages
4. Decide on a plan in terms of action, steps, who, when
5. Implement plan
6. Evaluate the outcome and seek answers for questions such as 'how effective was the plan?' and 'does the existing plan need to be revised or would a new plan be needed to better address the problem?'

   If you are not pleased with the outcome, return to Step 2 to select a new option or revise the existing plan, and repeat Steps 3 to 6.

All these techniques are also taught to the parents to help adolescents (who are comfortable involving their parents in the therapy process) understand and implement these strategies. For those parents whose adolescent children are not comfortable in involving them in the therapy process as well as for others, it is advisable to implement these strategies to deal with their own day-to-day problems.

The last technique that is taught in this session is planning and management. The adolescent is taught to maintain a daily routine such that adequate time is allotted to each activity. Each activity must be followed by a small break. The important thing is to get to the next task after the break time is over. Planning for unexpected events is important to avoid frustration later on.

15.8 Session 6: Working with Adolescents with ADHD (I)

This session begins with teaching adolescents the technique called ABC charting. This involves educating them about (Table 15.7):

A = Activating Event

- What do you think happened?
- What would a camera see?

B = Beliefs about Activating Event

- What did you tell yourself?

Table 15.7 Aims: Session 6

Aims
• ABC charting
• Star chart method
• Clarity and brevity of instruction
• Time-out
• Reinforcement
• Consistency

Table 15.8 ABC charting

A—Activating event	B—Beliefs	C—Consequences
My teacher asks me if I have completed a piece of homework	I think • 'She thinks I am not working hard enough' • 'She is trying to catch me out'	*Actions* I say defensively that I have nearly finished the homework, although in fact I still have some way to go *Emotions* I feel annoyed, angry, and resentful

C = Consequences

- How did you act?
- How did you feel (Table 15.8)?

Using this technique, the adolescent can make sense of the situations that give rise to a certain kind of beliefs in him or her and the negative or positive consequences those beliefs lead to.

Understanding such patterns would be crucial to changing ones beliefs and therefore one's reactions in stressful or intimidating situations.

15.9 Session 7: Working with Adolescents with ADHD (II)

Techniques such as token economy may help adolescents in modifying their behavior. Parents or significant others may need to be involved in this process as per the convenience of the adolescents. Negotiation with the adolescent may form the first step before this technique can be implemented. Tokens must be used as reinforcers to be effective. A token may be any object or symbol that can be exchanged for material reinforcers, services, or privileges such as a bag of chips, breakfast in bed, or extra pocket money, whatever way they have been negotiated to serve the adolescents. Tokens may be in the form of coins, checkmarks, stars, smileys, etc (Table 15.9).

Parents or significant others such as peers or a close relative may model desired behavior such as waiting for turn and speaking only when asked to, and the

Table 15.9 Aims: Session 7

Aims
Educating about
• Token economy
• Modeling
• Attention strategies
• Study skills training
• Knowledge of feedback
• Consistency (reviewed)

adolescent with ADHD may imitate that behavior following the demonstration and be appropriately rewarded for it.

Attention strategies such as beading, counting, or canceling all 'p's on a newspaper front page or subtracting 4s from 100 and going backwards to zero may help adolescents with ADHD in building their attention span. Parents can use various strategies such as grain sorting, vegetable sorting, cutting pictures and using them as picture completion test, and pattern tracing on sand or with pencil.

For dealing with academic issues, the adolescents are taught studying skills. Study skills training helps them in managing large chapters by breaking them into smaller, achievable targets and by reinforcing themselves for achieving each small target.

The significant others are then taught to provide immediate, clear, precise, and short-sentenced feedback about the performance of the adolescent with ADHD.

The importance of being consistent in using these techniques is highlighted as using them frequently in similar problem situations may help them in getting habituated to these techniques and thereby sustaining their motivation and building their confidence in themselves.

15.10 Session 8: Working with Adolescents with ADHD (III)

This session also focuses on teaching-specific skills to the adolescent with some involvement of the parent or significant other (Table 15.10).

Since adolescents with ADHD face difficulty in managing their time effectively, they are taught to set long-term goals. After having set long-term goals, they are instructed to envisage the time it would take them to reach that goal. The long-term goal is then viewed in term of several short-term goals that must be reached in stipulated time period to be able to reach the long-term goal in time. They are taught to use timelines, set deadlines for themselves for finishing a certain task and adequately reinforce themselves (self-reinforcement) for doing so. Further, the adolescents are taught self-instructional training ('stop, look, listen, and think') which includes the following steps: watching a trainer model and talk through a

Table 15.10 Aims: Session 8

Aim
To impart training about
• Time management
• Self-instructional training
• Self-reinforcement
• Star chart method
• Thought diary
• Dealing with comorbid factors self-esteem issues, drug abuse, defiance, conduct problems, etc.

task, including planning and talking through possible difficulties (cognitive modeling); carrying out the task, prompted by a trainer; carrying out the task, prompting themselves aloud; carrying out the task, prompting themselves by whispering; and finally, carrying out the task silently using covert self-instruction/self-talk.

