# Practitioner Review: Psychological Management of Anxiety Disorders in Childhood

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Many anxiety problems begin in childhood and are a common form of psychological problem that can be highly distressing and associated with a range of social impairments. Thus, skills for conceptualising, assessing, and treating childhood anxiety problems should be in the repertoire of all child mental health specialists. This paper reviews psychosocial treatments for the most common anxiety disorders in children and adolescents. Developmental models of anxiety disorders emphasise maximum risk in children with shy or inhibited temperaments who are exposed to high family anxiety and avoidance, and/or acutely distressing experiences. As children mature these temperamental and environmental experiences are internalised to low self-competence and high threat expectancy. Both individual or group-based interventions utilising cognitive-behavioural strategies to address multiple risk factors are highly efficacious and family involvement can contribute to positive outcomes. Guidelines for assessment and treatment are presented, and suggestions are made for effectively managing clinical process.

*Keywords*: Adolescence, anxiety, behaviour therapy, cognitive therapy, internalising disorder, intervention, phobias, psychotherapy.

*Abbreviations*: BI: behaviourally inhibited; CBT: cognitive-behavioural therapy; GAD: generalised anxiety disorder; SAD: separation anxiety disorder.

## Introduction

Anxiety and fear are an inherent part of the human condition. In times of danger, they are transitory and adaptive. What is interpreted as dangerous, however, changes across the lifespan. As a consequence of children's developmental experiences and their increasing cognitive abilities, the content of normative fears and anxieties generally shifts from concerns about concrete, external things to internalised, abstract anxieties (Koplewicz, 1996). Thus, infants tend to fear strangers, loud noises, and unexpected objects, while children fear separation from their parents, animals, loud noises, the dark, and the toilet. Between the ages of 4 and 6, predominant fears include kidnappers, robbers, ghosts, and monsters. At 6 years, fears of bodily injury, death, and failure develop. These may continue into early adolescence. At 10 or 11 years of age, fears regarding social comparison, physical appearance, personal conduct and school examinations may predominate.

However, anxiety can be an unpleasant feeling that arises without any obvious threat. It consists of a mixture of physiological symptoms (e.g. sweaty palms, "butterflies" in the stomach), behavioural signs (e.g. avoidance), and cognitive components (e.g. "I'm going to fail and everyone will laugh at me"). Children and adolescents who have anxiety problems experience some combination of the following: unrealistic and excessive worry about past or future events and about performance; need for reassurance; marked self-consciousness; somatic complaints with no physical cause; restlessness or feeling "keyed up" or "on edge"; fatigue; difficulty concentrating; irritability; distress on separation from parents; school refusal; panic attacks; avoidance of situations; distress in social situations; phobias; obsessions or compulsions.

Recently, research has shown that many anxiety problems begin in childhood and that these are a common form of psychological problem and can be highly distressing and associated with a range of social impairments (Dadds, Barrett, & Cobham, 1997). Thus, skills for assessing and treating childhood anxiety problems should be in the repertoire of all child mental health specialists. This paper presents an overview of these skills.

# Types of Anxiety Disorders in Childhood

Categorical systems for classifying anxiety disorders are useful but not without problems. The individual categories have enormous overlap in specific symptoms, and even after controlling for this overlap, the majority of sufferers will show more than one category. Also, experiences of anxiety fall on a continuum of severity and the assignment of a disorder necessitates drawing an arbitrary cutoff on this continuum. At this point, there is precious little data to show that the different child anxiety disorders are associated with different etiological, prognostic, and treatment factors. Notwithstanding, use of a diagnostic system can greatly aid clinical precision and

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research progress. The main categories of anxiety disorder from the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV) (American Psychiatric Association, 1994) are described below.

Separation anxiety disorder (SAD) is one of the most common anxiety problems found in children and is developmentally inappropriate and excessive anxiety regarding separation from attachment figures in a child's life (Silove, Manicavasagar, Curtis, & Blaszczynski, 1996). Generalised anxiety disorder (GAD) is exaggerated or uncontrollable anxiety, physiological arousal, and/or worry about events (Masi, Mucci, Favilla, Romano, & Poli, 1999). It is characterised by selfconsciousness, sleep disturbance, excessive reassurance seeking, and worry about future (e.g. going to see a doctor) or past events (e.g. something the person said), and anxiety about performance and competence. Specific phobias (SP) are characterised by marked fear of a specific feared object or situation that is not a realistic threat (N. J. King, Hamilton, & Ollendick, 1998). Social phobia (SocP) is characterised by fear of embarrassment and anxiety when exposed to social or performance situations (e.g. going to parties, speaking in front of a group). Children with social phobia avoid feared situations or, if necessary, endure them with intense anxiety. Panic attacks are discrete periods in which there is a sudden onset of intense apprehension, fearfulness, or terror, often associated with feelings of impending doom, that occur outside of specific anxiety-provoking situations. These feelings are usually accompanied by some physical symptoms such as palpitations, chest pain. or discomfort, difficulty breathing, and choking or smothering sensations. The presence of recurrent panic attacks, as well as apprehension about future attacks, is called Panic Disorder. Agoraphobia is a secondary disorder to Panic Disorder and characterised by anxiety about, or avoidance of, places in which panic may occur (Ollendick, 1998). These places/situations often include being outside the home alone, being in a crowd, travelling in a bus, or being on a bridge.

Other disorders that feature heightened anxiety will be mentioned in passing only. Obsessive-compulsive disorder (OCD) is characterised by obsessions (persistent thoughts, impulses, or images that are intrusive and distressing) and compulsions (repetitive behaviours, e.g. hand washing) (R. A. King, Leonard, & March, 1998). Obsessions may centre on themes of personal contamination by germs, on harm befalling loved ones, on violent images, or on sexual or religious matters. Compulsions involving repeating, ordering, arranging, checking, watching rituals are common. Posttraumatic stress disorder (PTSD) is characterised by persistent re-experiencing of traumatic events accompanied by symptoms of arousal (Perrin, Smith, & Yule, 2000). People who have PTSD will take measures to avoid exposure to stimuli that they feel are associated with the trauma. Acute stress disorder is characterised by symptoms similar to those found in PTSD, but which occur immediately following the event. Selective mutism refers to a disorder in which the child has language but does not speak to unfamiliar people due to extreme shyness and social fear (Anstendig, 1999).

