

# **Developing Measurement and Intervention Tools for Anxiety of Primary School Children**



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## List of Abbreviations

ACE	Adolescents Coping with Emotion
ADIS-IV-C	Anxiety Disorders Interview Schedule for DSM-IV: Child version
APA	American Psychiatric Association
BASC-2	Behavior Assessment Scale for Children-2 <sup>nd</sup> edition
BAI-Y	Beck Anxiety Inventory for Youth
BI	Behavioral Inhibition
CAIS-P	Child Anxiety Impact scale Parent version
CAPS	Coping and Promoting Strength program
CAWS	Child and Adolescents Anxiety Scale
CBCL	Child Behavior Checklist
CBM-I	Cognitive Bias Modification of Interpretations
CBT	Cognitive-Behavioral Therapy
CIA	Central Intelligence Agency
DISC-R	Diagnostic Interview Schedule for Children-Revised
DSM	Diagnostic and Statistical Manual of Mental Disorders
FSSC-R	Fear Survey Schedule for Children – Revised
GAD	Generalized anxiety disorder
IOM	Institute of Medicine
MASC	Multidimensional Anxiety Scale for Children
NIMH	National Institute of Mental Health
PATH	Promoting Alternative Thinking Strategies
RAP	Resourceful Adolescent Program
RCADS	Revised Child Anxiety and Depression Scales
RCMAS	Revised Children’s Manifest Anxiety Scale

PMR	Progressive Muscular Relaxation
SA	Separation Anxiety
SCARED	Screen for Child Anxiety Related Emotional Disorders
SCAS	Spence Children's Anxiety Scale
SCAS-P	Spence Children's Anxiety Scale-Parent version
SEED	Strengthening Early Emotional Development
SoP	Social Phobia
SP	Specific Phobia
STAIC	State-trait Inventory for Children
TRF	Teacher Report Form
WL	Wait list control

## Declaration

I declare that the work on **Developing Measurement and Intervention Tools for Anxiety of Primary School Children** is my own work, both in conception and execution, and that all the sources that I have used or quoted have been indicated and acknowledged by means of complete references. I also declare that no portion of the work referred to in the thesis has been submitted in support of an application for another degree or qualification of this or any other university or other institute of learning.

Signature of the author

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### **Certificate of Supervisor**

This is to certify that I have read the dissertation entitled **Developing Measurement and Intervention Tools for Anxiety of Primary School Children** submitted by **Mahjabeen Haque** for the degree of Doctor of Philosophy in Educational and Counselling Psychology and this is a record of authentic/original research carried out by her under my supervision and guidance.

Supervisor's signature and date:

Professor Dr. Shaheen Islam



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## Abstract

Some degree of anxiety helps to deal with challenges in life but intense and excessive anxiety (i.e. anxiety disorder) interferes with normal life functioning and threatens individual well-being. Anxiety disorders in children and adolescents have become a concern globally and also in Bangladesh where its high prevalence rate poses a threat to the country's future growth and development. Though effective actions are needed to deal with childhood anxiety, there is a dearth of culturally appropriate anxiety measures and intervention programs to tackle the problem. To address the needs, three studies were carried out in the present PhD project with the aim of adapting anxiety measures and developing an intervention program suitable for the children and youths of Bangladesh. In the first study, three anxiety measures, namely Child and Adolescent Worry Scale, Spence Children's Anxiety Scale and Spence Children's Anxiety Scale-Parent Version were adapted and validated in Bangla. The adapted scales had excellent internal consistency, test-retest reliability, content validity, criterion validity and construct validity. In the second study, a four-week intervention protocol was designed combining CBT and bibliotherapy where five story books were written based on cognitive behavior therapy (CBT) to address various anxiety disorders including separation anxiety, selective mutism, specific phobia, social phobia and generalized anxiety. The stories taught children various techniques of dealing with anxiety, such as relaxation, psychoeducation, role-playing, imagery, cognitive restructuring, distancing, talking back to anxieties, container exercises, graded exposure and positive self-talk. To conduct intervention sessions, self-help activity book and modules (manuals and materials) were also prepared. Subject matter experts, children and parents evaluated the intervention program to be appropriate for handling anxiety.

In the third study, the effectiveness of the intervention program was investigated in primary school children in school settings. The three adapted anxiety measures were used before and after the intervention within the framework of a quasi-experimental mixed design. Results indicate that the intervention significantly reduced anxiety in children; anxiety level dropped from the pretest to the post-test phase in the experimental condition but not in the control condition. The qualitative assessment of the program by the children and their parents further supported the findings. The newly developed intervention program is theoretically sound (i.e. based on established theories on psychopathology), culturally sensitive (i.e. appropriate to use in Bangladesh), efficient (i.e. requires few sessions and can be used in group settings with low cost), and effective in reducing anxiety in children. The adapted scales can be used to assess anxiety in children in various settings. Altogether, the outcomes of the present PhD project are expected to contribute to improve the mental health and quality of life of children and young people in Bangladesh.

## **Chapter 1 Introduction**

### **Part 1**

#### **1.1: Anxiety**

Anxiety is a common feeling that every person in their lives has to go through. Starting from early childhood to old age, people encounter anxiety in their daily life, for example, appearing for an interview, waiting for exam results, facing the boss, making a presentation, being alone in dark etc. In case of children and adolescents, all babies experience anxiety when separated from attached figures (mostly around nine months), pre-school children usually have the fear of ghosts, dark and animals, primary school going children go through the phases of more realistic fears related to illness and death, and most adolescents experience some form of worry related to their appearance and evaluation by others (Nauta, 2005). Anxiety in childhood is a part of typical development and children often grow out of this anxiety as they mature. Some anxieties are mild and manageable, and some are severe and it interferes with daily functioning and mental well-being. In real sense, anxiety is not all bad and to some extent it has beneficial consequences. Anxiety helps to avoid dangerous situations, the fear of failing in exams motivates student to study hard and perform well in exams. Little amount of anxiety helps one to perform well in every sector of live. If people did not have anxieties, one would cross the road without looking and end up in hospital. Therefore, it is considered as a valuable and functional emotion.

Anxiety is an emotional state that is often considered parallel to fear (Sweeney & Pine, 2004; (Campbell, 2005). Fear is the emotional response to real or perceived impending threat, whereas anxiety is the anticipation of future danger. There is close knot between these two states and they overlap but still they differ. Fear is more often

associated with rush of autonomic arousal necessary for fight or flight, thoughts of abrupt danger, and escape behaviors, whereas anxiety is more often connected with muscle strain and caution in preparation for future danger and avoidant behaviors (American Psychiatric Association, 2013). As a basic human emotion, anxiety consists of fright and doubt that typically appears when an individual identifies an event as being a threat to oneself.

Anxiety may be triggered in response to specific situations, people or events, as well as in anticipation of an event and is generally conceptualized as consisting of physiological, cognitive, and behavioral responses (Craske & Waters, 2005; Campbell, 2009). Others held the view that anxiety is comprised of cognitions, behaviors, physiological responses, and relational aspects (Ollendick & March, 2004; Morris & March, 2004; Silverman & Treffers, 2001). Physiologically, anxiety is defined by heightened autonomic arousal (e.g., increased heart and respiration rate, perspiration, sweating, desire to urinate, and generalized muscle tension) and somatic complaints (e.g., headaches, stomachaches). Behaviorally, anxiety is characterized by avoidance and escape, deficits in attention, performance and control, restlessness and agitated behaviors. Cognitive features of anxiety include hyper vigilance for threat, danger-loaded thoughts, worry, maladaptive thoughts, cognitive distortions, misinterpretation, catastrophizing and persistent intrusive thoughts.

The term anxiety is used to describe uncomfortable and unpleasant feelings that an individual goes through when in stressful or scared situations. It can best be understood on a continuum ranging from a normal, adaptive response, to the demands of a chaotic life full of stress, strain and, deadlines to a more severe form that interrupts a person's daily functioning. Worry, fear, and anxiety are met commonly in therapeutic settings but anxiety requires professional intervention when it is severe, persistent and developmentally irrational (i.e. which continues beyond reasonable age norms). Although it is considered a part of normal human development and is adaptive in some circumstances, fear and



anxiety can become so intense that they can affect a child's functioning and psychosocial development. In these cases, anxiety may be considered "clinically significant" or/and "pathological" and warrants a diagnosis (Waters, Farrell, & Schilpzand, 2013). The segregation between normal and clinical anxiety, however, can be meticulously difficult in children because children exhibits many fears and anxieties as part of their normal development (Murriss, Merckelbach et al., 1998).

## **1.2 Anxiety as Disorders**

"Anxiety disorders include disorders that share features of excessive fear and anxiety and related behavioral disturbances" (American Psychiatric Association, 2013, pp 189). Anxiety disorders thus differ from developmentally normal fear or worry by being extreme and continuing beyond developmentally appropriate phases. Since children as well as adults with anxiety disorders generally overrate the danger in situations they fear or avoid, the determination of whether the fear or anxiety is out of proportion or not considering the actual threat is made by the clinician, taking into account the cultural contextual factors.

Childhood anxiety disorders should be examined from a developmental psychopathology perspective, which presumes that normal and abnormal expressions of worry and anxiety are part of one and the same continuum (Vasey & Dadds, 2001). Thus on a continuum from normal levels of anxiety, which can be helpful, to excessive anxiety, which is where anxiety disorders are present (Eysenck & Derakshan, 1997). Excessive anxiety occurs when a child experiences fears that are disproportionate to the level of threat; that is, when there is a fear response in the nonexistence of a actual threat (Barrett & Pahl, 2006; Sweeney & Pine, 2004). Despite anxiety being on a continuum, anxiety is categorized as a disorder when a person demonstrates indications of extreme distress that

last a considerable time (persisting between one to six months depending on the type of disorder), are developmentally inappropriate and impede with daily life functioning in academic, social, personal and occupational areas, often leading to avoidance behaviors (Barrett & Pahl, 2006; American Psychiatric Association, 2000; Campbell, 2006).

Theoretical controversy exists as to whether anxiety experienced in a disorder is innately different from everyday anxiety. It can be explained that considering anxiety as a disorder on a continuum is when there are extremes symptoms and the distress and avoidance it causes. In looking at childhood anxiety, it is important to be aware of developmental considerations like, whether the fears and behaviors are developmentally appropriate or not. Because most children exhibit some degree of anxiety about some situation at some stage of their lives but importantly if these persist beyond reasonable age norms, or are particularly severe and distressing, then it is red flag they could be forming the basis of a disorder. In clinical settings, anxiety disorder refers to conditions where severe, persistent, free-floating anxiety is the core feature. Clinically significant anxiety can be differentiated from normal anxiety on the basis of unmanageability of the anxiety, pervasiveness of fear and avoidance, and the degree of interference in functioning in normal living (Albano 2001).

### ***1.2.1 Anxiety as a unidimensional or a multidimensional concept***

There is a trend to define anxiety as either unidimensional (trait) or multidimensional in nature. Anxiety as a trait refers to a broad, underlying single factor that may form a susceptibility to each of the anxiety disorders. Several theoretical frameworks have elaborated this single factor concept (see Nauta, 2005). These concepts include negative affectivity, neuroticism, harmful avoidance, or behavioral inhibition (Zinbarg & Barlow, 1996). Empirical indications provide support for a common underlying factor. First, anxiety disorders tend to co-occur. Around 50% of children and adolescents in a clinical

sample had a coexisting anxiety disorder, which may imply the existence of an underlying construct (Anderson, 1994). Second, different anxiety disorders tend to respond positively to the same drug and cognitive-behavioral therapy components (e.g. Kendall, 1994), and treatment outcome was independent of any specific anxiety disorder (Cobham, Dadds, & Spence, 1998; Berman et al., 2000) again indicating that the disorders may have common underlying features. Third, comorbid anxiety disorders tend to fade with successful management of the primary anxiety disorder.

Diagnostic and Statistical Manual of Mental Disorders (DSM-V, American Psychiatric Association, 2013) is an extended example of this description of different classification of disorders. In clinical practice, the clinician usually requires information about the gathering of particular prototypes of anxiety problems. This information may offer clues as to the type of situations that the child finds difficult and thus may steer the pathway of the treatment.

A number of researchers presented evidence supporting the hierarchical model of anxiety. Both a higher order factor of trait anxiety and lower order factors providing the basis for differentiation among patient groups have been found (Zinbarg & Barlow, 1996). Separate factors of anxiety, namely generalized anxiety disorder, panic disorder, obsessive-compulsive disorder, and social phobia were also found (Brown, Chorpita, & Barlow, 1998). In the so-called tripartite model (Clark & Watson, 1991; Watson et al., 1995) a general negative affectivity component has been identified as being the higher order factor for both anxiety and depression, with anxiety and depression consisting of distinct symptomatology at a 'lower' level. This model has been replicated in children and adolescents (Laurent & Ettelson, 2001).

### ***1.2.2 Anxiety as a dimensional or a categorical concept***

In defining anxiety disorders the second issue is the argument between a dimensional and a categorical concept. Anxiety is mostly perceived as a dimensional feature, as existing on a continuum in the arena of psychology. Children differ in their level of anxiety, and those with heightened anxiety are likely to experience greater problems in adaptive functioning. In the categorical concept, which is based on the medical model, a child has an anxiety disorder when meeting certain criteria for that disorder according to the DSM. If a child meets too few criteria, there is non-existence of disorder. Therefore there are some serious limitations of this model. Firstly, it does not allow for evaluation of the severity of the disorder, secondly, the severity cut-off is quite arbitrary in dividing the two groups with and without the disorder, and thirdly, individuals in the same category may not share the same symptoms (e.g. in separation anxiety disorder, 3 of 8 symptoms are required in DSM-5 (American Psychiatric Association, 2013)).

Researchers have asserted that in both theory and assessment, it is necessary to view anxiety as a dimensional (versus a categorical) and a multidimensional (versus a unidimensional) concept (Endler et al., 2001).

However, anxiety prevailing in young children is comparatively new concept which has drawn the attention of the researchers for the last few years. The next discussion is on the classification of the anxiety disorders.

### **1.3 Manifestations of childhood anxiety**

The differentiation among anxiety disorders are made on the basis of kinds of objects, or situations that provoke fright, anxiety, or avoidance behavior, and associated cognitive thoughts. Hence, while the anxiety disorders are inclined to be highly coexists

with each other, they can be distinguished by close inspection of the kinds of situations that are dreaded or avoided and the subject matter of the associated ideation or beliefs. Now we would look into the different types of anxiety disorders. These are organized and presented developmentally and sequentially according to the typical age of onset.

### ***1.3.1 Separation anxiety disorder (SA)***

It is characterized by developmentally unsuitable and excessive anxiety regarding separation from home or from those to whom the child is attached. In a child's life, this disorder causes considerable distress or harm in social, academic, or other important areas of functioning. Children with separation disorder have persistent fear about harm coming to attached figures and occurrences that could result in loss of or separation from attachment figures. To be considered as a disorder, the disturbance must last for a time period of at least four weeks in children and adolescents and the onset must be before the age of 18 (American Psychiatric Association, 2013).

The behaviors that are exhibited by the children are social withdrawal, lethargy, sadness, or difficulty concentrating on work or play. They may avoid staying home alone, playing at friend's house, or sleeping over at a friend's or relatives' house. Homesickness is extremely common. Moreover, separation anxious children may call their parents frequently when away from them and ask repeatedly for reassurance. Depending on their age, children may have fears of insects, animals, ghosts, darkness, burglars, hijackers or kidnappers, boats, car accidents and many more. These situations are perceived as presenting threat to the family or themselves. They become extremely upset at the possibility of separation. Children may show anger, clinging behavior or sporadically aggression toward the person who is forcing separation. Children suffering from this disorder may become demanding, invasive, and in need of constant attention. It is the

most common cause of school refusal. Chronic school refusal along with this disorder is a serious condition since it has a poor prognosis if left untreated. Some youngsters with this condition go on to develop panic disorder and agoraphobia (Dick-Niederhauser & Silverman, 2006).

In children and adolescents the prevalence of separation anxiety is estimated to be nearly 4% and 1.6% respectively in United States (American Psychiatric Association, 2013). In community setting the disorder is more frequent in girls but in clinical sample of children it is equally common in boys and girls. Till date it is the most rampant disorder in children under 12 years. Yet it is surprising to note that separation anxiety disorder has received relatively little research attention (Dick-Niederhauser & Silverman, 2006).