In order to reinforce themselves or for their parents to reinforce them, the adolescents as well as the parents are taught to use the star chart method. A star chart is a behavior change program that involves the delivery of a sticker or star to a child as a reward for engaging in an appropriate or desired behavior. The sticker or star is typically placed on a chart that is visible to the child. The chart commonly displays descriptions of the specific behaviors that have been identified for improvement. Sticker/star charts are typically designed to increase the frequency of desired behaviors by rewarding desired behaviors that do not occur frequently enough. For example, behaviors identified for improvement might include doing chores, completing homework, remembering to wait for turn, so on and so forth.

Finally, in this session, the adolescents are taught to use a thought diary to keep their thought patterns under check for which the following instructions may be given (Table 15.11):

Instructions are as follows:

1. In the above diary, keep a note of when you feel any of the following: anxiety, fear, hurt, anger, shame, guilt, and depression in the feelings column. Rate how strongly you experience the feeling on a scale of 0 % (low) to 10 % (high).
2. Note what you were doing at the time in the situation column.
3. Think about what you were saying to yourself about the situation and identify any unhelpful thoughts. Write these into the thoughts column.
4. Try to generate more helpful, realistic, and supportive thoughts in the alternative thoughts column.
5. Practice thinking these new alternative thoughts next time you are in or entering a similar situation.
6. Monitor what new feelings you experience and rate these on a scale of 0–10 %. More helpful feelings can include annoyance, concern, regret, sadness, and remorse.

Finally, the therapist may suggest strategies to deal with associated problems such as low self-esteem, defiance, conduct problems, and drug abuse. These may be done for specific cases in which these problems are highly intense in nature and negatively impact functioning.

Table 15.11 Thought diary

Day	Situation	Thoughts	Feelings	Alternative thoughts	New feelings
	What were you doing?	Anxious, negative, pessimistic	0 (low)–10 (high)	Helpful thoughts	0 (low)–10 (high)
					.

Table 15.12 Aims: Session 9

Aim
• Identifying social skill deficits
• Distinguishing between skill acquisition and performance deficits
• Selecting intervention strategies
• Implementing intervention
• Assessing and modifying intervention as necessary

15.11 Session 9: Social Skills Training

In this session, the adolescents are taught to identify the deficit social skills such as not greeting friends, not making eye-to-eye contact, and using abusive language. Then, they are taught to distinguish between difficult in skill acquisition, i.e., whether they possess the skill or have difficulty in learning a certain social skill such as verbal or non-verbal, and performance deficits wherein they already possess the skill but are unable to implement it in the social setting, for example, knowing that one must exchange greetings when one meets his or her friends and also knowing what to use as a greeting and how to say it but still not doing it in the real-life setting. Based on the kind of settings and skill deficit or performance deficits, intervention strategies are custom made for each adolescent, e.g., different for shy adolescent from that for an abusive or overtalkative adolescent. The strategies may include explicitly teaching social skills by using say board games about friendships and appropriate behavior, using peer mentors for mediation say for social initiation, thoughts, and feelings activities involving recognition of the other's feelings and thoughts a different from those of the self-using stories and picture cards, facilitating reciprocal interactions, using social stories to teach social concepts, and finally, role plays for addressing basic interaction skills. The mutually worked out intervention plan is then implemented in real-life settings, and the adolescents' performance in these setting is adequately and appropriately reinforced. Finally, the intervention is evaluated and modified as necessary (Table 15.12).

15.12 Session 10

The final CBT session is usually meant for summarizing the training program, post-intervention assessment using the same objective measures as in the initial sessions to evaluate the change due to intervention as well for obtaining subjective perception of the participants regarding the effectiveness of the training sessions. A gist of the pertinent information taught is presented to the participants. An open discussion about the barriers in implementing the CBT techniques learnt is held and issues are clarified.

15.13 The CBT Process Addresses More Than the Adolescent with ADHD

A number of pertinent issues must be addressed in the therapeutic formulation when working with adolescents with ADHD:

15.13.1 The Family

The therapist needs to engage both the parents and the adolescent. The younger the adolescent is, higher is the need for the parents to be included in the cognitive behavioral model.

Specific instruction in management techniques, such as using positive reinforcement for compliance with a child with a conduct disorder, may help parents deal with various ADHD-related issues. Using excerpts from their own settings may help them understand their child's illness in a perspective, and implementing the CBT strategies for dealing with their adolescent's issues may then become easier.

The therapist must be aware of the family's structure and its belief system, as well as the systemic implications of any intervention.

Additionally, crucial information for parents for adolescents with oppositional defiant disorder, conduct disorder, specific learning disability, interpersonal issues, or drug addiction may be provided.

Parent training enhances problem-solving skills training for adolescents, reduction in aggressive behavior problems at home and at school, better adjustment, and reducing parental anxieties. Parents may feel better sharing their problems with similar others and therefore must be introduced to ADHD support groups. Information about resources available for ADHD as well as advocacy may also be provided.