Apart from the presence of specific symptoms, criteria for all of the above disorders require that the problem causes significant interference with daily functioning, and that the symptoms have persisted for specified periods of time.

# Prevalence and Course

Surveys of community populations show that anxiety disorders are the most common childhood emotional disorders. Twelve-month prevalence rates range from 10% to 21%; about 8% may require clinical treatment (Anderson, Williams, McGee, & Silva, 1987; Bernstein & Bochardt, 1991; Kashani & Orvaschel, 1988, 1990). Age of onset tends to vary. Phobic disorders usually have onset early in life. Panic disorder rarely occurs before late adolescence, peaks in early adulthood, but is rare after 40 years. The onset of GAD occurs across all age groups. Social phobia most commonly occurs during adolescence or early adulthood, and is often preceded by childhood shyness. Obsessive-compulsive disorder has variable onset with approximately 50% of cases occurring before 20 years of age.

Anxiety in childhood can be a passing problem and evidence on the long-term outcomes of childhood anxiety disorders is controversial. For instance, 70% of children aged 6 to 12 years, who had been diagnosed with overanxious disorder, were found to have retained this diagnosis at 2-year follow up (Pfeffer, Lipkins, Plutchnik, & Mizruchi, 1988). Dadds et al. (1999) demonstrated that approximately 50% of children in a community sample who met diagnostic criteria for an anxiety disorder still exhibited an anxiety disorder 2 years later. Keller, Lavori, Wunder, Beardslee, and Schwarts (1992) assessed past and present psychopathology in 275 children and adolescents aged 6 to 19 years. Fourteen per cent of the children had a history of anxiety disorder and, of these children. 66% met criteria for an anxiety disorder at the time of assessment. The average duration of the disorder to the time of the interview was 4 years, but it was estimated that 46% of the children with an anxiety disorder would still be having problems 8 years after the onset of the disorder (Keller et al., 1992). However, not all studies have confirmed the stability of children's anxiety disorders (Last, Perrin, Hersen, & Kazdin, 1996; Poulton, Trainor, Stanton, & McGee, 1997). For the clinician, it is important to assess the pattern of risk and protective factors unique to each child in order to make the most accurate possible prognosis.

Chronicity of anxiety problems in children is in part due to their association with social problems, such as dependency on adults in social situations, poor problem solving skills, unpopularity, and poor interaction with peers (Kashani & Orvaschel, 1990; Messer & Beidel, 1994; Panella & Henggeler, 1986; Rubin & Clark, 1983; Strauss, Frame, & Forehand, 1987). If anxiety disorders persist to adulthood a range of expenses are incurred, such as the cost of unemployment, days lost from work, hospitalization, medication, and pension payments. Interestingly, estimates from the recent Burden of Disease Project (Murray & Lopez, 1996) suggest that anxiety disorders represent one of the most significant health problems in terms of global burden of disease, exceeding the vast majority of physical health problems.

Many adult psychological problems have their origins in childhood and adolescence and the anxiety disorders are no exception (Pine, Cohen, Gurley, Brook, & Ma, 1998). However, nonspecific relationships tend to be the rule such that early child anxiety problems can lead to a range of later problems and later anxiety problems can have a range of early antecedents. There are some important exceptions to this which have merged from recent research. First, SAD in childhood is a reliable precursor of panic and agoraphobic states in later life (Silove et al., 1996). Second, anxiety problems in childhood are a reliable precursor of adolescent depression but the reverse is not true (Cole, Peeke, Martin, Truglio, & Seroczynski, 1998). Third, several recent studies suggest that shyness and behavioural inhibition in childhood may predict later social phobia (Hayward, Killen, Kraemer, & Taylor, 1998; Kagan & Snidman, 1999; Stemberger, Turner, Beidel, & Calhoun, 1995). Finally, social phobia is a reliable precursor of concurrent and substance use problems (see Catalano, Kosterman, Hawkins, & Newcomb, 1996).

Studies have found relatively high rates (up to 45%) of comorbid anxiety disorders with depression in adolescence (Kovacs, Gatsonis, Paulauskas, & Richards, 1989; Schatzberg, Samson, Rothschild, Bond, & Regier, 1998) and disruptive behaviour disorder (Anderson et al., 1987; Kashani & Orvaschel, 1990; McGee et al., 1990). In approximately two thirds of cases of major depressive disorder, anxiety preceded the depression and persisted after it (Kovacs et al., 1989). Phobias appear to be risk factors for later development of major depression (Schatzberg et al., 1998), whilst panic disorder has been associated with a high risk of attempted and completed suicides (Johnson, Weissman, & Klerman, 1992).

## **Risk and Protective Factors**

In contrast to specific etiologies, the field of developmental psychopathology now emphasises the interplay of multiple risk and protective factors. Risk factors can be defined as characteristic variables that, if present for a particular individual, increase the likelihood that this individual will develop the disorder, and are present before the disorder develops. Protective factors are thought to modify the influence of risk factors by helping, improving, or altering a person's response to some environmental hazard. For a more comprehensive review of risk and protective factors in developmental models of childhood anxiety problems see Vasey and Dadds (2001) and Craske (1997). For a review of the contribution of genetic influences, not to be covered here, see Eley (2001).

Kagan, Reznick, and Snidman (1988) argued that the temperament characteristic feature most relevent to anxiety problems is stable "behaviourally inhibited" (BI) reactions to unfamiliar events or people. Characteristic features of BI include initial timidity, shyness, and emotional restraint when exposed to unfamiliar people, places, or contexts (Asendorf, 1993). Children who show stable temperament of BI are more likely to develop anxiety disorders in childhood (Biederman et al., 1993; Kagan & Snidman, 1999). In a longitudinal study, Gest (1997) has shown that BI measured at 8 to 12 years is predictive of social and emotional problems in adulthood. Children who had been identified as high-stable BI were more likely to still be living with their parents in adulthood. In a 3-year follow-up of children with and without BI, Beiderman et al. found that children who fit the descriptors of inhibited (20%), were more likely to develop anxiety disorders than children who were uninhibited (0%).