### ***1.3.2 Selective Mutism***

It is characterized by a constant failure to speak in social situations, in which there is an expectation to speak even though the child speaks in other familiar situations. That is, with selective mutism the child speaks at home or with close ones and is mute at pre-school or school or with unfamiliar persons. They do not initiate speech or reciprocally respond when spoken to by others. This is equally true for unfamiliar children as well as adults. This failure to speak has significant consequences in academic achievement (e.g. not being able to read aloud) or interferes with normal social communication. As they mature, they may encounter increasing social isolation. In schools, they often do not communicate with teachers regarding their academic (e.g. not understanding a class assignment) or personal needs (not asking to use the washroom) which leads to severe impairment in school and social functioning.

This condition typically begins in the pre-school years (before age 5) and is associated with social anxiety. Selective mutism is relatively rare (.03% to 1%) among clinic vs. school vs. general population. Also the prevalence does not vary by sex or race.

### ***1.3.3 Specific phobia (SP)***

Children with specific phobia are extremely fearful about a particular object (e.g. injection) or situation (e.g. flying, heights) and are avoidant of the fearful object or situation. The phobic object or situation more or less always immediately induces fear, or anxiety, or avoidant behavior to such a degree that is persistent and out of proportion to the actual risk posed. If not avoided children endures the object or situation with intense fear or anxiety. There are various types of specific phobias - animal (e.g. spiders, insects, dogs etc.), natural environment (e.g. height, storm, water etc.), blood-injection-injury (needles, invasive medical procedure), situational (e.g. airplanes, elevators, enclosed places) and other situations (e.g. situations that may lead to fainting, freezing, choking or vomiting such as costumed characters or loud sounds).

The 12-month community prevalence estimate for SP is approximately 7-9%. Prevalence rates in the United States and European countries are approximately 7-9% and about 6% respectively as reported in DSM V (American Psychiatric Association, 2013), but rates are generally lesser in Asian, African, and Latin American countries (2%-4%). Occurrence rates are approximately 5% in children and are approximately 16% in 13-17 year olds. Females are twice affected than males, regardless of age. Gender difference exists regarding different phobic stimuli, such as animal, natural environment, and situational specific phobias are predominant in females, whereas blood-injection-injury phobia is experienced nearly equally by both genders (American Psychiatric Association, 2013).

SP develops through direct or indirect negative experiences such as following a traumatic event (e.g. being bitten by a dog or trapped inside an elevator), observation of others going through a traumatic event (e.g. watching a car accident), an unexpected panic attack in the to be feared situation (e.g. an unexpected panic attack while on the bus or train or tunnel), or informational transmission (e.g. extensive media coverage of a plane crash or ship sunk or building collapse). In many instance, individuals suffering from specific phobia cannot recollect the specific reason for the onset of their phobias. Specific phobia typically develops in early childhood, with the majority of cases developing prior to age 10 years. Individuals suffering from specific phobia with comorbidity are 60% more likely to make a suicide attempt than are individuals without the diagnosis (American Psychiatric Association, 2013).

#### ***1.3.4 Social anxiety disorder /Social phobia (SoP)***

Children suffering from this disorder are fearful or anxious about social interactions and places that involve the possibility of being evaluated by others thus avoids such interactions and situations. These include meeting new people, performing in front of others, giving a presentation etc. The cognition behind the idea is of being negatively scrutinized by others, by being embarrassed, put downed, or rejected, or offending others. SoP leads to a constricted social life cause exposure to the social or performance situation almost invariably aggravates an immediate anxiety response, and these situations are most commonly avoided, or endured with terror. It interfere significantly with the child's daily routine, academic or social functioning, or other important areas of functioning. Children with social phobia usually avoids asking a question to the teacher, showing initiative during class breaks, asking for something in a shop, joining sport clubs, going to birthday or wedding parties, talking to a classmate, or showing assertiveness in general. Behaviors not only include avoidance, also crying, freezing, or irritability. Children with social phobia are



reported to show the highest levels of somatic symptoms mainly trembling, heart palpitations, sweating, and nausea. The symptoms must have persisted for at least 6 months to be clinically significant. Median age of onset of this disorder in United States is 13 years, and 75% of individuals have age of onset between 8 and 15 years (American Psychiatric Association, 2013). Social anxiety disorder ranges from 1.6% (Essau, Conradt, & Petermann, 1999) to 3.3% (Ratna, Kaltiala-Heino, Rantanen, & Marttunen, 2009).

### ***1.3.5 Panic Disorder***

Recurrent unexpected panic attacks occurs in panic disorder. These attacks are experienced as heightened episodes of strong anxiety, or terror and are extremely distressing, often associated with feelings of impending doom. Young children having a panic attack come to perceive normal fluctuations in autonomic arousal as anxiety provoking and thus change their behaviors in maladaptive ways. Panic attacks are sudden rush of intense fear or intense distress that reach a peak within minutes, accompanied by physical (shortness of breath, palpitations, chest pain or discomfort, choking etc.) and/or cognitive symptoms (*I'm going to die, I'll lose control, I'm going crazy* etc.) Panic attacks may be expected as they may occur in response to a typically feared object or situation. Also, they may be unexpected as when they occur for no apparent reason. . Frequently, from panic attacks secondary agoraphobia develops (American Psychiatric Association, 2013). Therefore, the child fears leaving the safety of the home in case, a panic attack occurs in a public setting though according DSM V, panic attack is rare in childhood (less than 0.4% before the age 14 years).

### ***1.3.6 Agoraphobia***

Children with agoraphobia are worried and anxious about two or more of the following situations such as riding in a bus or other public transports; being in open spaces

like in a field or large play ground, market places; being in enclosed spaces like in toilets, cinema halls or classrooms; standing in line or being in a crowd; or being outside of the home alone in other situations. The cognition behind these fears are the thoughts that escape might be difficult from these situations or help might not be accessible in the episode of developing panic-like symptoms or other debilitating or humiliating symptoms. These situations almost always provoke fear or anxiety and are therefore, often avoided carefully and intentionally. Children suffering from this disorder require the presence of a companion. First onset in childhood is rare. The overall mean age at onset is 17 years (American Psychiatric Association, 2013).

### ***1.3.7 Generalized anxiety disorder (GAD)***

The key attributes of general anxiety disorder are constant, excessive anxiety and worry about a number of events or activities, including work and school performance. When youngsters experience generalized anxiety, they have an ongoing apprehension that misfortunes of different variety will occur. Their anxiety is not focused on one particular object or situation as in other types of anxiety disorder. The focus of concern may shift from one concern to another. The range of topics to worry about is numerous such as quality of their performance or competence at school or in sporting events to punctuality, perfectionism, earthquakes etc. The child may find it difficult to control the worry and to keep worrisome thoughts from interfering with attention to tasks at hand. Besides, the child experiences physical symptoms, such as restlessness or feeling on edge; being easily exhausted or upset; difficulty concentrating or mind going blank; muscle tension; irritability; and sleep disturbance (Kendall & Pimentel, 2003). Children with GAD may avoid doing schoolwork or participating in sports for fear of making mistakes. Moreover, they may ask many questions and express recurring concerns on upcoming events.

With respect to perception, these disorders differ in the categories of stimuli which elicit anxiety. Cognitions in all types of disorders have the detection and/or avoidance of danger as the central organizing theme. In each of the types, the beliefs about threat and danger are accompanied by an affective state, and physical symptoms. Finally, it is to be noted that though the manifestation of anxiety related impairments in children differs from that in adults, systematic examinations of this phenomenon are not reported as extensively in the child and adolescent literature as in adult literature (Muroff & Ross, 2011), mainly because of underestimation of childhood psychopathology.

#### **1.4 Prevalence of childhood anxiety disorders**

Researches on anxiety indicated that anxiety disorders are among the most common psychiatric disorders in children and adolescents (Beesdo, Knappe, & Pine, 2009; Craske et al., 2008; Baumeister & Härter, 2007; Cartwright-Hatton, McNicol, & Doubleday, 2006; Kessler, Chiu, Demler, & Walters, 2005; Canino et al., 2004; Ford, Goodman, & Meltzer, 2003; Costello, Mustillo, Erkanli, Keeler, & Angold, 2003). Though most researchers came to an agreement on one issue that anxiety disorders being the most prevalent but there is great discrepancy between the prevalence rates of the disorders among the studies. Some of them are presented to have an idea on the discrepancies. Anxiety disorders are experienced by 10% to 21% (Costello et al., 2003; Cartwright-Hatton, McNicol, & Doubleday, 2006) of children whereas Beesdo reported it affects 22% of children (Beesdo et al., 2009). Recent epidemiological studies suggested that between 2 and 8 % of children may have an anxiety disorder (Kessler, Ruscio, Shear, & Wittchen, 2009; Kessler, Ruscio, Shear, & Wittchen, 2010; Merikangas, Nakamura, & Kessler, 2009; Rapee, Schniering, & Hudson, 2009; Roberts, Roberts, & Xing, 2007; Lowry-Webster, Barrett, & Dadds, 2001), other studies have suggested that between 8 to 12 % of children suffer from some type of anxiety disorder that is sufficiently severe to interfere

with their daily functioning (Kessler et al., 2009; Kessler, Ruscio, Shear, & Wittchen, 2010; Merikangas et al., 2009; Rapee et al., 2009; Roberts et al., 2007; Lowry-Webster et al., 2001; Essau, Sakano, Ishikawa, & Sasagawa, 2004). Another study indicated that approximately 3-24% of children below the age of 12 develop noteworthy anxiety problems that hamper with daily functioning (Cartwright-Hatton et al., 2006). Among these nearly 2.5% to 5% of children meet criteria for an anxiety disorder (Costello et al., 2003; Ford et al., 2003). In general community samples of children it has been estimated that 5.7% to 17.7% % of children suffer from anxiety disorder (Kessler et al., 2008); (Kessler & Wang, 2008). In contrary, as the most widespread mental disorders during childhood and adolescence, anxiety disorders with lifetime prevalence rates approaching 30% prior to age 18 (Merikangas et al., 2010). A recent epidemiological meta-analysis (Costello et al., 2011) estimated the prevalence of anxiety disorders to be 12.3% for children (age 6–12) and 11.0% for adolescents (age 13–18). In addition, a much larger proportion of youth experience subclinical levels of anxiety with prevalence rates up to 49% (Muris, Merckelbach, Mayer, & Prins, 2000). Costello claimed that large range of prevalence rates reported is owing to variety of measures, informants and countries across studies (Costello et al., 2003). In another study with clinical samples it was observed that 58.4% had a primary diagnosis of generalized anxiety disorder, followed by separation anxiety disorder (22.2%) and social phobia (18.8%) (Kendall, Brady, & Verduin, 2001). The overall prevalence for anxiety disorders in children and adolescents is approximately 6-10% as reviewed in major epidemiological studies of childhood anxiety disorders (Merikangas et al., 2009; McCracken, Walkup, & Koplewicz, 2002; Stein, Hollander, & Rothbaum, 2009; Ost & Treffers, 2001).

Studies have shown that specific phobia, social phobia, generalized anxiety disorder, and separation anxiety disorder are most common, with mean prevalence rates

between 2.2 and 3.6%. Agoraphobia (1.5%) and post-traumatic stress disorder (1.5%) are less prevalent, whereas panic disorder and obsessive–compulsive disorder are relatively rare (i.e., less than 1%; Costello, Egger, & Angold, 2005). Reviews of some major epidemiological studies reported the approximate prevalence of separation anxiety is 3%, of selective mutism is less than 1%, of simple phobia is 3%, of social phobias is 1%, of generalized anxiety disorders is 2% and of panic disorder is less than 1%. Many children meet criteria for two or more anxiety disorders, so the prevalence rates for individual disorders sum to more than 10% (Ost & Treffers, 2001). While this is the picture of prevalence rates in developed countries, developing countries surely demand a close look into the matter.

Epidemiological studies conducted on child and adolescent psychopathology in the developing world have produced prevalence estimates ranging from 1 to 49% (Hackett, Hackett, Bhakta, & Gowers, 1999). These large inconsistency is due to the lack of one or more of the methodological features required for generating credible prevalence estimates, namely: an adequate sample size, a representative sampling structure, standardized assessment measures that are suitable for generating exact diagnoses (as opposed to use of screening questionnaires alone), explicit and internationally accepted diagnostic criteria, and assessment not only of symptoms but also of consequential distress and social impairment (Fleitlich-Bilyk & Goodman, 2004). There are some studies that do meet these crucial methodological requirements and they reported a range of prevalence ranging from 5 to 18%, which is reliable (Canino et al., 2004; Fleitlich-Bilyk & Goodman, 2004).

The representation of anxiety disorder occurrence in Bangladesh is somewhat similar to the developing countries rate. A Bangladeshi study showed that 16.14% of outpatients of National Institute of Mental Health (NIMH) had anxiety disorders (Mohit et al., 2001). In a Bangladeshi sample of 5 to 10 years, the prevalence rate for

psychopathology was 11 to 21% (Mullick & Goodman, 2005). The prevalence is probably higher in adolescents (Ford et al., 2003). The conservative assumption was that 10% of Bangladeshi children and adolescents showed childhood psychopathology (Mullick & Goodman, 2005) though the statistics only on anxiety disorders are not available. In a nationwide community survey prevalence of psychopathology was found to be 16.05%. Among them 2.9% had GAD, 1.3% panic disorder, 0.9% agoraphobia, 0.5% obsessive compulsive disorder (OCD) and 0.3% simple phobia (Firoz et al., 2006). Another study reported that among 206 mentally ill patients, 7.3% had anxiety neurosis, 6.8% GAD, 4.9% OCD, 2% panic disorder, 1% agoraphobia, 0.4% phobia and 0.4% mixed anxiety and depressive disorder (Chowdhury, Yasmeen, Chowdhury & Hakim, 2011).

Given the high prevalence of anxiety disorder, it is critical that the resulting impairment is understood, addressed, prevented and intervened when possible.

### **1.5 Age of onset**

Usually the onset of anxiety disorder is early in life (Costello et al., 2003). It has been found to have the earliest median age of onset of all psychiatric disorders (Muris & Broeren, 2009; Kessler et al., 2005). Average age of onset estimates range from 6 to 12 years (Merikangas et al., 2010; Costello et al., 2005), making anxiety disorders among the earliest classes of psychopathology to develop. The onset of the pathology appears to be dependent on the type of anxiety disorder present, with certain disorders generally beginning in childhood (e.g., separation anxiety and specific phobia) and others more likely to develop in adolescence period (e.g., social phobia and panic disorder) (Costello, Foley, & Angold, 2006; Kessler et al., 2005; Roza, Hofstra, van der Ende, & Verhulst, 2003a). Children younger than 6 years can also exhibit significant anxiety symptoms (Edward, Rapee, Kennedy, & Spence, 2010; Spence, Rapee, McDonald, & Ingram, 2001), which are linked to substantial impairment (Ioalanga et al., 1995) and increased anxiety

symptoms in later childhood (Feng, Shaw, & Silk, 2008). Unfortunately, in spite of high prevalence and associated miseries, over 80% of youths suffering from anxiety disorders do not get mental health services (Merikangas et al., 2011). Eventually when they do receive treatment, it typically occurs many years following the onset of disorder, often in response to severe distress, impairment, and suicidal ideation (Essau, 2005). In other studies, only approximately 20% to 30% of children with these disorders accessed treatment services (Brown & Whiteside, 2008; Sawyer et al., 2001). Adolescent boys and girls did not differ with respect to age of onset of an anxiety disorder (Lewinsohn, Gotlib, Lewinsohn, Seeley, & Allen, 1998).

### **1.6 Consequences**

Excessive anxiety has negative effects in many areas of children's lives, both in the short term and long term. Anxiety disorder not only causes heightened distress to the child, parent and school staff, it may also have a significant negative impact on a child's quality of life (Ramsawh & Chavira, 2016), worse school performance (Owens, Stevenson, Hadwin, & Norgate, 2012a) and social development and persist chronically into adulthood, especially when untreated (Chivara, Stein, Bailey, & Bailey, 2005). Childhood anxiety disorders are associated with a variety of negative outcomes later in life (Hirshfeld-Becker, Micco, Simoes, & Henin, 2008; Costello et al., 2003). Studies highlight many important consequences of anxiety (Merikangas et al., 2009; Lowry-Webster et al., 2001; Rapee et al., 2009; Roberts et al., 2007). They impact considerably on children's functioning in family, social, and academic domains i.e. anxious children face more difficulties in family, and social interactions and in school activities with lower academic achievement, excessive school absenteeism and impaired peer relationships (Essau, Conrandt, & Petermann, 2000; Ezpeleta, Keeler, Erkanli, Costello, & Angold, 2001; Owens, Stevenson, Hadwin, & Norgate, 2012b). Children with anxiety disorders

were 2.9 times more likely than children without any disorder to fail to complete secondary school (Stoep, Weiss, McKnight, Beresford, & Cohen, 2002). They have a higher rate of loneliness and a higher risk of being bullied or rejected by their peers (Vasey & Dadds, 2001; Morris & March, 2004). They are also more prone to drug abuse problems, psychosomatic illnesses, and suicide, and are more liable to use healthcare services once they become adults (Deas-Nesmith, Brady, & Campbell, 1998; Morris & March, 2004; Bodden, Dirksen, & Bögels, 2008). In families with clinically anxious children, societal costs have been estimated to reach 20 times more than families in the general population (Morris & March, 2004; Bodden et al., 2008).