NICE, 2006, guidelines suggest that parent training may prove to be an effective intervention for children and adolescents up to 13 years old who have been diagnosed with ADHD. For older adolescents, however, considering their high need for autonomy and independence, parental involvement may jeopardize the process of CBT and therefore, caution must be exercised and adolescent's approval must be sought before involving their parents in therapy. Initial interview may therefore be conducted with the adolescent alone.

15.13.2 The School

The adolescent's school, with due permission from the adolescent as well as the parents, may also need to be informed of the disorder as well as the treatment that the adolescent is currently undergoing. Reports on historical and current

performance and behavior at school may be requested from the school, and periodic feedback on performance, post-therapy, may be sought. The adolescent's assets and weaknesses may well be provided by the teachers. Support from teachers as well as peers may be invited for facilitating management of the adolescent with ADHD.

15.13.3 The Adolescent

Published materials such as self-help books, workbooks, and manuals may be supplemented by individual tailor-made charts or materials prepared by the therapist for the purpose of improving adolescent's understanding of their symptoms as well as the therapeutic process. These materials may also help in practising the skills learnt in the CBT sessions in the real-life settings.

The therapist provides a guiding role, teaches various skills to deal with ADHD symptoms, provides appropriate and clear feedback to increase the adolescent's motivation, and provides support throughout. The therapist appreciates effort at first and gradually focuses on the outcome of those efforts, for example, initially a therapist may say: 'Well done! Even though it was difficult to continue to work on the math problem for ten minutes, I can see how hard you've tried.' Later in therapy, this may be substituted by 'You have followed five out of ten steps correctly to solve your math problem, this is indeed great progress!' Progress must be demonstrated on a visual analog scale, and barriers to implementing strategies must be discussed in detail.

For adolescents with ADHD, 13–18 years of age, with moderate impairment, tailor-made CBT intervention involving social skills training may work better than structured interventions provided in group.

Psychological interventions may additionally help in the holistic management of older adolescents with comorbid behavioral problems such as risky sexual behaviors, drug addiction, and interpersonal issues. In addition to focusing on symptom management and dealing with issues associated with ADHD, these individuals may be better assisted by training in specific skills in prosocial competence, emotional control, problem solving, and conflict resolution.

15.14 Barriers to Cognitive Behavioral Treatment of Adolescents with ADHD

15.14.1 Developmental Issues

While a highly intelligent and highly motivated adolescent with ADHD may grasp the adult CBT principles or programs easily and feel motivated to implement the strategies, however, younger adolescents may have difficulty making sense of the

adult program, for example, thought diaries and time management strategies; these and other complex techniques may need further simplification for them.

It may help if the adolescents are taught to distinguish between feelings, thoughts, and behavior at the outset, these concepts being the crux of CBT. Thus, practical exercises that help them relate emotions with situations, thoughts, and behavior may help, for example, feeling 'anxious' in an examination setting while thinking 'I may not pass' and therefore not attempting a number of difficult questions due to the fear of failure.

Thus, abstract concepts such as setting up a hypothesis and gathering evidence for and against one may be a difficult proposition for younger adolescents to understand but not so much for older adolescents. Since CBT entails forming a number of hypotheses about various situations and gathering evidence around it, it is imperative that adolescents at a lower cognitive stage of development be explained these concepts in sufficient details and with the use of pragmatic examples.

15.14.2 Generalization to Real-Life Settings

Issues of transportability (bridging the gap between the research intervention and the clinic), adherence to 'manualized treatments' (treatments based on manuals) and the integrity of the therapy have become more prominent recently and must be addressed when doing CBT for adolescents with ADHD.

15.14.3 Therapist Factors

Updating own knowledge base for therapist is important besides being supportive and guiding throughout without making the client dependent on himself or herself.

15.14.4 Overall Conclusion

CBT for adolescents with attention-deficit/hyperactivity disorders can be looked upon as an efficacious psychosocial treatment approach. CBT may work best when used in combination with medication for ADHD, especially for older adolescents as well as those with intense symptoms. CBT strategies such as psycho-education, skill-based training in attention strategies, maintaining a thought record, cognitive restructuring, planning and management, self-instruction, time and relationship management, self-reinforcement and consistency, social skills training, and working with self-esteem may help improve ADHD symptoms, adherence to

Table 15.13 Key learning points

CBT with adolescents with ADHD
• Helps manage functional impairments in social, emotional, and academic arenas
• Can address poor academic performance, relationship issues, and antisocial behavior
• Common CBT strategies used: psycho-education, skill-based training in attention strategies, maintaining a thought record, cognitive restructuring, planning and management, self-instruction, time and relationship management, self-reinforcement and consistency, social skills training, and working with self-esteem
• Common outcomes assessed: ADHD symptoms, social skills, self-esteem, organizational skills, comorbidities, and medication adherence
• Unique needs of adolescents viz. independence, poor social skills, and developing identity must be addressed

treatment, academic performance, interpersonal relationships, and self-esteem in adolescents with ADHD. In addition, associated problems such as defiance, conduct problems, and drug abuse may also be addressed through CBT in adolescents with ADHD (Table 15.13).

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