Similar to BI is the concept of reticence (Coplan, Rubin, Fox, Calkins, & Stewart, 1994; Rubin, 1993; Rubin & Asendorph, 1993), which refers to the behaviour of children who are unoccupied onlookers to the activities of their peers and thus is a form of social isolation. Asendorph (1993) interpreted reticent behaviour as an approach/avoidance conflict-wanting to join in, but stopped by fears. Research shows that extremes of social withdrawal are stable over time, and when associated with negative self-appraisal, are predictive of internalising difficulties in early adolescence (Rubin & Asendorph, 1993). Coplan and Rubin (1998) concluded that reticence may be "a marker variable for social fear, anxiety and internalising problems". Rubin's and Kagan's concepts share many similar behavioural characteristics and a variety of terms are descriptive of their key elements: shy, wary, hovering, approach-avoidance conflict, withdrawn, inhibited, isolated. It should be noted that a substantial proportion of shy/reticent/BI children do not develop any form of anxiety disorder and thus, the significance of the child's temperament should be evaluated in the context of the concurrent risk and protective factors.

As children mature, temperamental features are increasingly represented at cognitive/verbal levels. A number of cognitive and attentional styles are characteristic of people with anxiety disorders. These include tendencies to overestimate the likelihood that bad things will happen, exaggerate the consequences of bad things happening, selectively attending to possible threat in the environment. These characteristics can be shown to occur during both conscious (verbal) and preconscious processing (e.g. during rapid signal detection tasks). For a review of these processes in anxious children see Vasey (2001).

Anxiety states in children can be associated with exposure to negative life events. Elevated rates of anxiety disorders follow natural disasters such as earthquakes, bushfires and violent storms (e.g., Dollinger, O'Donnell, & Staley, 1984). The rates of occurrence of stressful experiences have been found to be greater amongst anxious children compared to controls (Benjamin, Costello & Warren, 1990; Goodyer & Altham, 1991). On their own, stressful life events do not provide a full explanation for the development of anxiety disorders. Increased occurrence of environmental stressors appear to precede the onset of nearly all psychiatric and most physical illnesses (Goodyer, 1990). Many anxious children do not experience elevated rates of negative life events, and some children survive trauma without clinically significant psychological problems (Goodyer, Wright, & Altham, 1990).

However, events do not need to be traumatic to have a great impact on the development of anxiety disorders, especially in vulnerable children. Aversive experiences at the doctor and dentist, with animals and insects, with being trapped or lost, with injury, and with strangers, can all precede the development of clinically significant anxiety. The most developed model for understanding the impact of these events on anxiety is contemporary conditioning theory and the reader is referred to Davey (1992) and Dadds, Davey, and Field (2001) for comprehensive reviews. Perhaps the most important implications of the conditioning model for treatment is that the power of stimuli to elicit fear reactions can be reduced via nonaversive exposure and exposure-based treatments are central to most successful interventions.

Most effects of traumatic events and environmental stresses are mediated through their effects on parent-child relations (and their interactions with child temperament). McFarlane (1987) reported that the best predictor of post-traumatic phenomena in children following a fire disaster was the mother's response to the event. That is, mothers who were the most anxious and overprotective following the fire tended to have children who exhibited the most post-traumatic symptoms, Deleterious effects of divorce on children are associated with changes in daily routine, discipline practices, and parent-child communication (Emery, 1982). Anxious parental behaviour has been found to influence the degree of distress shown by children during painful medical procedures (Bush, Melamed, Sheras, & Greenbaum, 1986; Jacobsen, Manne, Garfinkle, & Schorr, 1990).

Family environments characterised as low in sociability and/or high in shyness may be a risk factor for anxiety problems. Bruch and colleagues (Bruch, 1989; Bruch & Heimberg, 1994) showed that adults diagnosed with social phobia recall their families as seeking to isolate them from ordinary social experiences. A recent study by Barrett, Dadds, Rapee, and Ryan (1996b) indicated that parents of anxious children differ from other parents in terms of the way they encourage and teach their children to respond to ambiguous threat cues. Barrett et al. (1996a) demonstrated that anxious children and their parents make relatively high numbers of threat interpretations and, as a result, often choose to avoid solutions when faced with ambiguous, hypothetical social problems. For example, when families were asked to discuss how their child should deal with social cues, the likelihood that anxious children would devise an avoidant solution increased after the family discussion, In nonanxious comparison children, this effect was not found (Barrett et al., 1996a). In a follow-up, Dadds, Barrett, Rapee, and Ryan (1996) analysed the contingent stream of family behaviours that had been videotaped in the family discussions. Results showed that parents of anxious children were more likely to reciprocate avoidant solutions and less likely to encourage prosocial solutions than parents of nonanxious children.

A recent review of child-rearing styles by Rapee (1997) points to a strong association between maternal control and anxiety. Rapee suggests that maternal overprotection not only conveys the perception to the child of the continual presence of threat and danger, but also restricts the child's opportunities to develop successful coping mechanisms. It may prevent the child from developing more optimistic and realistic appraisals of the world. Krohne and Hock (1991) suggested that parental overcontrol tends to interfere with children's acquisition of effective problem-solving skills, resulting in failure to learn to deal successfully with stressful life experiences. Similarly, Dumas, LaFreniere, and Serketich (1995) observed parent-child interactions, noting that anxious dyads were characterised by relatively high parental control and avoidance.