Research has demonstrated that children with an anxiety disorder were likely to fulfill the diagnostic criteria up to 8 years after the onset of the disorder (Kovacs & Devlin, 1998). Evidence suggests that childhood anxiety may play a casual role in the development of depression among young adults (Cole, Peeke, Martin, Truglio, & Seroczynski, 1998; Ezpeleta et al., 2001). Epidemiological research has shown that in 80% of the young adult cases, social phobia in adolescence preceded depression, substance misuse, or other anxiety disorders (Wittchen, Stein, & Kessler, 1999). In youth it may lead to chronic emotional problems and substance abuse (Pardee, Colder, & Bowker, 2014), and anxious symptoms often worsen over time (Spence, Barrett, & Turner, 2003; Kendall et al., 2007). Anxiety has been shown to precede the eating disorder in most cases (Godart et al., 2000; Godart et al., 2002). Particularly social anxiety (Blanco, Nissenon, & Liebowitz, 2001) have been found to be strongly associated with eating disorders.

Children with anxiety disorder are at a significantly higher risk to continue to have an anxiety disorder as they transit from childhood to adolescence (Bittner et al., 2007) as well as increased likelihood of psychiatric disorders later in life (Copeland, Shanahan, & Costello, 2009; Bitter et al., 2007; Kovacs & Devlin, 1998). Pediatric anxiety disorders are



often unrecognized and untreated (Chivara et al., 2005), and may lead to comorbid disorders later in life (Kendall & Pimentel, 2003). Poor mental health is one of the strongest predictors of unhappiness in adulthood, stronger than income, marital status, or employment status (Clark, Layard, & Senik, 2012). In the United Kingdom, mental illness in adulthood accounts for 40% of all disability. Layard (2006) reported that the estimated cost of anxiety and depression is £12 billion a year (about \$19 billion U.S.) including loss of earnings and expenditure on welfare benefits.

A mild to moderate level of anxiety is vital for learning and can support better adjustment, but excessive anxiety can be detrimental to children's physical as well as psychological health (Brown & Whiteside, 2008; Muris, Mayer, Vermeulen, & Hiemstra, 2007). If left untreated, anxiety disorders are relatively constant, specifying that they are not an experience children outgrow naturally.

## **1.7 Gender and Age**

Two demographic factors are important when investigating anxiety in children, namely gender and age (Bodden et al., 2008). Several studies have shown that girls report higher levels of anxiety (almost twice) than boys (Essau et al., 2004; Costello et al., 2003; Castellanos & Hunter, 1999). There is clear evidence that this prevalence already emerges at a very early age (Lewinsohn et al., 1998). This could be due to the likelihood of parents, teachers and peers encourage children to conform to gender stereotype behavior by accepting and reinforcing anxious behaviors in girls, and activity and assertiveness among boys (McLean, Asnaani, Litz, & Hofmann, 2011; McLean & Hope, 2010). Research have shown that certain disorders generally commence in childhood such as separation anxiety and specific phobia and others more likely to develop in adolescence, for example social phobia and panic disorder (Costello et al., 2006; Kessler, Demler, et al., 2005; Roza,

Hofstra, van der Ende, & Verhulst, 2003b).

### **1.8 Comorbidity**

Anxiety disorders in children rarely take place in isolation, and are often very much comorbid with other anxiety disorders and depressive disorders (Costello et al., 2003). Comorbidity is familiar among children with anxiety disorders in clinical and community children. Epidemiological studies reported that it is not uncommon for children to have multiple anxiety disorders (Cunningham & Ollendick, 2010). High rates of comorbidity exist between generalized anxiety disorder, separation anxiety disorder, and specific phobia (American Psychiatric Association, 2013). Other anxiety disorders like agoraphobia, panic disorder, OCD, and PTSD have found to have less clear-cut comorbidity, which could be due to low prevalence rates (Costello et al., 2004). Anxiety disorders also co-occur with depression, oppositional-defiant disorder, conduct disorder, attention-deficit/hyperactivity disorder, and substance use in children (Costello et al., 2004). They also noted that depression is more than 8 times as probable in youths with anxiety disorders than with youths without diagnosis. It has been documented that high rate for comorbid exists between depression and anxiety ranging from 15.9% to 61.9 % (Essau et al., 2000; Lin-Yan et al., 2006; Spence et al., 2003a).

### **1.9 Etiology**

In the past decades, several risk factors have been identified that are thought to play a role in the etiology of childhood anxiety disorders (Moretz & McKay, 2011; Muris et al., 2007). The primary explanatory models consists of genetic factors, temperament factors (behavioral inhibition) and psychosocial factors which include the environment and events taking place during children's developmental history. Parental attitudes and rearing behavior (McLeod, Wood, & Weisz, 2007; McLeod, Wood, & Avny, 2011), as well as experiences marking the course of a child's personal development (Jaffe, Belsky, Caspi,

Moffitt, & Harrington, 2006), may have an important influence on the onset of anxiety disorders, as well as learning experiences that shape a child's internal image of the physical and social environment, its potential threats, and how to cope with it (Hirshfeld-Becker et al., 2008; Moretz & McKay, 2011; McLeod & Wood, 2011; Rapee et al., 2009; Vasey & Dadds, 2001).

### ***1.9.1. Genetic, cognitive and brain factors***

First of all, behavioral- genetic research has shown that genetic vulnerability contributes significantly to the occurrence of anxiety disorders (Arnold & Tallefer, 2011; Hirshfeld-Becker et al., 2008; Hettema, Neale, Myers, Prescott, & Kendler, 2006; Angst et al., 2005), with some studies showing that up to 50% of the variance in anxiety problems can be explained by genetic variation (Gregory, Eley, & Plomin, 2004).

Twin and adoption studies have been fairly consistent in reporting that childhood anxiety is heritable, they also highlight that both shared and non-shared environmental factors play a role in the development of anxiety disorders in children (Gregory et al., 2004). Studies to identify specific genes in the development of anxiety led to focus on serotonin markers (sequences of DNA), given serotonin's role in influencing emotional states including anxiety. But child findings regarding serotonin transporter gene have been mixed, some found association between shyness and serotonin transporter gene (Battaglia, Ogliari, & Zanoni, 2005), others did not find any association between them (Laucht et al., 2009) or anxiety and depression. Similarly many genes (e.g. dopamine genes) of small effect size are likely to contribute in childhood anxiety (Gregory et al., 2004). Studies on the interactions between gene and environment demonstrated that children with the short serotonin transporter gene (5-HTT allele) and low social support had increased risk of behavioral inhibition in middle childhood (Fox et al., 2005). Also, genetic effects on

childhood separation anxiety and panic symptoms in adolescence increased with independent negative life events (Lau, Gregory, Goldwin, Pine, & Eley, 2007).

Research has identified various types of cognitive biases that are thought to play a role in the development and maintenance of childhood anxiety disorders. More precisely, there is clear evidence showing that anxious children typically display hyper-attention towards potentially threatening material (i.e., attentional bias) and more frequently interpret ambiguous stimuli and situations in a threatening way (i.e., interpretation bias; (Vasey & MacLeod, 2001).

Studies on attention to threat revealed that anxious children disproportionately direct attention to threat stimuli compared to nonclinical controls (Waters, Wharton, Zimmer-Gembeck, & Craske, 2008). Training attention toward threat increases anxiety over a laboratory in school-age children (Edlar, Ricon, & Bar-Haim, 2008), whereas other studies found that training attention away from threat reduces anxiety (Amir, Beard, Cobb, & Bomyea, 2009).

Neuro-imaging literature has shown that brief threat exposures produce amygdale engagement in anxious adolescents but not in healthy ones (Telzer et al., 2008; Monk et al., 2008). Further researches on overestimation and interpretation of threat shown that anxious children, compared with non-anxious peers, make more threat interpretations of homograph words (Taghavi et al., 2010) and interpret ambiguous or mildly aversive events as more dangerous (Waters et al., 2008). They also found that non-anxious children of anxious parents and children who were anxious themselves showed stronger negative emotion and poorer estimation of coping ability in response to ambiguous scenarios as compared to control sample. In relation to the studies on hypothalamus-pituitary-adrenal axis functioning, anxious girls with higher anxiety levels showed a lower morning rise in cortisol than anxious girls with lower self-reported anxiety levels, suggestive of hypo

instead of hypercortisolism (Gunnar & Vazquez, 2001).

### ***1.9.2 Temperament factors/Behavioral Inhibition***

The most widely researched temperamental characteristics linked to anxiety problem are behavioral inhibition. Behavioral inhibitions predispose children to greater sensitivity to stressors (Rapee et al., 2009; Merikangas, 2005; Winter & Bienvenu, 2011). Behavioral inhibition, popularly presented as BI, is defined as an overt representation of a psychological and physiological state of uncertainty that results from exposure to unfamiliar objects, people, and stressful situations. The tendency of these children is to interrupt ongoing behavior and to react with vocal restraint and withdrawal when confronted with strangers or unfamiliar setting. BI includes negative emotionality and motor reactivity to novelty in infancy and toddlerhood and extreme social withdrawal in pre-school and childhood (Fox, Russo, Bowles, & Dutton, 2001). Evidence coming from cross-sectional and prospective studies has shown that children who clearly display the signs of this temperament characteristic are at increased risk for developing anxiety disorders (Fox et al., 2005). Approximately 15% to 20% of community sample of children may display heightened BI, and about 50% of these children will continue to display concern across childhood (see Frenkel et al., 2015; Degnan, Almas, & Fox, 2010). Greater autonomic reactivity, elevated morning cortisol levels, heightened startle responses, and more cautious attention styles have been found in children with consistent BI (Perez-Edgar & Fox, 2005). Neuro-imaging studies reported those with BI displays elevated amygdale activation to novel, neutral or threat faces (Hirshfeld-Becker et al., et al., 2007). Thus, inhibited behaviors such as avoidance of novelty or threat, represent overt coping mechanisms by which amygdale activation and the resulting fear reactivity are decreased (Degnan et al., 2010). Cross-sectional and retrospective studies also support a link between childhood BI and increased risk of later anxiety disorders (Brakel, Muris, Bögels,

& Thomassen, 2006; McLeod et al., 2007; Hirshfeld-Becker et al., 2007). Again young children of parents with anxiety or mood disorders, especially the combination of panic and depression, are at risk for BI (e.g., Smoller et al., 2003). Although longitudinal studies supported that early BI is more specifically related to later social anxiety (Biederman et al., 2001), it also gave contradictory findings of 28% of the BI sample not showing any diagnosable anxiety disorder and 39% to 83% were not diagnosed with social anxiety disorder (Biederman et al., 2001). Therefore, it can be said that BI being a vulnerability marker consideration of interaction with innate biological process and environmental factors should be taken in the emergence of anxiety disorders (Degnan et al., 2010).

### ***1.9.3 Psychosocial factors***

Children's vulnerability to develop anxiety disorders involves psychosocial factors that include the environment and events taking place during children's developmental history. Parental attitudes and behavior such as overprotective parental rearing behaviors, an insecure attachment relationship (McLeod et al., 2007; McLeod et al., 2011), as well as events marking the course of a child's personal development (Rutter, Moffitt, & Caspi, 2006), may have an significant influence on the onset of anxiety disorders, as well as direct (i.e., conditioning) and indirect (i.e., modeling, negative information transmission) learning experiences that shape a child's internal representation of the physical and social environment, its potential threats, and how to cope with it (Hirshfeld-Becker et al., 2008; McKay & Storch, 2011; Vasey & Dadds, 2001).

### ***Attachment***

Bowlby's attachment theory hypothesized a child who has not had sensitive and responsive care, and is therefore uncertain about the accessibility of their parents when in need, is said to have an insecure or ambivalent attachment (Bowlby, 1973; Bowlby, 1987).

According to him children will exhibit attachment behavior when separated from the caregiver or the attached figure, and thus elicit protective behavior from their caregiver. Bowlby postulated an important interaction between the child and the caregiver: a caregiver that is responsive and sensitive to the child's needs leads to a feeling of security in the child. These children are called securely attached children. Insecurely attached children do not experience responsiveness and sensitivity from their caregiver, and do not trust that a caretaker will protect them. They may experience chronic vigilance and anxiety, which may set the stage for the development of an anxiety disorder. Famous study of Ainsworth, Blehar, Waters, & Wall (2015), the Strange Situation contributed to the classification of different types of attachment style. These understanding of attachment issues provide a framework for conceptualizing the influence of interpersonal relationships on the development and course of childhood anxiety.

Not much empirical research has been found on the relationship between parental attachment and anxiety in children and adolescents. Some studies reported the connection between parental attachment and anxiety symptoms in children, primary school children who classified themselves as ambivalently attached reported higher levels of worry (Hale, Engels, & Meeus, 2006). Studies demonstrated that attachment style predicts later psychopathology (Mason, Platts, & Tyson, 2005). Child insecure attachment has been found to be a risk factor for the development of anxiety disorders in children (Warren et al., 1997).

Attachment theory envisioned that insecure attachments convey the message to the children that caregivers are not reliable, available, trustworthy and communicative. Children receiving these types of messages may develop a maladaptive approach to future interpersonal relationships believing that their needs will not be met by others. This causes either low interpersonal contact and avoidance behaviors or high interpersonal contact and

demanding behaviors. Unfortunately, these behaviors draw negative reactions from others which serve to maintain and strengthen the distorted beliefs that these insecure children have. This deformed view can be expressed in maladaptive forms of coping and avoidance behaviors which in turn creates a chronic and persistent state of anxiety within children. In this way children put themselves in a higher risk of developing anxiety disorders. Studies showed that insecure attachment independently and uniquely predicted child anxiety as reported by parents and children (Muris & Meesters, 2002).

Interestingly a meta-analysis found that parenting accounted for as little as 4% of the variance in child anxiety (McLeod et al., 2007). McLeod et al. argued that peer relationships and stressful life events might have a considerable role in childhood anxiety. Given that childhood anxiety is associated with social withdrawal and interference to friendships (Verduin & Kendall, 2008), future investigation into the role of peers in the development of child anxiety is warrant.

### ***Parental rearing style***

How parents rear up their children have a connection with the development of anxiety in their children. There is evidence that particular cognitive, affective, and behavioral features of parent-child interactions retain children's anxiety problems (e.g., Creswell, Murray, Stacey, & Cooper, 2011). Parents of anxious children expect that their children's responses will be characterized by threat interpretation, negative emotions, and low control, compared with parents of non-anxious children (e.g.,(Creswell, Schniering, & Rapee, 2005; Micco & Ehrenreich, 2008). Also they view themselves as having less control over their children's responses (Wheatcroft & Creswell, 2007). This negative cognition style is assumed to motivate parental emotions and behaviors that promote child anxiety by increasing parental expressed anxiety and transference of threat-related information to the child, and limiting child autonomy (Creswell et al., 2011; Hudson &



Rapee, 2004; Lester et al., 2009). Empirical research has supported this explanation, they found parental expression, transfer of fear-relevant information, and lack of parental autonomy are features of parents of anxious, compared with non-anxious children (e.g., McLeod et al., 2007). Moreover, experimental and longitudinal studies have shown the role of each of these dimensions in the maintenance of childhood anxiety (de Rosnay, Cooper, Tsigaras, & Murray, 2006; Murray, Creswell, & Cooper, 2009; Thirlwall & Creswell, 2010). From meta-analysis of the anxiety and parenting literature, four main parenting behaviors were identified which are associated with the development of anxiety (Wood, McLeod, Sigman, Hwang, & Chu, 2003). These are a) psychological control, b) over protectiveness, c) rejection-criticism, and d) modeling/reinforcing anxious or avoidant behaviors. Research on these parental behaviors has shown some interesting outcomes. It was found that both anxious mothers and mothers of anxious children displayed these parenting features during their interactions with their children. On the other hand, non-anxious mothers or mothers of non-anxious children did not exhibit these features (Whaley, Pinto, & Sigman, 1999).