Attachment theory (Bowlby, 1971) posits that the quality of early attachments influences the reaction of infants and children to novel situations, people, and objects. Essentially, attachment theory stresses the development of secure versus insecure relations between parents and children as protective or risk factors in the aetiology of emotional disorders (Main, 1996). It is thought that relations with the primary caregiver are reflected in children's subsequent interactions with peers and others. Manifestations of insecure attachment include avoidant (e.g. avoiding intimate contact) and anxious/ambivalent styles (e.g. distress at separation, clinging, failure to show independent exploration). One of the most comprehensive studies to date on attachment confirmed that infants who were anxiously/ambivalently

attached in infancy were more likely to develop anxiety disorders during childhood and adolescence than infants who were securely attached (Warren, Huston, Egeland, & Sroufe, 1997). Such results are exciting; however, it has generally been difficult to establish clear links between attachment processes and specific forms of psychopathology as opposed to general problems (see Van Ijzendoorn & Bakermans-Kranenburg, 1996).

From a theoretical standpoint, it has recently been suggested that attachment processes and social learning processes, when operating with a severely inhibited or anxious child, can become locked together in a vicious cycle that may maintain and magnify anxious responding. Dadds and Roth (2001) proposed that inhibited children are likely to place excessive demands on parents for soothing and comfort. Initially these demands are likely to be responded to by seeking to protect and soothe the child. Over time, however, insecure attachment may develop between the child and the parent, as the child's demands for soothing extend beyond the parental limits of availability, and the child's demands are met with intermittent attempts to distance the child. Research by N. A. Fox and Calkins (1993) demonstrated how the parent's attempts to distance the child resulted in further stress in the child and an increase in demanding. If the child then escalates demands, the parent is somewhat trapped into reinforcing this escalation by once again attempting to soothe the child and stop the unpleasant demands. Insecure attachments can drive a pattern of clinging and dependency on the part of the child that becomes self-perpetuating (Patterson, 1982). Recently, support for this comes from studies showing that the interaction of child temperament, parent-child attachment, and parent behaviour help to maintain child anxiety problems (see Dadds & Roth, 2001; Manassis, Bradley et al., 1994). Clearly, the chances of anxiety problems are maximised when a shy inhibited child who faces adverse environmental challenges is matched with anxious parents, who form an insecure attachment bond, and the parent-child relationship becomes marked by overprotectiveness, avoidant coping strategies, and social isolation.

How do such learning experiences influence the child's way of coping? Outcome expectancy models of anxiety postulate that humans develop an expectation of outcome based on a variety of sources of information, including the situation, socially and verbally transmitted information, and existing beliefs (Davey, 1992). Hence, existing beliefs in highly anxious persons tend to lead to an overestimation of threat and an underestimation of coping resources. Roth and Dadds (1999) proposed that children who tend to behave anxiously have internalised beliefs about the inadequacy of their ability to cope with or influence situations. Children who have a temperamental tendency towards inhibition, and receive messages from caregivers who support this tendency, are likely to develop negative future expectations. Children who later develop internalising disorders, such as anxiety or depression, have not developed positive future expectations and may not have developed a sense of control in the events of their lives. Anxious children tend to become avoidant, and eventually may develop a sense of incompetence or helplessness in the face of challenges (Vasey & Dadds, 2001).

Most anxiety problems are characterised by negative expectations about specific situations (e.g. social situations, public places). However, they may be more diffuse, as in GAD, or global, so that hopelessness and depression develop. In order to develop a sense of selfefficacy and positive future expectations, the development of problem-solving skills may be useful (e.g., Shure & Spivack, 1982). For young children, this primarily involves a transactional process between parent and child. In overprotective relationships, such learning may be deficient. In supportive relationships, the parent does not try to solve the child's problem, but attempts instead to provide support and encourage autonomy. As a result the child learns not only to find their own solutions, but also that they are a competent problem-solver who can have a strong influence in the events of their life. Most contemporary treatments for child anxiety problems promote this idea of the child learning to trust their own abilities and expecting good things to happen. Silverman and Kurtines (1996) refer to it as transfer of control, in which the child is encouraged to take the lead and gain mastery of their environment.

## Multimodal Assessment

One of the most important goals in the assessment of anxiety problems in childhood include determining whether the nature of the problem is actually unrealistic anxiety as opposed to fear and stress regarding real threats such as bullying, violence, and abandonment. To treat a child exposed to real threat as anxious would be highly inappropriate but an easy mistake to make, as in school phobic children who are actually being bullied at school. Second, the assessment should have a developmental perspective in which the child's problems are assessed relative to current and future developmental expectations. Given the subjective and complex nature of anxiety experiences, it is also necessary to consider multiple informants, formats, and settings (home, school, extracurricula activities) in the accurate assessment of child anxiety states. Available assessment procedures in childhood anxiety disorders include the use of structured clinical interviews, self-report measures, direct behavioural observations, self-monitoring of behaviours and accompanying cognitions, and physiological assessment.

The structured clinical interview used most commonly with anxious children is the Anxiety Disorders Interview Schedule for Children (Silverman & Nelles, 1988), with a form to be used for the child and a parallel form for the parents (ADIS-C and ADIS-P). The ADIS has questions relevant to the latest DSM categories and facilitates acceptable inter-rater reliability of anxiety diagnoses in children (see Rapee, Barrett, Dadds, & Evans, 1994; Silverman, 1991). Many other structured interviews are available (see Silverman, 1991, for a review). It should be noted that the reliability achieved from these interviews varies considerably according to the source of the information, the skills of the interviewers, the age of the interviewees, the base rate of the target disorder, and other factors. Silverman (1991), in recognising the variability of inter-rater reliability, advises researchers to speak of reliability levels in terms specific to particular cohorts rather than as a characteristic of particular disorders or interviews. With regard to the validity of diagnoses achieved from structured interviews, there is some evidence that convergence is acceptable with standardised checklists such as the CBCL (see below). However, generally little research has systematically addressed the many ways in which validity can be assessed, and at present, the validity of the interviews must be considered unknown.

A variety of self-report measures are available (see Greenhill, Pine, March, Birmaher, & Riddle, 1998). The ones that have been most utilised both in research and clinical work include the Revised Children's Manifest Anxiety Scale (RCMAS; Reynolds & Paget, 1981), the Fear Survey Schedule for Children Revised (FSSC-R; Ollendick, Matson, & Helsel, 1985), the modified Statetrait Anxiety Inventory for Children (STAIC; J. E. Fox & Houston, 1983), the Spence (1998) Children's Anxiety Scale, the SCARED (Muris, Merckelbach, Schmidt, & Mayer, 1999), and parent/teacher/child ratings of general adjustment across multiple dimensions of dysfunction on screening checklists such as the CBCL (Achenbach & Edelbrock, 1993). Of the checklists, only the Spence measure corresponds to the current DSM or ICD categories. The FSSC-R is used for assessing the content and spread of childrens' fears, and the RCMAS and the STAIC produce measures of felt anxiety symptoms (physiological, worry). Although the reliability of these checklists is generally good, recent research has questioned their discriminative validity. That is, while they clearly discriminate between anxious and nonclinic children, their ability to discriminate reliably between different groups of clinically referred children and the differentiation of anxious and attention deficit children seems particularly problematic (Perrin & Last, 1992).

It is also possible to indirectly measure fear/anxiety by measuring the behaviours that people typically engage in when faced with specific threat-related stimuli. For example, measuring the amount of time a child spends at school will provide an indirect estimate of fear of school. Used under controlled conditions, these measures are usually referred to as behavioural avoidance and approach tests (BAT). The aim of the BAT is to collect objective information about how the person reacts (dependent variable) to fear stimuli (independent variable). For example, a person who has a crippling fear of dogs may be asked to approach and stroke a dog under controlled conditions (the dog is restrained). A range of dependent measures can be taken including proximity to the dog and other behaviours hypothesised to reflect anxiety level. BATs can be standardised or individualised. The former are most commonly used for research purposes and involve a standard series of tasks to which all subjects are exposed. In an individualised BAT, the stimuli to which each child is exposed are selected on the basis of the child's own specific fears. Naturally, this would be more useful in a clinical situation but is also valuable in research since it would maximise the fear ratings achieved. For a comprehensive review of these BATs and other forms of direct observation assessments see Dadds, Rapee, and Barrett (1994).

Psychophysiological measures such as Galvanic Skin Response have been used with anxious children and adolescents with some success, however they require considerable expertise and experience, and the data are plagued by measurement problems and low convergence with other behavioural and self-report measures (see N. J. King, Ollendick, & Murphy, 1997).

The treatment formulation represents the integration of theory of etiology, a theoretically guided and multimodal assessment of the individual case, and the existing literature on the efficacy of available intervention strategies. Although this will in part depend on the skills and theoretical approach of the particular clinician, a number



Figure 1. A summary of assessment components leading to treatment formulation.

of guiding principles can be extracted from existing knowledge.

The conceptualisation of the case should include a diagnostic formulation in terms of current DSM or ICD systems with particular reference to the specific diagnosis and any comorbidity, developmental and cultural characteristics of the child, and how much the problem deviates from the normal expression of fears and anxieties that exist in all children. The diagnostic formulation should also consider the likelihood that the child's fears and anxieties are realistic in context. We have assessed a number of cases of referred "separation" and "social" fears in which the referred child was being exposed on a daily basis to threats of removal from the family home, and bullying at school, respectively. As previously stated, multiple informants should be used in gathering these data.

Factors hypothesised to be implicated in the development and maintenance of the anxiety problem should be carefully considered in the assessment, conceptualisation, and treatment. That is, these elements should be clearly linked and interdependent. Assessment should include a thorough examination of: (1) social learning factors: the extent to which the child experienced a learning history predictive of conditioned or traumatic responses to previously neutral stimuli, and what operant factors are currently maintaining a pattern of avoidance and anxious responding, (2) cognitive factors: the extent to which the child shows a pattern of negative competency and outcome expectancies, low self-esteem, and overattention or selective attention to potential threat in the environment, (3) physiological and temperamental factors: any family history of anxiety and related problems; the extent to which the child exhibits behavioural inhibition and physiological arousal (muscle tension, problem breathing) associated with avoidance and anxiety, (4) family factors: the extent to which the child has stable, nurturing family relationships, and the extent that other family members have anxiety problems, and (5) peer support and social skills: the extent to which the child has the skills and opportunities to develop supportive peer relationships. Figure 1 provides a summary of formulation components leading to a treatment plan.

Using an assessment and therapy procedure that empowers the child and family in terms of acquired knowledge, skills, and decision making, the above factors should be summarised into a concise formulation and treatment plan that clearly prioritorises and addresses the relevant causal factors. The treatment plan will thus usually involve some combination of social learning interventions such as exposure, modelling, and reinforcement for overcoming avoidance, cognitive skills for the child such as positive self-talk, developing positive expectancies, attention to nonthreat stimuli, and reinforcing oneself for success, relaxation, breathing retraining, and other skills for overcoming uncontrollable and unpleasant physiological arousal, a family intervention to establish other family members as positive models of courage and social competence, as sources of stable care and nurturance, and sources of reinforcement for success, and social skills and school interventions to facilitate positive peer relationships and remove any sources of (realistic) fear from the school setting.

The treatment formulation should specify clear goals for improvement that are graduated from easy to difficult so the child has early success and a growing sense of mastery. The active involvement of family members is important, especially for children in the pre-teenage years.

## **Psychosocial Treatments**

Goals of treatment. Given the range of risk and protective factors associated with the development and maintenance of anxiety problems, four general axioms that guide treatment goals are evident. First, the treatment should aim to provide skills to the child directly. Second, the treatment should aim to reduce risk and promote protective factors in the child's social environment. Thus, where such potentials are identified, intervention will in part focus on environmental factors such as parental anxiety, parent-child relationships, peer relationships, and school adjustment. Third, treatments should aim to broadly improve the social functioning of children and their families as well as to specifically reduce anxiety symptoms. Fourth, notwithstanding the previous two axioms, each child will be different and therapists should aim to treat the individual child, not the disorder. Even where a treatment manual is used, flexibility can be incorporated to meet the needs of each particular child and family (see also Kendall, 1998; Kendall & Chu, 2000).