These parental rearing behaviors are detailed out for better understanding on the development of anxiety in children.

*Psychological control* is defined as intrusive behaviors that inhibit psychological autonomy allowing, induce guilt, infuse anxiety, and withdraw love (Pettit, Laird, Dodge, Bates, & Criss, 2001). Studies investigating children's reports of psychological control have found significant associations between perceived parental psychological control and anxiety in both children and adolescents (Costa, 2004). It was found that anxious mothers were more psychologically controlling but anxious mothers with anxious children were the most controlling of all (Whaley et al., 1999).

*Parental over protection* consists of those parental behaviors that are overly

restrictive and protective of a child's behavior and activities, resulting in less autonomy in the child. Mothers with anxious children revealed higher levels of oppressing and over protective parenting behaviors (Hudson & Rapee, 2004). Perceived ratings of behavioral control by children and adolescents have shown to be related to high levels of anxiety (Costa, Weems, Pellerin, & Dalton, 2006; Ollendick & Horsch, 2007). Other studies demonstrated that anxious mothers with anxious children exhibited the highest level of maternal behavioral control as compared with anxious mothers with non-anxious children or control mothers and children (Whaley et al., 1999; Moore, Whaley, & Sigman, 2004).

*Rejection-criticism* is portrayed by disapproving, judgmental, and indifferent parenting behaviors. It has been hypothesized children's emotional regulation cannot be promoted by the parents who criticize and minimize their children's feelings (Wood et al., 2003). Criticism and rejection do not allow children the opportunity to learn through trial and error, how to deal and tolerate negative emotions thus increasing children's sensitivity to anxiety. Studies showed that higher rates of anxiety in children are related to higher rates of criticism and rejection from the parents (Weems, Hammond-Laurence, Silverman, & Ginsburg, 1998). Furthermore, anxious mothers has displayed that they exhibit less warmth and positivity than control mothers who do not have anxious children (Whaley et al., 1999).

Through *modeling and reinforcing anxious or avoidant behaviors* parent can increase the risk of children developing anxiety disorders, as pointed out in the social learning theory. Children usually take parents as their model in learning behaviors to cope with the environment. When parents exhibit avoidance and anxious behaviors themselves in front of the children, modeling of anxiety occurs. Moreover, maintenance of children's fear and avoidance behavior persists because they have limited opportunity to habituate to feared fear and anxiety provoking stimuli since their parents frequently fear the same

stimuli and shield their children from them. In the same way reinforcement of anxiety occurs when parents keep on paying attention to, agreeing with, tolerating, and reciprocating avoidant behaviors demonstrated by their children. Studies found that child anxiety may aggravate distress in parents, who then adjust demands, expectations, and parenting style, thus negatively reinforcing children's anxiety (Kendall & Ollendick, 2004). Parent's continual support and encouragement to the child to avoid and escape from the situations the child fears actually reinforces the fear. Thus the reduction in anxiety that occurs on escaping the fear provoking situation powerfully reinforces the avoidance behavior. The opposite perspective of having the child face the anxiety provoking situation will introduce anxiety in the short term surely but on the long term, it is likely to reduce anxiety by allowing the child to be exposed to the situation. This reduction in anxiety due to exposure is thought to be an outcome of realizing that the fear or the cognitive error associated with that fear is unjustified.

Research examining parent-child interactions has identified high parental over control and overprotection and less granting of autonomy, as well as low maternal warmth and parental rejection (Rapee et al., 2009). Presence of child anxiety, but not maternal anxiety, was connected to less granting of autonomy and lower warmth (Moore et al., 2004). These studies highlight the reciprocal interaction between child and parent in the development of anxiety (Rapee et al., 2009).

### ***Family environment***

Different familial issues contribute in the development of anxiety in children. Among them poor cohesion, parental conflict, and heightened family stress are associated with increased risk of anxiety (Rapee et al., 2009). The same study found anxious children are more likely to describe their family as less promoting of independence and opportunities for personal control, less sociable, less supportive, and more conflicting and

achievement oriented. Similarly, it has been found that the families of children at risk of developing an anxiety disorder are characterized by these processes (Craske & Waters, 2005). Longitudinal studies indicated that negative family environments envisage higher anxiety even 6 years later (DeVore & Ginsburg, 2005; Ginsburg, 2009a)

### ***Peer relationship***

Peer relationship is closely related with two other factors discussed before, parent-child attachment and temperament. The ability to form and maintain peer relationships is viewed as an important interpersonal process associated with the anxiety disorders. Two characteristics of the children are to be considered. The first characteristic is the view children have about future interpersonal relationships, which is based mostly on the parent-child attachment relationship (McDowell & Parke, 2009). The second characteristic is the child's temperament and how it brings out certain behaviors from others. Both the parent-child attachment relationship and the child's temperament, especially behavioral inhibition, directly and indirectly affect the development of peer relationships (Ollendick & Hirshfeld-Becker, 2002) and succeeding anxiety disorders.

The best possible outcome in forming good peer relationships is for children to feel that they are accepted and valued by their peers. When the opposite happens, i.e. children are rejected by their peers, anxiety may develop. Rubin, Bukowski, & Parker (2007) described the pathway in a coherent way. Starting with the child's behavioral inhibition, the pathway to social suspicion, withdrawal, and rejection open ups. Parents may have the tendency to become insensitive and unresponsive when dealing with behaviorally inhibited children. High frequency of these behaviors of their children and their failed attempts to sooth or comfort their children turn the parents to become insensitive towards their behaviorally inhibited children. Consequently, the interaction of the child's behaviors and the parent's behaviors toward the child result in solidification of an insecure parent-

child attachment. It is thought to be this sequence of events that obstructs a child's ability to form subsequent good peer relationships.

On the other side, insecurely attached children are thought to be fearful of rejection; therefore, these children in anticipation of avoiding rejection withdraw from their peers. Thus social withdrawal, results in children not being able to establish normal social relationships. Hence, decreases the chances of being exposed to normative social behaviors (Rubin, 1998). This results in children having increased anxiety when placed in situations with peers which then results in higher levels of withdrawal in these situations. As children progress through middle childhood, their withdrawal behaviors become increasingly recognized by peer groups which then serves to increase anxiety in the already anxious and withdrawn child (Verduin & Kendall, 2008). Thus the ability to form good peer relationships can have a striking effect on the development of anxiety in middle childhood.

### ***Parental psychopathology***

It is obvious from the above discussion that parent's psychopathology have a detrimental effect on their offspring's mental health. Studies reported that a moderate to strong relationship between anxiety in children and psychopathology in their parents, mainly depression and anxiety disorders (Muris, Steerneman, Merckelbach, & Meesters, 1996). There are many studies which presented that the children of the depressed or anxious parents are at risk for developing anxiety or depression (Pilowsky, Wickramaratne, Nomura, & Weissman, 2006; Merikangas, Avenevoli, Dierker, & Grillon, 1999). This is even strong for children whose both parents are suffering from a disorder.

Parental psychopathology is linked to child rearing practices also. In a study it was found that anxious mothers were less warm and less positive, permit less autonomy to

their children than control mothers (Whaley et al., 1999). This particular behavior of mothers was found to be more predictive of childhood anxiety than maternal psychopathology. Contrary, a study on the high risk children of anxiety disordered parents it was found that family environment and parenting did not differ between children of high risk and normal controls (Merikangas et al., 1999).

### ***Anxiety sensitivity***

Anxiety sensitivity is the fear of anxiety-related physical sensations, which is thought to arise from the beliefs that these sensations have harmful somatic, social, or psychological consequences, as described in the expectancy theory of Reiss and McNally. Anxiety sensitivity is a risk factor that has been regularly documented (Hirshfeld-Becker et al., 2008; Merikangas, 2005). Undeniably, anxiety sensitivity is a significant predictor of the incidence of an anxiety disorder years later, even after controlling for gender and negative affectivity (Schmidt, Mitchell, & Richey, 2008). Anxiety sensitivity represents a risk factor that can change after a therapeutic intervention (Smits, Berry, Tart, & Powers, 2008) and should be measured when testing the outcomes of a prevention program.

Researchers spotlighting on anxiety disorders (e.g., Winter & Bienvenu, 2011; Vasey & Dadds, 2001), as well as those in the field of temperament (e.g., Winter & Bienvenu, 2011) or development (e.g., Rutter et al., 2006), all insist on the complex interaction and goodness-of-fit among environmental, psychological and biological characteristics. The highest risk situation is for children who have a genetic predisposition, grows up in a predisposing environment and also develop a cognitive frame of mind supporting perceived threat and poor coping abilities (Hirshfeld-Becker et al., 2008; Moretz & McKay, 2011; Rapee et al., 2009; McKay & Storch, 2011).

It is clear that an ‘‘understanding of the pathways by which childhood anxiety

disorders develop, persist and remit is likely to require consideration of a wide range of influences and, most importantly, their potential for complex, dynamic, transformational interactions (i.e., transactions) across development'' (Vasey & Dadds, 2001, p. 3). More longitudinal studies are pressing needed that include multiple vulnerability (as well as protective) factors to further expand our knowledge on the etiology of this highly prevalent type of psychopathology.

### **1.10 Theoretical Foundation**

Beck's Cognitive Therapy is the most evidence-based, influential and widely used cognitive approach and more highly structured than many other therapeutic methods (see Hankin, Abramson, Miller, & Haeffel, 2004 for reviews). The cognitive model of anxiety has been refined and verified for each of the various anxiety disorders and outcome studies have demonstrated the efficacy of cognitive behavior therapy for anxiety disorders (Beck, 2010; Clark & Beck, 2010).

Beck's cognitive theory consists of four different cognitive constructs: schemata, cognitive errors, cognitive triad, and automatic thoughts (Beck, 1979 ; Clark, Beck, & Alford, 1999; Beck & Dozois, 2011). A schema is a hypothetical cognitive structure which acts as a filter on incoming information. Schemata are relatively enduring, organizing structures that guide situational information processing. Self-schemas are general core assumptions or beliefs that people hold about themselves and the world. People can have adaptive and healthy schemata or maladaptive and unhealthy schemata, which tend to be negative, rigid and inflexible. In anxiety stricken people schemata are negative in content and consist of immature, absolute, and rigid attitudes about the self and its relation to the world. When activated by stress and anxiety, these schemata lead to cognitive errors. Cognitive errors cause our perception and thinking to be unrealistic, extreme, and distorted in a negative way. As a result, the content of cognitions is dominated by a negative view

of the self, the world, and the future - the so-called cognitive triad. According to Beck (1979), this negative and anxious style of thinking finds its expression in negative automatic thoughts. Automatic thoughts are understood as temporary, non-emotional mental events, which are subjectively plausible in a certain situation (Beck, 1976). These automatic thoughts are not the result of forethought or reasoning. Rather these thoughts seem to spring up spontaneously; they are often quite rapid and brief.

In Beck's (1976) traditional model, each cognitive construct mediates the relationship between its preceding and subsequent construct.

According to the theory that upholds Beck's cognitive approach to therapy for anxiety disorders, anxiety occurs when life events involving threat reactivate threat-oriented cognitive schemas formed early in childhood during a threatening and stressful experience (Beck, Emery, & Greenberg, 2005). These threat oriented schemas contain assumptions about the dangerous nature of the environment or the person's health. For example: 'The world is dangerous, so I must continually be on guard'. They also entail cognitive distortions such as under rating safety-related events and magnifying threat-related negative events. His cognitive model relates thoughts to emotion and behavior and proposes that it is not just people's situations and experiences which make them depressed or anxious, but rather their own internal schemata and how they process experience.

In the cognitive model of anxiety, one's experience is governed by the expectation and interpretation of events, and not simply the events themselves. Cognition does not operate alone. It functions working together with other systems such as, affective, behavioral, and physiological. Dominance is pointed to the role of cognition because the cognitive system is responsible for integrating input, selecting an appropriate plan, and



activating the other subsystems (Beck et al., 2005). In the cognitive model, anxiety disorders result from a constant inclination to overestimate the likelihood of threat. For example, the person who fears elevators greatly overestimates the chance of being stuck in one. These miscalculations of threat result in increased levels of anxiety, triggering a set of responses aimed to protect the individual from harm. These responses include changes in autonomic arousal (fight or flight), inhibition of ongoing behavior, and selectively scanning the environment for possible sources of hazard. Moreover, the autonomic arousal increases heart rate and provides evidence to the initial fear. In addition to inappropriate reactions to new situations, the anxious individual remains equipped for defensive action long after the situation has passed.

The cognitive model proposes that dysfunctional thinking (which influences the patient's mood and behavior) is common to all psychological disturbances (see Beck 2011). Dysfunctional assumptions make people prone to interpret situations in a maladaptive manner. For example, the adolescent who holds the belief that “everyone must like me” has tied his or her self-worth to social approval. As a result of this schema, the individual has heightened his or her anxiety about all social contacts. There is likely a decrease in comfort and competency in social situations as well. Negative automatic thoughts function in the same manner but refer to certain thoughts and images that arise in a specific situation. For example, a child concerned about social evaluation may, during a lull in conversation, have a negative automatic thought, “This group thinks I’m boring.” The way people feel emotionally and the way they behave are associated with how they interpret and think about a situation. The situation itself does not directly determine how they feel or what they do; their emotional response is mediated by their perception of the situation.

Cognitive therapy aims at identifying and restructuring such maladaptive thought patterns and offering the client alternative assumptions about the self, the world, and the future, replacing negative thoughts with more constructive thoughts or thought patterns (Clark et al., 1999). For lasting improvement in patients' mood and behavior, cognitive therapists work at a deeper level of cognition: patient's basic beliefs about themselves, their world, and other people. Modification of their underlying dysfunctional beliefs produces more enduring change. When people learn to evaluate their thinking in a more realistic and adaptive way, they experience improvement in their emotional state and their behavior. Dysfunctional beliefs can be unlearned and more reality-based and functional new beliefs can be developed and strengthened. Identifying, evaluating and responding to automatic thoughts (in a more adaptive way) usually produce a positive shift in affect.

Interventions generally follow a specific formulation of assessment, goal setting, attempting specific strategies and then measuring success based on valid and reliable clinical measures. Long lasting change comes from modifying a person's dysfunctional schemata and beliefs (cognitive restructuring). Some of the specific strategies used to bring about cognitive restructuring include Socratic questioning, considering alternative perspectives, completing automatic thought forms, reality testing and cognitive rehearsal. Client self-efficacy is one of the most important aims of treatments. Self help exercises and therapeutic homework are commonly given and there is an emphasis on psycho-education.

According to Salkovskis (1997) anxious patients fail to update old perspectives because, even if they expose themselves to feared situations, they take unnecessary precautions (safety-seeking behaviors, often called "safety behaviors") to prevent bad things from happening, and so never have the opportunity to discover that their expectations are incorrect. With this understanding, the therapist is able to encourage

patients to test predictions by dropping safety behaviors and observing and reflecting on the results. Thus, behavioral experiments lay the way for improvement in belief change and associated shifts in emotions (Bennett-Levy et al., 2004; Salkovskis et al., 2007).

Interventions for anxiety disorders include dropping safety-seeking behaviors, decreasing avoidance, carrying out behavioral experiments, redirecting attention, challenging negative cognitions, cutting out ponderings and worry, and reflecting on input from memory in the form of images and memories. Various studies identified quite a number of dysfunctional cognitive and behavioral processes which are involved in anxiety disorders (Harvey, Watkins, & Mansell, 2004; Clark & Beck, 2010, pp 63; Butler, Fennell, & Hackmann, 2010). Examples are-

*Controlled or automatic selective attention:* These are directed toward concern-related internal or external stimuli, including sources of safety.

*Explicit and implicit selective memory:* It includes recurrent memory, over-general memory, avoidant encoding and retrieval, working memory, and memory distrust.

*Reasoning processes:* It includes interpretation, expectancy, and emotional reasoning. Many of these reasoning processes plot on to the classic “cognitive distortions” or logical errors described in cognitive therapy, such as personalization, all-or-nothing thinking, mind reading, fortune telling, and soon.

*Recurrent thinking:* It includes rumination and worry, and associated positive and negative meta-cognitive beliefs (beliefs about worry and other mental events and processes).

*Avoidance and safety-seeking behaviors:* This process is designed to prevent danger and reduce threat, but unfortunately nourishing into anxiety, and

leaving negative beliefs untested.