Overview of what treatments work. Recent evidence accumulated through several randomised controlled trials shows that brief psychological treatments for anxiety disorders in children and adolescents are highly effective, with between 60-90% of those treated showing clinically significant improvements after treatment and at follow-up several years later. These interventions are almost exclusively based on social learning principles, specifically, a model that emphasises the interaction of operant learning, conditioned responses, and attentional and other cognitive/verbal processes in maintaining problematic anxiety.

Contemporary treatments utilise an integrative treatment approach, encompassing exposure, modelling, operant, and cognitive-based procedures. Exposure techniques include use of in vivo and imaginal exposure. An advantage in using these techniques is the clarity of procedural guidelines available to the therapist. Still under controversy is the issue of what underlying mechanisms account for the success of exposure-based procedures. Originally Wolpe (1958) explained it as reciprocal inhibition of anxiety through relaxation. However, numerous case studies have been reported wherein the relaxation had little effect on treatment outcome. More recent views conceptualise the changes during exposure treatments in terms of information-processing changes (Davey, 1992; Foa & Kozak, 1986), whereby the person gains a sense of control over the feared stimuli and their own reactions to it. Implosion and flooding type treatments are not usually used with children due to the potential aversiveness of the procedures involved.

Modelling procedures are particularly useful with children and include the use of films, in vivo or participant modelling to encourage coping, and as an aid to exposure work. The child is prompted to imitate the performance of the model demonstrating courageous behaviours and is reinforced for closer approximation to the coping behaviour. Modelling can provide an opportunity for both vicarious extinction of a child's anxiety and an acquisition of more accurate information and effective coping skills relative to the anxiety-provoking situation. The efficacy of modelling procedures in the treatment of childhood phobias and in the preparation of children for stressful events has been clearly documented (Ollendick & Francis, 1988).

Operant-based programs (based on contingency management principles) have been especially successful in the treatment of school refusal, socially avoidant children, and specific phobias (N. J. King et al., 1988). Operant procedures are based on the premise that fear and anxiety will reduce when courageous behaviours are reinforced and fearful behaviours are not. The child is reinforced for approaching the feared stimuli and rewards for fearful behaviours (e.g. parental comforting, substitution of aversive activities by pleasant playtime) are removed. The evidence for the efficacy of operant programs comes mainly from case studies with phobic children, and in general therapeutic success is enhanced when operant procedures are combined with other techniques (N. J. King et al. 1988; Ollendick & Francis, 1988).

Cognitive procedures aim at changing the child's selftalk on the premise that self-doubting and negativistic self-talk increases anxiety and inhibits appropriate responses to feared stimuli. Basically the child is taught to use positive self-talk in the presence of the anxietyprovoking stimuli. Further, cognitive strategies can be used to alter the attention a child pays to threat versus nonaversive stimuli. Thus, a child may learn to enter social situations (e.g., a party) specifically looking out for positive opportunities (e.g., nice food, friends) rather than potential threat (e.g., social scrutiny, bullying people). However, cognitive procedures alone are often not effective in overcoming anxiety reactions in children due to the multiplicity of factors involved such as environmental contingencies, skills competencies, individual developmental factors regarding awareness and identification of self-statements, and the strong physiological component of anxiety disorders. Thus, the integration of cognitive and behavioural procedures in the treatment of childhood anxiety disorders seems to be largely supported in the literature and in recent years, a number of controlled trials have demonstrated the effectiveness of protocol-based psychosocial interventions that are applicable across various categories of child and adolescent anxiety disorders. These will be reviewed next.

Integrated protocol-based interventions. Blagg and Yule (1984) treated 66 children presenting with fear of school and separating from parents with behavioural therapy, hospitalisation, and psychotherapy plus home schooling. The behaviour therapy program incorporated exposure to the school setting and contingency management implemented by both parents and teachers. Both at post-treatment and 1 year follow-up, separation anxiety symptomatology was absent in the behavioural therapy group but still present in the hospitalised (33.3%) and psychotherapy (94%) groups. Average duration of treatment was 2 weeks for behaviour therapy, 45 weeks for hospitalisation, and 72 weeks for psychotherapy plus home-schooling. Since this study, considerable work has gone into understanding the different functions of school refusal, not all of which are directly related to anxiety. Useful taxonomies for guiding the assessment of schoolrefusing children are now available and are highly recommended (Kearney & Silverman, 1996; N. J. King, Tonge, Heyne, & Ollendick, 2000; N.J. King & Bernstein, 2001).

N. J. King, Tonge, et al. (1998) randomly assigned 34 school-refusing children aged 5–15 years to a 4-week cognitive-behavioural therapy (CBT) program or a waiting-list control condition. Treatment consisted of individual child cognitive-behavioural therapy plus parent/teacher training in child behaviour management skills. Relative to waiting-list controls, children who received cognitive-behavioural therapy exhibited a significant improvement in school attendance, and also improved on self-reports of fear, anxiety, depression,

and coping. Maintenance of therapeutic gains was demonstrated at a 3-month follow-up assessment. Last, Hansen, and Franco (1998) conducted a controlled group-outcome investigation of the efficacy of cognitivebehavioural treatment for school phobia. Fifty-six children (aged 6-17 years) with school phobia were randomly assigned to 12 weeks of CBT or an attentionplacebo control condition. Both the experimental and control treatments were equally effective at returning children to school and in reducing children's anxiety and depressive symptoms, Follow-up revealed no differences between groups when the children re-entered school the next school year. Overall, results suggest that psychosocial treatments are effective at returning school-phobic children to school and that the highly structured cognitive-behavioural approach may not be superior to more traditional educational and supportive treatment methods.

CBT programs have also been used to treat mixed groups of anxious children. Kendall (1994) evaluated the effectiveness of a 16-session CBT program for a group of children with overanxious, separation, and social anxiety problems. The treatment centres around having the child develop an individualised FEAR plan: F, for feeling good by learning to relax; E, for expecting bad versus good things to happen through positive self-talk; A, for approaching actions to take in the face of fear; and R, for rewarding oneself for efforts to overcome fear or worry. Compared to a wait-list control, the treated children showed clinically significant gains that were maintained at 1-year follow-up. Follow-up studies have replicated these positive outcomes (Flannery-Schroeder & Kendall, 2000; Kendall et al., 1997) and shown that the treatment effects were maintained to follow-up assessments conducted an average of 3.5 years after treatment (Kendall & Southam-Gerow, 1996).

An issue raised by Ginsburg, Silverman, and Kurtines (1995) and Kendall (1994) concerned the role of the family in these CBT programs. Barrett, Dadds, and Rapee (1996a) compared a CBT intervention based on Kendall's (1990) anxiety management program to an intervention that included the CBT intervention plus a family intervention, again for a mixed group of overanxious, separation anxiety, and socially phobic 9- to 14year-olds. Parental sessions introduced parents to child management skills (reinforcement skills, planned ignoring, giving and backing-up clear instructions), to manage their child's anxiety, explained what the children were learning in the CBT program and illustrated how parents could model and encourage use of strategies learned in the session, and showed parents how they could use the same strategies to manage their own anxiety. At the end of treatment, 61% of children in the CBT group no longer met a DSM-III-R diagnosis, compared with 88% in the combined treatment. Less than 30% were diagnosed free in the wait-list control group. At 12 months follow-up, the relative superiority of the CBT plus family condition was maintained.

Barrett (in press) showed that similar success rates could be achieved by presenting the combined CRTfamily treatment in a group format to anxious children and their parents, thereby significantly reducing costs of intervention, and Barrett, Duffy, Dadds, and Rapee (2001) showed durable treatment effects up to 6 years following treatment. Mendlowitz, Manassis, Bradley, Scapillato, Miezitis, and Shaw (1999) also examined the effect of parental involvement in CBT group intervention on anxiety, depression, and coping strategies in schoolage children. Similar to Barrett et al. (1996a), all treatment groups showed positive change, and concurrent parental involvement enhanced the treatment effects. Cobham, Dadds, and Spence (1999) used the same group intervention to assess the role of parental anxiety in treatment outcome, and the extent to which the second component of Barrett et al's. (1996a) family treatment (parent skills for managing their own anxiety) could alleviate putative poorer treatment outcomes associated with high parental anxiety. Results indicated that high parental anxiety was a risk factor for poorer treatment outcomes for anxious children, and that specifically targeting parental anxiety for intervention could overcome this risk factor in the context of a cognitivebehavioural program for the child. Shortt, Barrett, and Fox (in press) showed positive effects from a similar group treatment for two different age groups (older children and teenagers separately). Further, they collected social validity data showing that all groups viewed such intervention programmes very positively.

Silverman et al. (1999a) used a randomised clinical trial to evaluate the therapeutic efficacy of group CBT therapy (GCBT) versus a wait-list control condition to treat anxiety disorders in children. Results indicated that GCBT, with concurrent parent sessions, was highly efficacious in producing and maintaining treatment gains. Children in GCBT showed substantial improvement on all the main outcome measures, and these gains wore maintained at 3-, 6-, and 12-month follow-ups. Silverman et al. (1999b) evaluated the relative efficacy of an exposure-based contingency management (CM) treatment condition and an exposure-based cognitive selfcontrol (SC) treatment condition relative to an education support (ES) control condition for treating children with phobic disorders. Eighty-one children and their parents completed a 10-week treatment program in which children and parents were seen in separate treatment sessions with the therapist, followed by a brief conjoint meeting. Children in both the CM and SC conditions showed substantial improvement on all of the outcome measures. These gains were maintained at 3-, 6-, and 12-month follow-ups. Interestingly, children in the ES condition also showed comparable improvements at post-treatment and at 3-, 6-, and 12-month follow-ups.

Hayward et al. (2000) examined the efficacy of CBT group therapy for adolescents in females with social phobia and the effect of this treatment on the risk for major depression. Thirty-five female adolescents with social phobia were randomly assigned to treatment or notreatment groups. Only 11 completed the 16 weeks of treatment, which produced a reduction in symptoms of social anxiety and number meeting criteria for social phobia. At the l-year follow-up there were no significant differences by treatment condition. There was also suggestive evidence that treatment of social phobia lowers the risk for relapse of major depression among those with a history of major depression. Combining social phobia and major depression as the outcome produced more robust treatment effects in the l-year follow-up. It was concluded that treatment of social phobia may result in a reduction of major depression.

The above review indicates that anxiety disorders in young people can be effectively treated in the majority of referred cases. Both individual and group-based programs are successful for between 60 and 90% of referred children and adolescents with a range of anxiety

#### ANXIETY DISORDERS IN CHILDHOOD

Table 1

Development **Risk** factors Potential interventions phase Infancy Child Shy temperament/Behavioural inhibition. Early identification of high-risk children and anxious parents. Family Neglect/Overprotection. Parental support and parent training to foster responsive Parental psychopathology especially anxiety. parenting, secure attachment, and positive parental coping strategies. Society Environmental stress. Childhood Social problem-solving training encouraging proactive solutions. Child Reticence/Behavioural inhibition/Shyness. Social isolation. Increasing focus on cognitive strategies as child matures. Exposure programs to overcome fears. Enhancement of social skills and opportunities for peer interaction. Family Parental psychopathology. Training parents to model effective cognitive and Overprotection of child in face of behavioural coping. challenges, selective attention to threat, Positive parental strategies to manage child avoidance. and avoidant solutions. Responsive parenting. Parental overcontrol or criticism. Family connections to school and community. Society Social isolation, insularity. Adolescence Child As above. Possibility of comorbid disorders, As above. Cognitive-behavioural training with increasing focus especially depression and substance use. on adolescent and related issues (depression, substance use). Parent As above. Increasing focus on issues of autonomy for family. Parental training in balancing autonomy and independence with family support. Society Peer pressure. Regarding comorbidity: Peer-based peer skills training groups. prevalence of substance use.