Individual or group cognitive therapy aims to help clients to challenge their assumptions about the dangerousness of the situations in which they feel anxiety. This involves them learning how to monitor their cognitions and anxiety levels and to test-out their cognitions by collecting information and engaging in experiences that allow the validity of their assumptions to be checked. Beck's theory is supported by evidence which shows that anxiety is associated with a threat-sensitive cognitive style and also by the results of treatment outcome studies with adults and children which support the efficacy of cognitive-behavioral approaches to treatment (Stallard, 2014; Friedberg, McClure, & Garcia, 2014).

## **Part 2**

### **1.11: Measurement of Childhood Anxiety**

Research on the measurement of childhood anxiety disorders is relatively sparse (Muris & Broeren, 2009). However, a number of questionnaires and interview tools have become accessible in the past decade that categorize and measure symptoms of anxiety disorders in terms of the prevailing diagnostic system, i.e., the DSM (Silverman & Ollendick, 2005). The diagnostic assessment for anxiety requires a multi-dimensional approach, which means it needs to be multi-method and multi-informant (i.e. the collection of data from more than one source and in a variety of modalities) (Kraemer et al., 2003). A satisfactory diagnostic process should be able to provide valid and reliable anxiety symptoms detection and discrimination, evaluate severity, incorporate information from multiple informants, and to be able to measure the degree of therapeutic change.

Nowadays different methods are used to measure anxiety of the children. These are interviews, parent report and teacher report, self-report, physiological measures,

behavioral measures etc.

### ***1.11.1 Diagnostic interview***

In general, the most widely used method for assessing childhood disorders, especially anxiety disorders is interview. Interviews could be structured, unstructured or semi-structured. It is best to use available structured or semi-structured interviews because of lack of objectivity and poor reliability of the unstructured interview. These interviews permits the clinician to measure the types of anxiety that are present, the severity of anxiety symptoms and the functional impairment that these anxieties may cause (McLoone, Hudson, & Rapee, 2004). Interview allows the clinician to explore the child's personal experience of anxiety and fear to a greater degree so that the clinician is able to decide whether or not the presenting symptoms actually represent a disorder. Generally, the components that are covered in an interview are- history of symptoms (i.e. onset of symptoms, presence of avoidant behavior etc.); developmental history of the child (i.e. temperament, adaptability etc.); medical and psychiatric history (i.e. number of medical visits for the symptoms, under medication or not); School history (i.e. academic, behavioral and social functioning etc.); family history (i.e. stressors, resources, coping style, history of loss, death, history of psychiatry in family etc.). Two common clinical interviews are described below.

The *Anxiety Disorders Interview Schedule for DSM-IV: Child version* (Silverman & Albano, 1996) and Parent version are considered as gold standard. This semi-structured interview has been developed specifically to assess child and adolescent anxiety disorders as well as a number of frequent comorbid disorders (e.g., conduct disorder, mood disorders, oppositional disorder).

The *Diagnostic Interview Schedule for Children-Revised* (DISC-R; Schwab-stone et al., 1993) is a highly structured interview form used to elicit diagnostic criteria for the common psychiatric disorders of childhood and adolescence. It contains both child and parent versions. The following diagnostic categories are addressed: attention deficit hyperactivity disorder, oppositional defiant disorder, conduct disorder, major depressive disorder, dysthymia, simple phobia, separation anxiety, social phobia, generalized anxiety disorder, agoraphobia/panic disorder, and obsessive compulsive disorder.

### ***1.11.2 Parent and teacher rating scales***

In order to assess a child's anxiety symptoms and level of distress, perspective of caregivers and teachers regarding the child's anxiety can be gathered. Adults such as parents and teachers has had broad experience regarding the child's behavior, feelings and cognitions, therefore they are a valuable source of information. However, the interpretation of these adult measures on the child's internal world requires some caution. Non-concordance exists among the parent, teacher and child's report. Parents may not be fully aware of the extent of the child's anxiety, as observable behavior may occur outside of the parent's visibility, such as at school, or when interacting with peers (Comer & Kendall, 2013). Again teacher's rating can also be discrepant from parent or child self reporting, usually teachers report fewer internalizing symptoms than young children and their parents. Generally widely used parent rating scales are- *Child Anxiety Impact scale: Parent version* (CAIS-P; Langley et al., 2014); the *Behavior Assessment Scale for Children-2<sup>nd</sup> edition* (BASC-2; (Reynolds & Kamphaus, 2004) the *Child Behavior Checklist* (CBCL; (Achenbach & Rescorla, 2007); the *Spence Children's Anxiety Scale-Parent version* (SCAS-P; Spence 1999) and *Teacher Report Form* (TRF; Achenbach & Rescorla, 2001. Majority of the scales have both the parent and child versions.

### ***1.11.3 Child self report questionnaires***

As anxiety is an internalizing disorder, self report measures can be a cost-effective, quick and easy to administer instruments for measuring anxiety. It allows the child to endorse anxiety symptoms quickly and discretely with less concern about another person's immediate judgment (Mychailyszyn et al., 2011a). It has been shown that children's understanding of language influence their responses to a self report measure of worry (Campbell, Rapee, & Spence, 2000). Nonetheless self report provides information on the nature and severity of anxiety related symptoms. Such information is important not only for the diagnostic process but also to identify relevant symptomatology and degree of severity for the individual child (March & Albano, 1998). To administer self report questionnaires, nearly no training is required on the part of the clinician, because most are published with clear scoring codes, instruction guidelines for interpretation and age normative data. Usually, a well constructed self report measure is able to accurately estimate the severity of the child's symptoms, discriminating distinctly between clinical and non-clinical children with anxiety (McLoone et al., 2004).

Considering the time period of the development of the scales, the older self report measures like, *Fear Survey Schedule for Children - Revised* (FSSC-R; (Ollendick, 1983), *Revised Children's Manifest Anxiety Scale* (RCMAS; Reynolds & Richmond, 1978), *State-trait Inventory for Children* (STAIC; Spielberger & Edwards, 1973) were designed to assess childhood anxiety or fear in general. Newer measures are based on DSM classifications and subscales include items on symptoms of specific anxiety disorders. These newer questionnaires were developed separately in the late 1990s, and are quite similar to earlier questionnaires. Good examples are the *Spence Children's Anxiety Scale* (SCAS; Spence 1998) and the *Screen for Child Anxiety Related Emotional Disorders* (Birmaher et al., 1999), which can be used to measure anxiety disorders symptoms from the child's and

parents' point-of-view, also the *Multidimensional Anxiety Scale for Children* (March, Parker, Sullivan, Stallings, & Conners, 1997), the *Revised Child Anxiety and Depression Scales* (RCADS; Chorpita, Yim, Moffitt, Umemoto, & Francis, 2000), the *Child and Adolescent Anxiety Scale* (CAWS; Campbell & Rapee, 1994) and the *Pediatric Anxiety Rating Scale* (The research units on pediatric psychopharmacology anxiety study group, 2002), which is a clinician rating scale. The structure and content vary considerably across measures. There are also several measures that assess a particular/specific type of anxiety, for example the *Social Anxiety Scale for Children—Revised* (Greca & Stone, 1993) and the *Social Phobia and Anxiety Inventory for Children* (Beidel, Turner, & Morris, 1995). Table 1.1 describes the self report measures of anxiety in children.



Table 1.1: *Properties of Self Report Measures of Anxiety in Children*

Measure	Reference	Subscales	Age Range	Primary Focus	Structure
Revised Children's Manifest Anxiety Scale (RCMS-2)	Reynolds & Richmond 1997	Physiological anxiety worry/oversensitivity social concerns/concentration	8-19	Chronic anxiety	17 yes/no item
State-Trait Anxiety Inventory for Children (STAIC)	Spielberger 1973	A-Trait A-State	9-12	Chronic anxiety	20 items on a 3 point scale
Fear Survey Schedule for Children Revised (FSSC-R)	Ollendick 1983	Specific fears in several areas: school, home, social, physical, animal, travel, classic phobia, miscellaneous	7-18	Specific fears	80 items on 3 points scale
Social Phobia and Anxiety Inventory for Children (SPAI-C)	Beidel, Turner & Morris 1995	Assertiveness, traditional social encounters, public performance	8-17	Social anxiety	26 items on a 3 points scale
Spence Children's Anxiety Scale (SCAS)	Spence 1998	Separation anxiety. Social phobia, obsessive compulsive disorder, panic agoraphobia, generalized anxiety, fears of physical injury	8-12	Specific symptoms	44 items on a 4 point scale
Multidimensional Anxiety Scale for Children (MASC)	March et al. 1998	Physical symptom, social anxiety, harm avoidance, separation anxiety	8-16	Specific symptoms	39 items on a 4 point scale
Screen for Child Anxiety Related Emotional Disorders (SCARED)	Birmaher et. Al. 1999	Somatic/panic, general anxiety, separation anxiety, social phobia, school phobia	9-18	Specific symptoms	41 items on a 3 point scale
Child and Adolescents Worry Scale (CAWS)	Campbell & Rapee 1994	Physical threat (worries related to death, pain and physical injury) and social threat (social embarrassment, loneliness and perfectionism)	5-16	Specific symptoms	20 items on a 3 point scale

#### ***1.11.4 Behavioral measures***

As an alternative to structured interviews and self-report measures, there are several forms of behavioral assessment of anxiety in children. These can be helpful for younger children who may have difficulty reporting their worries and anxieties due to their limited insight or lack of language development. Behavioral measures provide information on the overt aspects of anxiety such as visible distress, crying, tantrums, clinging, facial expression, posture, and active avoidance. Behavioral measures include direct observation and behavioral avoidance tests.

*Direct observation* provides useful information about a child's anxiety. Parents and teachers spent a meaningful amount of time with the anxious child in various contexts therefore their observation of the child's overt signs of anxiety is crucial in assessing the child's anxiety. One limitation is that observer's biasness and/or lack of training regarding anxiety may influence their observation. However, observation done by the clinician is more dependable. The clinician observes the child and the family interacting in natural setting during the interview. Behavioral aspects, such as the child's social skills and reactions to unfamiliar situations are noted by the clinician. Another type of behavioral measure is *behavioral avoidance tests*. It includes exposing the anxious child to his/her feared stimuli under controlled conditions and recording information about how they react. This measure were used back in 1960s and 1970s, nowadays they are used rarely.

To have adequate tools for evaluating symptoms of anxiety disorders is highly important and needed for both clinical and research purposes.

The gold standard of assessment is a multi-method, multi-informant approach (i.e., the collection of information from a variety of individuals and in a variety of modalities) (Headley & Campbell, 2013). This approach permits a thorough evaluation of presenting symptoms and resulting impairment (e.g., Mychailyszyn et al., 2011a). In order to achieve

these goals adaptation of the validated scales for use in Bangladesh are of crucial importance. The following discussion focuses on the topic of adaptation.

### **1.12 Adaptation**

There is a great need for cross-culturally validated research instruments because of the variety of the population worldwide. Researchers and clinicians need access to reliable and valid measures of concepts of interest in their own cultures and languages. The process of adapting an existing well validated instrument, rather than developing a new one has considerable advantages. Developing a new instrument/scale is time-consuming and costly. This supports the adaptation of an existing psychometrically sound measure. Adaptation also allows a researcher to compare data from different samples and from different backgrounds, which enables greater fairness in the evaluation because the same instrument assesses the construct based on the same theoretical and methodological perspectives. The use of adapted instruments obviously enables a greater capability to generalize and also permits one to explore differences within an increasingly diverse population (Hambleton, Merenda, & Spielberger, 2004).

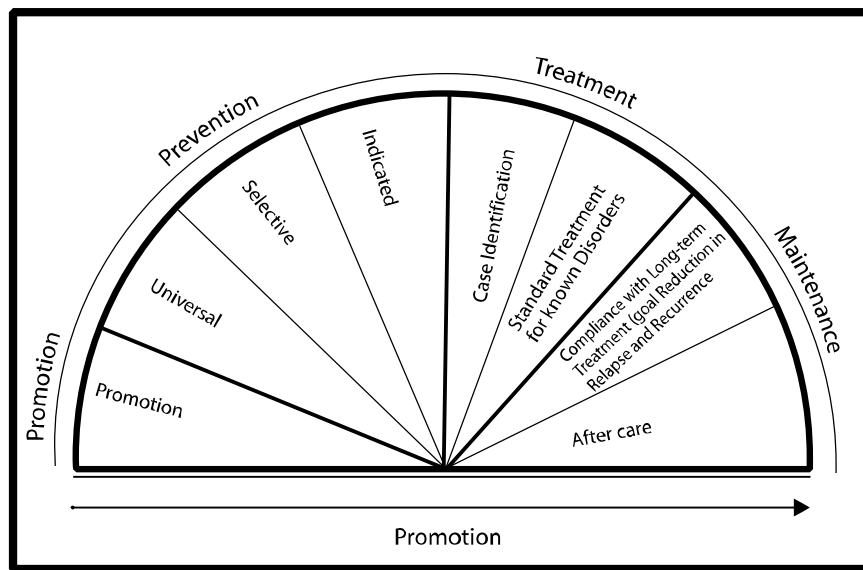
In recent years, a growing interest in cross-cultural studies in psychology has been observed, which have demanded greater concern about the quality and suitability of adapted and validated instruments for use in different contexts (ITC, 2010). Translation, adaptation and validation of an instrument or scale for cross-cultural research is time-consuming and requires careful planning and adoption of rigorous methodological approaches to derive a reliable and valid measure of the concept of interest in the target population. There are a number of guidelines describing the steps of adapting a scale. Except some minor variations, they advocate similar procedures that one can follow to ensure sound psychometric properties, and cultural and conceptual equivalence of adapted

scales (Beaton, Bombardier, Guillemin, & Ferraz, 2000; Sousa & Rojjanasrirat, 2011; ITC, 2010).

### Part 3

#### 1.13: Intervention

Early intervention against childhood anxiety disorders is critically important for improving the current functioning and protecting the long-term health of children. Mrazek & Haggerty, (1994) illustrated the mental health intervention spectrum for mental disorders which classifies intervention approaches into three areas- prevention, treatment and maintenance.



*Figure 1.1: The mental health intervention spectrum for mental disorders (Mrazek & Haggerty, 1994).*

Prevention is sub-classified as universal and selective. Treatment includes case identification (e.g., assessments) and standard treatments for known disorders (e.g., medication, psychological intervention). Maintenance is comprised of compliance with

long term treatment to reduce relapse and recurrence, and after care (including rehabilitation).

### **1.14 Prevention**

Similar to Mrazek and Haggerty, the committee on Prevention of Mental Health Disorders under the umbrella of Institute of Medicine (IOM) distinguished between prevention and treatment, and proposed three levels of preventive intervention as defined by the degree of risk in the participant population (Institute of Medicine (U.S.), O’Connell, Boat, Warner, & National Research Council (U.S.), 2009). These are:

#### *Universal Preventive Interventions:*

These interventions are targeted for the whole population group that has not been identified on the basis of individual risk of mental disorders.

#### *Selective Preventive Interventions:*

The interventions are aimed at individuals or subgroups of the population whose risk of developing psychopathology is significantly higher than the average. The risk may be impending or it could be a lifetime risk.

#### *Indicated Preventive Interventions:*

These interventions are aimed at individuals known to be at high risk because they have early detectable symptoms of mental disorders, but do not meet DSM criteria at the current moment.

Many programs have been developed to treat anxiety disorders using the strategies of cognitive behavior therapy (CBT), interpersonal therapy, and psycho-education (Shortt, Barrett, & Fox, 2001; see McKay & Storch, 2011 for examples). These intervention

programs for prevention suits better with secondary prevention or targeted programs than primary prevention and such programs do not target the management of risk and protective factors for children who are currently not at risk (Neil & Christensen, 2009). Primary prevention focuses on reducing the risk of developing a mental health disorder, while secondary prevention aims specifically at people at risk of developing a disorder or already exhibiting some mild symptoms (Mrazek & Hagerty, 1994). Universal programs are applied to all individuals without targeting those at risk. These programs are expected to be vigorously pursued as the ideal mode of preventive intervention because they constitute an inclusive and non-stigmatising approach (McLoone, Hudson, & Rapee, 2006; Nehmy, 2010).