Developmental Risk for Anxiety Disorders and Associated Intervention Strategies

disorders. The effects appear robust up to several years after treatment. Family involvement appears to improve outcomes above an already impressive rate of success for child-focused programs alone. For younger children, the involvement of the family may be more critical. Type of specific diagnosis or presence of comorbidity within the anxiety disorders have not been shown at this point to influence treatment outcomes; however, comorbidity with other problems such as conduct problems, depression, and substance use are associated with treatment difficulties. In the two studies that have used attentioncontrol designs, results have not clearly supported the theoretically based treatments, and so it is impossible to make conclusions at this point about the critical ingredients for successful treatment. Table 1 presents a development model of risk factors, opportunities for intervention, and associated treatments.

There is also evidence that such interventions can also be used in an early intervention and prevention format aimed at larger cohorts of children (Dadds, Spence, Holland, Barrett, & Laurens, 1997; Dadds et al., 1999). This shows that mental health workers are not limited to tertiary treatment work with anxiety disorders in children, and those with access to normative populations (e.g., school nurses, psychologists and so on) can potentially use these interventions at a group level to prevent and reduce existing anxiety problems.

## Associated Pharmacological Treatments

Medication is rarely used as the sole treatment for anxiety disorders in children and adolescents, but is more typically part of a treatment program for older and more severe cases, or where there is resistance to other forms of treatment (Allen, Leonard, & Swedo, 1995; Bernstein, 1994). Unfortunately, there are comparatively few studies that have attempted to evaluate the efficacy of psychopharmacological interventions with anxious children and adolescents and methodological shortcomings often make results equivocal or difficult to interpret (Kearney & Silverman, 1998). However, some recent and welldesigned studies have shown that a combination of medication and CBT treatments may be the most efficacious for more severe problems in older children and adolescents (e.g., Bernstein et al., 2000). Readers are referred to Bernstein and Shaw (1997), Velosa and Riddle (2000), and Kearney and Silverman (1998) for recent reviews.

#### Issues in Choosing a Treatment

The above review shows that brief psychological interventions for anxious children are potentially very successful in producing long-term change. It should be noted that most of the research has focused on SAD, GAD, social phobia, and specific phobias and more specific literatures should be consulted when working with OCD, PTSD, and panic/agoraphobic problems. In terms of clinical decisions needing to be made for the individual child, age of child, and the identification of broader family distress and psychopathology will influence decisions regarding the relative amount of attention paid to child and parent/family interventions. Although the initial research has not revealed important differences due to specific diagnosis or comorbidity within the anxiety disorders, it would be premature not to consider these issues clinically, especially where comorbidity exists with other nonanxiety disorder such as depression and conduct problems. Although there is enormous overlap in the presenting features of all the anxiety disorders, specific diagnoses can be associated

with different clinical challenges. For example, SAD and school phobic children often show a pattern of oppositional behaviour that maintains their avoidance of separation and/or school, and procedures for managing the oppositional behaviour need to be in place (via parent training and school consultation) as an adjunct to the anxiety focus.

It may also be the case that the relative balance of cognitive versus behavioural versus family interventions may be needed according to the child's specific problems. For example, a young child with a specific fear of water may be effectively treated via a family-based exposure program, whereas an older child with GAD may require an intervention that equips the child with cognitive and emotion regulation skills that can be used across a range of settings. The large controlled trials described above typically use manualised treatments that include a comprehensive range of cognitive, behavioural, emotion regulation, and problem-solving skills. It is likely that their inherent comprehensiveness allows them to work well across a range of children and disorder types, However, the downside to this is inefficiency and the careful selection of relevent skills targets for the individual case may reduce average treatment length.

The message inherent in the above is that it is better to base treatment upon a careful, theoretically driven assessment and conceptualisation of the individual child (and family). The mental health sciences, with their current emphasis on scientific and economic accountability, have moved to a model of matching standardised treatments to particular diagnoses. This approach has many advantages for research designs but may be relatively inefficient for individual clinical work.

Finally, it should be noted that group treatments are very effective with anxious children. Clinicians should be encouraged to consider the advantages of setting up ongoing and age-appropriate group interventions for referred children and their families. Although the establishment of a group brings some constraints in terms of a set format versus full flexibility, it should be noted that many of the group interventions reviewed above have individual flexibility built into them. That is, each child selects their own challenges, goals, and rewards within the group. Further, the group allows the child to gain experience with performance in a supportive social setting, and provides increased opportunities for social experience with other parents and children.

#### Therapeutic Process Issues

Finally, a number of clinical process issues can greatly affect treatment outcomes and should be noted. First, child resistance can be real problem when working with anxious children. Although some anxious children can be open and eloquent about their problems, the opposite is often the case. Generally, this is manifest through the child denying any problems due to high social desirability and wanting to appear competent, if not perfect. With younger children, this resistance often takes the form of crying and demanding to be with parents whenever their problems are raised. Many anxious children feel very threatened by unstructured clinical sessions in which they are expected to disclose their problems. We have found that there is little to be gained by pursuing discussion of problems when the child is clearly uncomfortable with this. Rather, it is useful to move ahead by (1) talking about more positive topics in order to gain rapport, (2) framing intervention as a skill-building program rather than a focus on the child as disturbed, and (3) introducing structure by actually getting the child started on the program without unnecessarily dwelling on open-ended discussion of the child's problems.

Second, we alert the reader to the axiom that family education and empowerment is a critical issue in working with parents and children. Interventions that make parents feel blamed, incompetent, or unimportant are unlikely to work. A number of authors have written about strategies for maximising family engagement and change in therapy (e.g., Sanders & Dadds, 1993). Related to this, high levels of anxiety in parents can be an impediment to successful treatment of the child. On the flip side, engaging the parents to work on their own anxiety as a concurrent intervention to the child's program can be a very powerful experience for the whole family and be associated with durable change. The ability of the clinician to engage the parents at the level of their own coping, without conveying blame and incompetence, will be a critical factor in the use of adjunctive family interventions.

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