Cognitive behavioral therapy (CBT) programs are considered as the most published evidenced-based prevention programs for anxiety disordered children (James, James, Chowdrey, Soler, & Choke, 2015). Four specific cognitive and behavioral factors appear to be common to all anxiety disorders (Chorpita & Barlow, 1998; Morris & March, 2004; Pilecki & McKay, 2011; Vasey & Dadds, 2001) (a) the belief that unmanageable situations are threatening, (b) the belief that the unknown is threatening, (c) perceived self-efficacy to cope with and solve personal problems, and (d) avoidance of feared situations (Vreeke, Muris, Mayer, & Rapee, 2013). In primary prevention programs these are recommended to be addressed. The combination of biological vulnerability with non-specific environmental influences could lead to the emergence of these factors, thus creating conditions that are favorable for the development of an anxiety disorder by facilitating perceived threat and dependence on avoidance. Therefore, building coping abilities and perceived self-efficacy to cope with stressors become protective factors against the development of an anxiety disorder. CBT-based prevention programs usually involve a few core elements: (a) psycho-education, emotional identification and

management, (c) detection of cognitions in anxiety-inducing situations, challenging the anxiety-increasing self-talk, exposure, (f) self-reinforcement, and (g) relapse prevention (Richardson, Stallard, & Velleman, 2010).

A large proportion of children experience subclinical levels of anxiety and CBT aimed at preventing anxiety disorders is moderately effective (Schoneveld, Lichtwarck-Aschoff, & Granic, 2018). They conducted a study to investigate whether the applied game (e.i., *MindLight*) is as effective as CBT (i.e., *Coping Cat*) within an indicated prevention context. Anxiety was assessed with self- and parent-reports at pre- and post-program, and at 3- and 6-month follow-ups. They found the magnitude of improvement was the same for *MindLight* and CBT. Moreover, CBT was rated as more relevant to daily life than *MindLight*.

In order to evaluate the effectiveness of a Dutch version of evidenced based CBT program *Coping Cat* as an indicative group-based prevention program a Randomized Controlled Trial (RCT) was conducted with primary school children with elevated levels of anxiety. The RCT had two conditions: Experimental (*Coping Cat*) and control (no program) group. Pre and post tests were administered to test the efficacy of the program. Results indicate that children in experimental group had reduced level of anxiety in post test compared to control group (van Starrenburg, Kuijpers, Hutschemaekers, & Engels, 2013).

A study was conducted to evaluate a parent–child cognitive-behavioral preventive intervention program *Strengthening Early Emotional Development (SEED)*, for preschoolers (ages 3–5) with mild to moderate anxiety symptoms. It was found participation in SEED reduced child anxiety symptoms and improved emotion understanding skills. Parents also reported decreases in their own anxiety, beside attitudes reflecting increased confidence in their children’s ability to cope with anxiety.

Improvements in child and parent anxiety were maintained at 3-month follow-up (J. Fox et al., 2012).

Another study examined the treatment sensitivity of the revised version of the *Screen for child anxiety related emotional disorders* (SCARED-R) where children aged 8 to 13 years with anxiety disorders received cognitive behavioral treatment. Results showed that children's anxiety score significantly declined from pre-treatment to post-treatment. Additionally, the group and individual CBT were found to be equally effective in reducing children's anxiety symptoms (Vreeke, Muris, Mayer, & Rapee, 2013; (Fals-Stewart, Marks, & Schafer, 1993).

A study was conducted on the intervention model and primary outcomes of a preventive intervention designed to reduce anxiety symptoms and prevent the onset of anxiety disorders in the offspring of parents with anxiety disorders. Families were randomly assigned to an 8-week cognitive- behavioral intervention, the *Coping and Promoting Strength program* (CAPS) or a wait list control condition (WL). Results showed 30% of the children in the wait list group developed an anxiety disorder by the 1-year follow-up compared with 0% in the CAPS group. Parent-reported (but not child-reported) levels of anxiety showed significant decreases from the pre-intervention assessment to the 1-year follow-up assessment in the CAPS but not the wait-list group. Parental satisfaction with the intervention was high. Findings suggest that a family-based intervention may prevent the onset of anxiety disorders in the offspring of parents with anxiety (Ginsburg, 2009b). But the reality is majority of at-risk children who could benefit from these prevention efforts do not seek help (Salloum, 2010) or drop out of programs prematurely because of stigma (Salloum et al., 2016), lack of motivation (Mukolo & Heflinger, 2011), unable to afford mental health services (Salloum, 2010) and accessibility barriers (Schoneveld et al., 2018). Moreover, World Health Organization (2012) reported possibly another reason



might be the programs are not appealing and engaging to children. All these are a major threat to the effectiveness of conventional CBT programs.

### **1.15 Child focused CBT as intervention for anxiety disorders**

The efficacy of CBT in children and adolescents with anxiety disorders has been established in numerous evidence based studies and are considered as the first-line treatment of choice for anxiety disorders (Silverman, Pina, & Viswesvaran, 2008; Walkup, Albano, Piacentini, & Et al., 2008; see meta-analysis Ishikawa, Okajima, Matsuoka, & Sakano, 2007; Ollendick & King, 2004). Randomized controlled trials have consistently shown that CBT programs are effective for childhood anxiety disorders, with 55% to 60% of children no longer meeting criteria for an anxiety disorder following treatment (Cartwright-Hatton et al., 2006; Cartwright-Hatton, Roberts, & Chitsabesan, 2004; James, Soler, & Weatherall, 2008). Two recent meta-analyses identified 48 (Reynolds, Wilson, Austin, & Hooper, 2012) and 41 (James, James, Cowdrey, Soler, & Choke, 2013) randomized controlled trials of CBT for youth anxiety and concluded that CBT is an effective intervention for youth anxiety disorders.

A range of methodologically sound treatment outcome studies found in the literature, have evaluated the effectiveness of psychological and biological interventions for childhood and adolescents with phobias and anxiety disorders (e.g., Barrett, 1998; Birmaher et al., 2003; Kendall, 1994). It has been revealed that CBT and pharmacotherapy (i.e. drug based) are equally effective in reducing anxiety symptoms in children and adolescents of various ages (Veek, Derkx, Benninga, Boer, & Haan, 2013). Given that the empirical evidence for CBT is more substantial than that for pharmacotherapy, cognitive-behavioral interventions should still be regarded as the treatment of choice for childhood anxiety disorders (Broeren & Muris, 2008). In addition, studies have shown that CBT programs are superior not only to drug based interventions and but also to other therapies

for a broad array of problems, such as anxiety disorders (including social phobia, separation anxiety disorder, and generalized anxiety disorder), mild to moderate depression, post-traumatic stress disorders, obsessive-compulsive disorders, chronic fatigue syndrome and psychosis (James, Soler, & Weatherall, 2005; Silverman, Pina, & Viswesvaran, 2008). Studies have suggested that CBT can be effective for these disorders when offered individually or as a family intervention (Kendall, Hudson, Gosch, Flannery-Schroeder, & Suveg, 2008; Wood et al., 2006) and when offered alone or in combination with drug (sertraline) (Walkup et al., 2008).

### **Elements of CBT based intervention**

CBT is a psychosocial intervention that typically includes psycho-education, relaxation, somatic and anxiety management strategies, exposure therapy, participant modeling, reinforcement, cognitive restructuring, combination of social skills and problem-solving training, and self help exercises and therapeutic homework as well as other relapse prevention and maintenance strategies (e.g., Waters, Ford, Wharton, & Cobham, 2009). In CBT, youth are taught to recognize feelings related to anxiety (i.e., emotions and bodily sensations), to identify and challenge anxious self-talk, to develop coping skills, and to evaluate and reward skill use. In addition, children and adolescents are exposed to threatening situations and taught to use relaxation techniques in the face of these threats, a key component of CBT (Kendall & Hedtke, 2006).

Schneider et al. (2006) identified 24 randomized clinical trials (RCTs) exploring the treatment of anxious children. These trials examined the effects of CBT delivered individually to children between 7 and 14 years old of age. The children were suffering from various anxiety disorders (e.g. social anxiety disorder, generalized anxiety disorder, social phobia etc.). About 67% of the treated children were diagnosis free at post-intervention, compared with fewer than 10% of those in wait-list control conditions.

Maintenance of treatment gains were evidenced at 1-, 3-, and 7-year follow-ups (Kendall, Safford, Flannery-Schroeder, & Webb, 2004).

A recent randomized wait-list (WL) controlled trial was conducted on Danish children and adolescents (age 7 - 16) with a primary anxiety disorder diagnosis to evaluate the efficacy of a Danish version of the *Cool Kids* program, a standard manualized group CBT program. Results demonstrated that the Danish version of the *Cool Kids* program was effective with 48.2% free of all anxiety diagnoses at post-treatment, compared with 5.7% in the WL condition. Participants with a primary diagnosis of social phobia showed less improvement compared with other anxiety diagnoses (K. Arendt, Thastum, & Hougaard, 2016).

Another study investigated a cognitive-behavioral model of anxiety disorders in Japanese children and adolescents. Results illustrated that the clinical group showed more anxiety symptoms, negative self-statements, and cognitive errors than the community group, but no significant difference in positive self-statements. Multi-group structural equation modeling found that cognitive errors generated negative self-statements, aggravating a higher-order factor (childhood anxiety) affecting six anxiety symptoms corresponding to the diagnostic criteria of psychological disorders (Ishikawa, 2015).

An interesting study was carried out on the feasibility and outcome of clinic plus internet delivery of CBT for childhood anxiety. Children aged 7 to 14 years were randomly assigned to different conditions- clinic, clinic plus internet, or wait list control (WL). Children in the clinic and clinic-plus-Internet conditions showed significantly greater reductions in anxiety from pre- to post treatment, compared with the WL group. Reductions were maintained at 12-month follow-up for both therapy conditions (Spence, Holmes, March, & Lipp, 2006). Internet delivery of CBT for child anxiety offers promise as a way of increasing access to treatment for this population. A very recent study

incorporated art therapy and cognitive-behavioral therapy into a treatment, designed for children suffering from high level of anxiety. The effectiveness of this intervention was examined and the findings shows teacher ratings of children's mental health difficulties and self-report ratings of anxiety disorders pointed to a significant disparity from pretest to posttest. Results provide evidence for the effectiveness of eclectic art and CBT to improve children's mental health and reduce anxiety through changing thoughts, beliefs, emotions, and behaviors that may cause fear and anxiety (Ahmadi et al., 2017).

In another major RCT, children aged 8- to 12-years with social phobia were treated in a CBT based intervention. As there are evidence that children with social phobia tend to have few friends, have limited involvement in outside activities, and lack important interpersonal and social skills (Beidal, Turner, & Morris, 1999; Ollendick & Hirshfeld-Becker, 2002) the intervention aimed to rectify these. It was found at post treatment, children demonstrated enhanced social skills, reduced social anxiety, and increased overall social functioning; moreover, 67% no longer met diagnostic criteria for social phobia compared with 5% of children in the control condition (Beidal et al., 1999). At 3-year follow-up, 72% continued to be free of social phobia diagnosis (Beidel, Turner, Young, & Paulson, 2005), and at a 5-year follow-up, 81% were diagnosis free (Beidel, Turner, & Young, 2006). A study conducted to examine the efficacy of a developmentally appropriate parent– child CBT protocol for anxiety disorders in children ages 4 –7 years found that treated children showed a significantly greater decrease in anxiety disorders and increase in parent-rated coping than controls, as well as significantly better improvement on social phobia, separation anxiety disorder and specific phobia but not on generalized anxiety disorder (Hirshfeld-Becker et al., 2010). Nonetheless, a recent meta-analysis has indicated that general format of CBT may be less effective for youths with primary social

phobia, obsessive–compulsive disorder and post-traumatic stress disorder compared with disorder-specific CBT protocols for these disorders (Reynolds et al., 2012).

However, not very studies are conducted with very young children suffering from anxiety disorders. The CBT based protocols addressing childhood anxiety disorders have been evaluated mainly among school-age children and adolescents. Although some studies extended their inclusion age downward to age 5 or 6<sup>1</sup>/<sub>2</sub> (King, Muris, & Ollendick, 1998; Shortt et al., 2001), yet the under representation of younger children in studies of CBT protocols for major childhood anxiety disorders is evident. They usually included relatively small numbers of the youngest children and did not examine results separately for the youngest age group (see Hirshfeld-Becker et al., 2010). Studies have exhibited that the rate of preschoolers with persistent anxiety disorders was almost as high as older children (Egger & Angold, 2006; Lavigne et al., 1998), and factor-analytic studies also have shown that the symptom presentations in preschoolers are closely parallel to those found in older children (Eley et al., 2003; Spence et al., 2001). Freeman et al. (2008) examined a family-based CBT protocol for 5- to 8-year-old children with obsessive-compulsive disorder with promising results, advocating that young children can benefit from CBT tailored to their developmental needs. Scheeringa et al. (2007) piloted a CBT protocol for posttraumatic stress disorder in preschoolers and its effectiveness was validated. They found young children can cooperate meaningfully in structured, trauma-related exposure exercises and they can utilize relaxation techniques successfully. This findings were supported in another study (Salloum et al., 2014).

Two research groups have employed CBT directly with young children with mixed anxiety disorders. First, in an open trial with nine children, a study piloted a CBT intervention meant for 4 to 7 year olds. The treatment was offered to individual families focusing on coping skills training and graduated exposure. It integrated puppet play,

games, and specific anxiety management strategies that were found efficacious in treating fears and phobias in preschool-age children (Hirshfeld-Becker & Beiderman, 2002). Assessments have shown eight of the nine children (89%) to be much or very much improved at post intervention, and six (67%) were free from anxiety disorders at follow-up (Hirshfeld-Becker et al., 2008). Similarly, another openly piloted CBT group treatment geared toward 5 to 7 year olds, offered parallel child and parent groups. Findings revealed 48% of children no longer met criteria for any anxiety disorders at post treatment, and 72% had at least one anxiety disorder remit (Monga, Young, & Owens, 2009). Commencing intervention earlier provides the opportunity to teach children and parents the skills for managing anxiety before symptoms begin to hamper the child's self-concept, socialization, and learning (Hirshfeld-Becker & Biederman, 2002). Earlier intervention might also be able to help amend some of the factors theorized to maintain anxiety, including parenting factors (Rapee et al., 2009; Hudson, Comer, & Kendall, 2008; Hudson et al., 2013).

Various studies found group CBT to be highly and equally effective in treating anxious children beside individual CBT (Barrett, 1998; Flannery-Schroeder & Kendall, 2000; Manassis et al., 2002). Improvement rates comparable with those found with individual CBT at post treatment (e.g. 64%-69% vs. 6%-25% for those in wait-list control conditions) and follow up at 3 to 12 months. In general, no differences have been found between individual and group CBT treatments for anxious children (Flannery-Schroeder and Kendall, 2000; Manassis et al, 2002). Other studies have shown that family-enhanced CBT might produce even greater outcomes than those attained with individual or group CBT alone (Cobham et al., 1998; Shortt et al., 2001) at least with younger children and children whose parents also have an anxiety disorder. Studies showed that family-focused CBT produced results superior to individual CBT with 6- to 13-years old children (mean

age = 9.8 years) who had an anxiety disorder (Wood et al., 2006), although other studies have found no differences between parent- or family-enhanced treatments for 7- to 14-year old children with social phobia (Spence, Donovan, & Brechman-Toussaint, 2000). Similar findings were reported for children diagnosed primarily with generalized anxiety disorder and separation anxiety disorder (Nauta et al., 2003); Kendall et al., 2008).

Rapee, Kennedy, Ingram, Edwards, & Sweeney, (2005) demonstrated that a six-session CBT group intervention training received by the parents of behaviorally inhibited 3 to 4 year old children significantly reduced the rates of anxiety symptoms and disorders among the children, compared with children who were monitored only. However, a substantial portion of the treated children continued to meet criteria for anxiety disorders. Barmish & Kendall (2005) asserted, “Alluring as it might be to include parents as co-clients for multiple theoretical reasons, the belief cannot be mistaken as evidence” (p. 578). They went on to recommend that “additional comparative research is needed and that the acceptance of either approach as superior is not yet justified” (p. 579). Involving the parents and families as facilitators of emotion regulation and emotion socialization in intervention programs is more likely to produce favorable effects. It should be noted regardless of the considerable progress made in treating children and adolescents with anxiety disorder, a substantial proportion of youths who have undertaken CBT programs have not found to be benefited (see Campbell 2009; Muris & Broeren, 2009).

Some of the evidenced based well known CBT programs for children are presented to have an idea regarding the intervention programs around the world.

#### ***1.15.1 Coping and promoting strength program (CAPS)***

The CAPS (Ginsburg, 2009) intervention consisted of 6 – 8 weekly sessions and 3 monthly booster sessions; each session was approximately 60 min in length. The components of the intervention and their sequencing were based largely on CBT found to

be effective with clinically anxious youth (Silverman et al., 1999) as well as Beardslee's family-based intervention for the offspring of depressed parents (Beardlee et al., 2003). Guided by the following principles: (a) increasing children's strength and resilience by teaching specific skills (e.g., problem solving); (b) reducing known risk factors associated with the onset and maintenance of anxiety in children (e.g., parental overprotection), and (c) increasing knowledge of anxiety and its disorders to improve communication among family members, infuse hope, and help the child and family make sense of the parental illness, the CAPS intervention was developed.

### ***1.15.2 Cool kids***

The *Cool Kids* (Rapee et al., 2003) program was developed as a manual based group CBT program suitable for the treatment of most anxiety disorders in youths (age 6–18 years) for use in school settings. It has separate work-books for children (6–12 years) and adolescents (13–18 years). The version for adolescents known as the Chilled Adolescents program includes the same treatment components as Cool Kids, but with a different wording suitable for this age group. Cool Kids is a relatively short program consisting of ten sessions with four to eight youths and their parents in a group. Due to the high degree of comorbidity among anxiety disorders (40–60%) (Rapee, Wignall, Hudson, & Schniering, 2000; Rapee et al., 2009), treating different anxiety disorders in the same program may facilitate its practical utility. It may be easier and wiser to form diagnostically mixed groups rather than homogeneous groups in treating children and adolescents with anxiety disorders (Reynolds et al., 2012).

Mifsud & Rapee (2005) evaluated the school-based *Cool Kids* program for the reduction of anxious symptoms in at-risk children from low socioeconomic status neighborhoods. Children of 8-11 years with high-level of anxious symptoms were selected to be treated under the intervention condition. Compared to children receiving no



treatment (WL), children of the *Cool Kids* intervention program have shown a significant reduction in symptoms of anxiety and these differences were sustained 4 months after treatment. Therefore, school-based early intervention appears to offer an effective means of reducing anxious symptoms in economically disadvantaged populations.

### ***1.15.3 Coping cat***

Kendall's *Coping Cat* youth CBT anxiety program has strong empirical support with more than two large-scale randomized controlled trials (Kendall, 1994; Kendall et al., 1997; e.g., Mychailyszyn et al., 2011a). The *Coping Cat* program (Kendall & Hedtke, 2006) is a 16-session CBT program for anxious youth. The first eight sessions focus on psycho-education and acquisition of skill to recognize and manage anxiety. Here children are taught the acronym 'FEAR' for Feelings, Expectations, Actions, Reward to facilitate recall of the steps for coping. The last eight sessions focus on exposing the child to imaginal anxiety-provoking situations (in vivo exposure) while using the previously learned skills i.e., utilizing their FEAR plans (e.g., Mychailyszyn et al., 2011; Campbell, 2003).

In the initial RCT it was found that 64% of youth treated with the *Coping Cat* no longer have their pre-treatment principal anxiety disorder when assessed at post-treatment. The improvements were maintained at 1 year follow-up (Kendall, 1994). A second, larger RCT (Kendall et al., 1997) also attained similar outcomes, with a 7.4 year follow-up it was found that the majority of successfully treated children exhibited maintenance of improvements compared to youth who were not successfully treated (Kendall et al., 2004). A third RCT (Philip C. Kendall, Gosch, Furr, & Sood, 2008) compared individual CBT (ICBT), family CBT (FCBT), and an active family-based education/support/attention (FESA) condition. They found compared with the FESA condition significantly more children in the CBT conditions no longer met diagnostic criteria at post treatment.

#### ***1.15.4 Coping Koala***

Kendall's (1990) original work was adapted for Australian children by (Dadds, Barrett, & Rapee, 1996) and named the *Coping Koala* program. This program is a manual based family anxiety management CBT, consisting of 12 sessions of about 30–40 min each in length. The sessions focus on identifying anxious feelings and physical reactions to anxiety, cognitive restructuring in anxiety-provoking situations, coping self-talk, exposure to feared stimuli, evaluating performance, and administering self-reinforcement. During the first four sessions, anxiety management methods are launched; these were role-played by the therapist and then practiced by the children. In the remaining eight sessions, children practiced the previously learned coping skills in real-life situations, starting with low-stress situation and gradually increasing to high-stress situations. A study on the program found 72% of children who completed the program no longer met diagnostic criteria for an anxiety disorder after one year (Barrett, Duffy, Dadds, & Rapee, 2001).

#### ***1.15.5 The FRIENDS program / FRIENDS for Life***

Barrett's adaptation of *Coping Cat* and *Coping Koala*, referred to as the FRIENDS program (now renamed *Friends for Life*) is a universal program that has been implemented and evaluated in school setting (Barrett, 2013; Barrett & Turner, 2001; Lowry-Webster et al., 2001). The program consists of 10, 1 hour, weekly sessions. It includes modules covering cognitive strategies, exposure exercises, relaxation techniques and preparedness for natural examples of exposure to anxiety provoking situations. In addition, it has a parent and a peer group component. This program also focuses on interactive work with the child's peer group highlighting peer support and peer learning, encouraging the child to make friends and increasing their social association (Shortt et al., 2001). School based trials demonstrated that students in the intervention group reported less anxiety symptoms in post treatment compared to a control group. Results revealed

that children experiencing clinical level of anxiety at pre-treatment were found to have significantly reduced anxiety at post-treatment. This was true for the 75.3% of the cases in the intervention group, whereas the scenario was 45.2% of cases in the control group (Lowry-Webster et al., 2001). It has strong empirical support with 6 to 10 years old children and their parents. At post treatment, 69% of the children in the FRIENDS condition were diagnosis free compared with 6% in the waiting-list control condition (Shortt et al. 2001). Moreover, these positive results seem to apply to children with co-morbid disorders also (Rapee, Schniering, & Hudson, 2009).

All the research findings support CBT as an efficacious intervention for anxiety disordered children. Cognitive behavior therapies for children are still evolving and many clinicians and researchers are trialing new and innovative ways to help anxious children. Programs need to be developmentally appropriate, educationally sound, and recognize and accommodate for the individual differences.

### **1.16 School based intervention**

The incidence of mental health problems can be prevented by the school based interventions through targeted or universal programs. Several programs have been developed to prevent or treat mild to moderate symptoms of depression, anxiety, and other mental illnesses, which can be delivered in educational settings. Caution should be taken because programs that are effective in small samples may not work at large setting. High degree of control is possible with smaller groups but considerable difficulties may arise in larger groups, such as in school settings (Malti, Ribeaud, & Eisner, 2011; Eisner, Nagin, Ribeaud, & Malti, 2012; Weisz & Jensen, 2001). There are more evidence for targeted programs (applied to youths at elevated risk for depression) than for universal programs (e.g., Stice, Shaw, Bohon, Marti, & Rohde, 2009) but a recent review gave evidence for

both targeted and universal programs (Durlak et al., 2011; Merry, McDowell, Wild, Bir, & Cunliffe, 2004). Universal programs are more popular with schools and often easier to execute, partially because of a perceived lack of stigma related to participation in mental health services (Offord et al., 1998).

Literature illustrated that school-based early intervention programs can reduce anxiety symptoms in most of the children (e.g. Dadds et al., 1999; Tomb & Hunter, 2004). These are preliminary evidence showing that CBT can be successfully transported into schools (e.g., Mychailyszyn et al., 2011). In the developed countries, only 20% – 50% children identified with mental health problems access services, and among which large portion are provided by schools (Farmer, Burns, Phillips, Angold, & Costello, 2003). The naturalistic setting of schools may have the facility to reduce the stigma that can accompany mental health treatment in the community (Storch & Crisp, 2004).

Schools have been identified as ideal settings for prevention and early intervention programs for anxiety (Angelosante, Colognori, Goldstein, & Warner, 2011) and emotion regulation (e.g., Lanza, Rhoades, Nix, Greenberg, & Group, 2010). School-based programs have been found optimal for enhancing social–emotional learning (Barrett & Pahl, 2006; Elias, Bruene-Butler, Blum, & Schuyler, 2000) and promoting mental health services for youths than clinics, because of near-universal participation in education (Masia-Warner, Nangle, & Hansen, 2006). Also schools are the primary setting in which youth display impairments (Ginsburg et al., 2008). Many of the situations that cause disorder-related problems are interwoven within the school experience. For example, anxious youth may be unwilling to attend school for the fear of being separated from parents, disturbed about social interactions with peers, and/or concerned about academic performance (McLoone, Hudson, & Rapee, 2006). Therefore, school-based interventions

are exclusively prepared to enhance generalization by encouraging practice and fostering growth in the very situations that replicate difficulty. Furthermore, schools are often composed of diverse populations with different types of difficulties. These factors suggest that schools have “ecological validity” (Owens & Murphy, 2004) to comprehend treatment benefits both clinically and practically in meaning ways.

Several school-based programs have been developed and tested specifically for anxiety, such as REACH for RESILIENCE (Dadds & Roth, 2008) and FRIENDS for Life (Barrett, Farrell, Ollendick, & Dadds, 2006; Fisak, Richard, & Mann, 2011; Essau et al., 2012a; Angelosante et al. 2011). Neil & Christensen (2009) and Fisak et al. (2011) found a dozen primary prevention programs in their recent reviews on efficacy and effectiveness trials of school-based prevention and early intervention programs for anxiety in general. It could be concluded from the reviews that most of these programs were associated with significant short-term improvements in outcome measures, including symptoms reduction as assessed by clinical measures. Many studies have found that the treatment effects of prevention programs were larger at long term follow-up than they were immediately after the program (Kendall et al., 2001; Toren et al., 2000).

Interesting investigations have examined the effectiveness of delivery of CBT for anxiety by teachers, school nurses vs. psychologists. It has been reported that similar reductions in anxiety were gained in interventions led by teachers and school nurses when compared to interventions led by psychologists (Barrett & Turner, 2001; Stallard et al., 2005). In addition, intervention protocols specifically modified for the treatment of particular anxiety disorders within the school setting have also been developed. A study on the intervention for adolescents with social phobia in the school setting found that in post treatment, 59% of adolescents treated with CBT no longer met diagnostic criteria for social phobia when compared to 0% in an attention-control group (Warner et al., 2007).

A school based universal nonrandomized pragmatic control trial (The UK Resilience Programme) found short term improvements on depression symptoms but no reduction was achieved for anxiety and behavioral problems (Challen, Machin, & Gillham, 2014).

Effectiveness of a school based early intervention CBT group program “*Get Lost Mr. Scary*” for children aged 5 to 7 years old with anxiety were examined. This was the first controlled trial of the program. Post intervention showed significant reductions in children’s anxiety and behavioral symptoms compared to children in wait-time group who showed no significant change (Ruocco, Gordon, & McLean, 2016).

Although these research findings present encouraging evidence that CBT can reasonably be delivered in schools with assuring results, recent reviews of the literature point out that greater research attention to school-based CBT is demanded (Silverman et al., 2008).

### **1.17 Other intervention programs**

Other than the anxiety management intervention programs there are intervention programs with a wide focus on emotion regulation, coping skills and social/emotional learning which have been implemented successfully in schools. Among them the *Promoting Alternative Thinking Strategies* program (PATH; Domitrovich, Cortes, & Greenberg, 2007) and its variations (e.g., Fast Track PATH, (Conduct Problems Prevention Research Group, 1992), and the Social Decision-Making and Social Problem Solving program (Elias et al., 2000), were found to significantly increase children’s knowledge about emotions, actual emotion regulation skills, social skills and pro-social behavior, and to reduce aggression and hostility. Especially in case of internalizing disorders and other disorders as well, the risk and protective factors are common

therefore, many resiliency programs can also be used for anxiety prevention and intervention. Programs such as the *Resourceful Adolescent Program* (RAP: Shochet & Osgarby, 1999) and *Adolescents Coping with Emotion* (ACE) have reported to reduce anxiety symptoms as by product because these programs were actually targeting depression symptoms (Hannan, Rapee, & Hudson, 2000). Bibliotherapy or story books have also been used for intervention as described below.

### **1.18 Bibliotherapy/Story books**

Stories allow expression of an individual's identity (the core of human dignity) to an immediate, interactive audience (Errante, 2000). This can be therapeutic and creates a bridge of trust, respect, and validation that ties people together (Evans, Crogan, & Bendel, 2008; Crogan, Evans, & Bendel, 2008). Several neuroscientists, researchers and authors have demonstrated the influence of storytelling on the brain, understanding, perception and life (e.g., Jennings, 2017). As some researchers put "*The use of stories is part of learning about alternative options for future action, by drawing from the hero who overcomes obstacles. Stories also provide a small space, in which children can address larger, more complex issues and normalize experiences beyond their understanding. This can reduce anxiety and establish a sense of order and safety*" (Berger & Lahad, 2013, p 32). Others stated "*A story activates parts of the brain that allows the listener to turn the story into their own ideas and expression. Listener's brain activity mirrors the speaker's brain activity with a delay*" (Stephens, Silbert, & Hasson, 2010). As story books and /or storytelling play a very important role in the life of human beings, it has been integrated into therapy as preventive and intervention measures. The use of stories in psychotherapy has been is known as bibliotherapy.

Bibliotherapy uses books or stories to provide opportunities to develop insight into personal problems and to assist emotional healing (Heath, Sheen, Leavy, Young, & Money, 2005). Bibliotherapy (story books) can support children in achieving control over their lives by identifying with others and discovering both unique and universal solutions (Eliasa, 2016). In school settings, the use of storybooks in groups has observable advantages because reading activities can be easily incorporated into several circumstances (McEncroe, 2007). One advantage is that stories facilitate the sharing of views, attitudes and beliefs about situations involving stress or conflict (Harper, 2010). Another advantage of storybooks is the use of a combination of text and images, which facilitates information assimilation and learning in the context of programs for developing social and personal skills. Reading a storybook portraying characters succeeding in coping with a stressor or anxiety provoking stimuli can be combined with an intervention carried out in a non-threatening environment. Thus use of books in intervention programs minimizes the risk of labeling children as having anxiety symptoms, which is a threat when there is possibility that secrets may come out.

When matched with appropriate activities and related discussions based on hypothetical situations, can facilitate understanding one's emotions, develop appropriate social and problem-solving skills, amending one's negative self-talk, and learning coping strategies (Gair, 2012). Furthermore, in many clinical situations it has already been found that using stories to allow children and their parents to discuss difficulties faced by a child was useful. In the form of self-help books or manualized workbooks, story books has been investigated with children (Bouchard, Gervais, Gagnier, & Loranger, 2013), including those suffering from anxiety disorders. It has been shown to assist in reduction of flying phobia (Register, Beckham, May, & Gustafson, 1991), social anxiety (Carlbring et al., 2007; Andersson et al., 2012) and test anxiety (Register et al., 1991). The efficacy of a



self-help treatment manual administered by parents of anxious children was tested and found moderate efficacy of the program compared to standard therapist-administered treatment (Rapee, Abbott, & Lyneham, 2006). In a pilot study of a program from a different research group results were found to be stronger (Leong, Cobham, Groot, & McDermott, 2009). The programs that use technologies such as CD-ROMs or the Internet (Bouchard et al., 2013) were found to be effective. These studies addressed the treatment of anxiety disorders with story books as self-help books that focus on symptoms, irrational beliefs and dysfunctional behaviors typical of anxiety disorders. In addition, it can be said that also in primary prevention the use of books and stories that focus on daily or common stressors may be valuable. Stories spotlighting on realistic stressors experienced by “normal” characters provides a rich source of information. It shows key concepts, adaptive behaviors and normalize emotional reactions, and also provides the opportunity to anxious children to share their apprehensions and worries without disclosing details of personal events. Making use of books and stories portraying children dealing with common stressors, and/or focusing on anxiety-provoking situations, represents an innovative way to discuss the worries that children might be experiencing. Children can identify with the characters of the book and can learn new anxiety management skills along with them. Thus storybooks can suggest stressors with which children may be confronted during childhood. Books on anxiety management stories appropriate for children teach them to choose various cognitive-behavioral strategies, and apply them to solve their day to day problems (Meyerbröker & Emmelkamp, 2010). Finally it can be said that story books can be a great resource for intervention. It has been recommended that storytelling be used as an adjunct to therapy rather than as an isolated technique (Pardeck & Markward, 1995). Few studies found combination of CBT and bibliotherapy to be effective as therapist-led CBT (Waller & Gilbody, 2009). Hence, the combination of

effective cognitive-behavioral strategies with the use of storybooks may have much to offer in the delivery of an intervention program for anxiety stricken children.

Many non-fiction books are available for pre-schoolers that deals with anxious feelings and/or symptoms of anxiety disorders such as (Crary, 1994) *I'm Scared*, as well as fiction books such as (Waddell, 2013) *Can't you sleep, little bear?* and (Varney, 2016) *Jelly legs*. Books suitable for primary school students include (Browne, 2014) *Willy the wimp*, Campbell's (2006) *Cilla the worried gorilla* and *Danny the frightened dinosaur*. Books such as *Duffy's once were worriers* (Duff, 1999) and *Things in corners* (Park, 1990) are suitable for secondary school students. Based on these books intervention programs can be developed. Campbell's *Worrybuster* program is such a bibliotherapy and CBT based intervention program for children with anxiety disorders.

#### ***1.18.1 Worrybusters*** (M. A. Campbell, 2007)

The *Worrybusters* program was originally developed for primary school children aged 5 to 12. It is a CBT framed intervention for anxiety which is developmentally appropriate, educationally sound and able to be flexibly delivered. The program consists of 10 one-hour sessions which can be delivered over a ten-week period. The sessions explore the physiology, thoughts, feelings and behaviors associated with worry and anxiety, and provide a variety of coping strategies to manage and increase positive wellbeing (Campbell, 2007). It includes bibliography, fiction books, and play therapy into a structured CBT framework. The program provides a range of activities from which counselors/psychologists can select activities depending on the child's need, characteristics and preferences (Campbell, 2007). The activities are drawings, storybooks, videos, puppets, paired and group discussions, role-plays, balloons and breathing exercises. The program is divided in two parts: teaching coping skills to deal with anxiety, and challenging participants to face their fears using the coping skills. Metaphors were

used to try out their coping skills as they face their fears (exposure). Normalization of anxiety experiences, group exposure through discussion and role-plays of common threatening experiences; and peer learning through discussion of successes and difficulties are included in the process. Children are encouraged to learn from each other's experience and are taught cognitive techniques to confront unhelpful thoughts. In a small pilot study, the *Worrybuster* program was presented using a cross-peer tutoring approach. First a group of anxious secondary school adolescents completed the program and then they selected activities from the program which they felt would appeal to anxious primary school children. They then themselves presented the program to the young group. Although adolescents' anxiety scores decreased in their self reports, there were no significant differences in primary school children's self report. However, primary school children's parents reported significant decrease in their children's anxiety (Campbell, 2008).

Story books or story telling has been used effectively to help children to deal effectively with various physical illness and other difficulties. For example, storytelling has been used with children who were fighting cancer (Akard et al., 2015) and children facing dental and other surgery. Digital storytelling used in a research as an intervention for children (7-17) with cancer demonstrated promise to improve quality of life outcomes. It facilitated communication between parent and child, emotional comfort, coping strategy of parents and children were able to express feelings, cope and feel better (Akard Terrah Foster et al., 2015). Another study evaluates a CBT based story book-supported primary prevention program *Dominique's Handy Tricks* (Gervais, Bouchard, & Gagnier, 2011) in children aged 9 to 12 years for anxiety disorders. This program was delivered using a combination of storybooks and workshop sessions. Each session was based on a story illustrating characters facing day to day stressors which were very common to school-age

children such as having academic problems, being judged by others, being separated from their parents or being ridiculed and how they manage to cope (as facing fears, coping with bullying, or disclose to adults) with their daily problems. In randomized control trial, children in the program showed significant improvement in coping skills, perceived self-efficacy, anxiety sensitivity, in addition to symptoms of anxiety and fear. Such approaches, without labeling to any specific anxiety disorders, can be helpful in primary prevention programs. Effectiveness of a novel, child-appropriate form of *Cognitive Bias Modification of Interpretations* (CBM-I) training tool was tested for reducing social anxiety among young children. Training materials were incorporated within bedtime stories and a parent read the stories to the child across three successive evenings. Compared to a test-retest control group, children receiving CBM-I reported greater support of benign interpretations of ambiguous situations in post-training when compared to pre-training. This group of children also showed a significant drop in social anxiety symptoms but it was not the case with test-retest control group (Lau, Petit, & Creswell, 2013). Therefore, sufficient evidences are available that has shown the effectiveness of child focused CBT based story book supported interventions for children with anxiety disorders.

According to Gazzaniga (2016) “*What stories give us in the end is reassurance. And as childish as that may seem that sense of security-that coherent sense of self is essential to our survival*”.

Hence from all the discussions presented it can be said adequate assessment and intervention might be the key in tackling the problem of children’s anxiety disorders.

### **1.19 Rationale and objectives of the study**

Bangladesh is a developing nation with an estimated population of 157.8 million people as on July 2017 according to the website of CIA, of whom 27.76% are under age of

15 years. That estimates nearly 43.81 million children. Considering the prevalence rate (11–21%) of at least one psychiatric disorder in 5- to 10 year old Bangladeshi children (Mullick & Goodman, 2005) it is likely that immense number of children and adolescents may suffer from anxiety disorders. Parental pressure and expectations, academic competition, school exams, home work related stress etc. are enough to develop anxiety among many young children. In addition, large number of traumatic events (such as annual flooding or cyclones, frequent road, and water transport accidents, building collapse, fire, domestic violence etc.) that occur in Bangladesh, may also contribute in the development of anxiety disorders. This is supported by the study conducted by (Deeba, Rapee, & Prvan, 2014), who point to the common occurrence of distressing events and their emotional effects among children and adolescents and emphasized the need to develop useful and reachable mental health services for Bangladeshi children and adolescents. It is highly likely that children from developing countries are more vulnerable to distressing experiences and more likely to suffer a variety of psychological difficulties than children from developed countries (Kendler et al., 2010; Patel, 2007; Patel et al., 2007). This suggests that Bangladeshi children probably are suffering high level of anxiety.

Therefore, it is of utmost urgency to adapt and validate easy to administer instruments for detection of anxiety and also to develop early intervention programs tailored for these children.

As anxiety is affected by culture the assessment tools has to be psychometrically valid for that culture. In Bangladesh, only a few studies have been carried out in the area of anxiety disorders and majority of which are with adult population (Uddin et al., 2012; Kabir & Rahman, 2013; Alim et al., 2015). Only two anxiety scales for children have been adapted in Bangla to use for research and/or clinical purpose (Deeba, Rapee, &

Prvan, 2015); Uddin, Huque, & Shimul, 2011) whereas there are more than a half dozen of psychometrically sound anxiety measuring instruments for children in developed countries. Studies in childhood anxiety disorder are not limited to assessment, it is of top most importance to develop intervention tools/programs that are culturally sensitive, cost effective, and can be applied in large scale, most importantly have the ability to reduce anxiety symptoms in children and adolescents. Although there are some excellent evidence-based prevention and intervention programs for children and adolescents in developed countries, there is no-such arrangement in Bangladesh. As a developing country of Asia, Bangladesh needs to turn its huge population into human resource. But certainly it cannot be achieved with anxious children turning into adults suffering from anxiety and other psychological disorders. Hence, it is important to develop programs with the aim of preventing the enormous economic, personal and social cost of anxiety for children and the community.

Well developed measures of anxiety and intervention programs will help the youths to overcome their anxiety and move towards a positive development in a most economic and cost effective way. The few educational/counseling/clinical psychologists working in school and hospital setting can make use of these tools and programs given that at present there is scarcity of tools to measure anxiety and even more no intervention programs are available to treat children beside medication. With this in mind, the present research adapted few well known anxiety scales and developed story books on anxiety disorders and tested its effectiveness in school settings. Story books were written based on CBT which is the most effective therapy to treat children with psychopathology. It is expected that these tools and the one-of-a-kind Bangla CBT based story supported intervention programs can be a resource for the clinicians working with children in mental health arena of Bangladesh.

### **1.19.1 General Objectives**

Therefore the general objectives of the present research were to-

- 1) adapt and validate assessment tools to measure anxiety in primary school children.
- 2) develop child-focused CBT-based story books and intervention tools to reduce anxiety in primary school children.
- 3) assess the effectiveness of the intervention programs/tools in primary school children in school settings.

### **1.19.2 Specific Objectives**

The specific objectives of the first general objective include the adaptation and validation of three scales to use in Bangladesh namely the

- i) Child and Adolescent Worry Scale (CAWS)
- ii) Spence Children's Anxiety Scale (SCAS)
- iii) Spence Children's Anxiety Scale- Parent version (SCAS-P).

The second general objective encompasses the following specific objectives

- i) To develop CBT-based 5 story books, each on separate anxiety disorders namely separation anxiety disorder, selective mutism, specific phobia, social phobia and generalized anxiety disorder.
- ii) To develop a CBT focused self-help interactive book to assist children to learn and practice skills needed to cope with anxiety.
- iii) To develop session wise modules for conducting the intervention program in school settings based on the storybooks and interactive book.
- iv) To provide psycho-education on anxiety and their types in the books for the parents and teachers.

- v) To provide information on the characters and places described in the stories.
- vi) To make illustrations for the story and interactive books.
- vii) To test the appropriateness of the intervention program (comprised of story and interactive self help books and manuals) through field test.

For the third general objective, the specific objectives were to assess the effectiveness of the intervention program by

- i) CAWS
- ii) SCAS
- iii) SCAS-P
- iv) Treatment credibility questionnaire

#### 1.20 Thesis structure

Studies are presented logically and coherently chapter wise. The first chapter is the general introduction which has been appeared in three parts. The 1<sup>st</sup> part describes normal anxiety, anxiety disorders along with its manifestations, prevalence, consequences, comorbidity, etiology, theoretical foundation and, the justification and objectives of the research. The 2<sup>nd</sup> part describes the different measurements of childhood anxiety and its adaptations. The 3<sup>rd</sup> part is concerned with the interventions for anxiety focusing on prevention, CBT based interventions, child-focused intervention programs and bibliotherapy (story book) as intervention tools for anxiety.

Chapter 2, 3, and 4 describes the adaptation of Child and Adolescents Worry Scale (CAWS), Spence Children's Anxiety Scale (SCAS), and Spence Children's Anxiety Scale-Parent version (SCAS-P).



Chapter 5 is devoted to the development of the intervention tools including story books on different anxiety disorders and incorporating CBT based strategies to overcome anxieties, designing modules and psycho-education for parents and teachers.

Chapter 6 is concerned with the implementation of the intervention program in school settings and assessing its effectiveness through pre and post treatment using the adapted scales.

Chapter 7 is dedicated to the general discussion which includes overall discussion taking into account all the studies. Findings, uniqueness of the thesis, applicability, limitations and future research directions are discussed.

From chapter 2 to 6, all are presented with its relevant introduction, methodology, result and discussion sections.

Two terminology need to be explained. All through the thesis presentation, the term youth incorporates children and adolescents, whereas worry and anxiety both refer to anxiety.

## **Chapter 2: Adaptation of Child and Adolescent Worry Scale (CAWS)**

### **2.1 Introduction**

Anxiety disorders constitute a common psychiatric problem with a 12 months prevalence of 18.1% as diagnosed using DSM-IV criteria (Kessler, Chiu, et al., 2005). Numerous studies investigated the phenomenology, etiology, assessment, and treatment of anxiety disorders in adults (Barlow, 2004) but childhood anxiety disorders were largely overlooked as disclosed in 25 years of research on childhood anxiety (Muris & Broeren, 2009). It was found that childhood anxiety disorders reflected only 10.2% of the total publications on anxiety disorders (Muris & Broeren, 2009). Many researchers considered childhood anxiety disorders less relevant clinical phenomena due to the prevalence of fear and anxiety in youth (Cartwright-Hatton, 2006). This attitude, however, has changed in recent times, as it has been demonstrated that a significant number of children and adolescents suffer from acute fear and anxiety which warrants a diagnosis of an anxiety disorder. Indeed, community studies have found that anxiety disorders are the most frequent forms of psychopathology among the young population (Ford, Goodman, & Meltzer, 2003; Costello, Mustillo, Erkanli, Keeler, & Angold, 2003). A significant proportion of childhood anxiety disorders have a persistent course and even last into adulthood (Roza, Hofstra, van der Ende, & Verhulst, 2003).

Recent studies have used various questionnaires and interview measures to investigate childhood anxiety disorders in view of the prevailing diagnostic system, i.e. DSM (Silverman & Ollendick, 2005). Among them, the most widely used are Spence Child Anxiety Scale (SCAS; Spence, 1998) and Screen for Child Anxiety Related Emotional Disorders (SCARED; Birmaher et al., 1999). Both assess children's anxiety disorder from the reports of children and their parents. There are also rating scales for clinicians, such as

Pediatric Anxiety Rating Scale (Research Units on Pediatric Psychopharmacology Anxiety Study Group, 2002), and interview instruments, such as the Anxiety Disorders Interview Schedule for DSM-IV: Child and Parent versions (Silverman & Albano, 1996), all these are considered as the gold standard (Muris & Broeren, 2009). Some other well-known anxiety measures which are widely used in research studies include Child and Adolescent Worry Scale (CAWS; Campbell & Rapee, 1994), Revised Children's Manifest Anxiety Scale (RCMAS; Reynolds & Richmond, 1978), and Beck Anxiety Inventory (BAI; Beck, Brown, & Steer, 1988). There are few instruments to measures specific anxiety disorder, such as Social Anxiety Scale for Children-Revised (SASC-R; Greca & Stone, 1993) and the Social Phobia and Anxiety Inventory for Children (Beidel, Turner, & Morris, 1995). Majority of the measures which are used to assess childhood anxiety have been developed in English speaking countries. It is essential that these instruments undergo the standard adaptation procedure to ensure cultural equivalence before they are used to study childhood anxiety in Bangladesh. Research articles suggested some guidelines for adaptation procedure which are quite similar (Beaton et al., 2000; Borsa, Damásio, & Bandeira, 2012; Sousa & Rojjanasrirat, 2011; ITC, 2010).

The adaptation of an existing instrument rather than developing a new one not only saves time and money but also allows to compare data from different samples and from different cultural backgrounds. This also allows to generalize research findings and to explore differences within an increasingly diverse population (Widenfelt, Treffers, Beurs, Siebelink, & Koudijs, 2005; Hambleton et al., 2004).

The aim of the present study was to adapt the CAWS in Bangla to assess the effectiveness of the intervention tools developed by the author to reduce anxiety in children (see Chapter 6). The CAWS was selected for adaptation based on some positive features. First, this is a brief measure with 20 items and therefore would ensure

attentiveness in children while answering the questions. Second, the measure was developed directly from child samples rather than being modified from similar adult measures. Third, the measure is provided free of charge by the developer, which is an important consideration when working in a developing country. Fourth, the measure has shown strong psychometric properties in community samples (Campbell & Rapee, 1994). The adaptation was carried out following the guidelines suggested by Sousa & Rojjanasrirat (2011).

### 2.1.1 Objective

The objective of the present study was to adapt the Child and Adolescent Worry Scale (CAWS) to measure anxiety among primary school children.

## 2.2 Method

### 2.2.1 Participants

For adaptation purpose school going 130 children were finally selected from different mainstream and special schools of Dhaka city. Among them, 99 were mainstream children and 31 were special need children. Their age range was 6 to 15 years with an average age of 9.36 ( $SD=2.883$ ) years.

Table 2.1: *Distribution of participants according to type and sex of children*

Child Type	Boy	Girl	Total
Normal	56	43	99
Special	20	11	31
Total	76	54	130

**2.2.2 Sampling technique:** Convenient sampling technique was used to select the participants i.e. those who voluntarily agreed to participate in the study. Inclusion criteria were to include those children living with their parents and brought to school by the parents.

**2.2.3 Sample size:** It is recommended to use at least five subjects per item of the scale to conduct the psychometric testing of a new instrument (Sousa and Rojjanasrirat 2011, Nunnally and Bernstein 1994). Thus for 20 items of the CAWS initially nearly 200 participants were recruited. Finally, a sample size of 130 was chosen.

**2.2.4 Ethical consideration:** Ethical approval was granted by the Ethics Review Committee of the Department of Educational and Counselling Psychology and the concerned university Ethical Review Committee for Human Volunteer.

### **2.2.5 Measures**

#### **A. Child and Adolescent Worry Scale (CAWS; Campbell & Rapee, 1994)**

The CAWS is a widely used anxiety scale for young children aged 6 to 16 with sound psychometric properties. The CAWS is a 20 item scale of negative outcomes which children could worry about. The instructions ask children to indicate how much they worry about each item on a three-point Likert scale (0 = 'none' to 2 = 'a lot') giving a scoring range from 0 to 40. The scale is aided by a graphic at the top of the page which depicts a smiling face, a slightly worried face, and a very worried face representing each score.

The scale has been shown to have two factors (Campbell & Rapee, 1994). Factor 1 has been labeled as Physical Threat. It is defined by items characterized by worries related to death, pain and physical injury and Factor 2 is characterized by worries related to social embarrassment, loneliness and perfectionism and has been labeled as Social Threat.

Internal consistency of the scale has been reported to be 0.92 for the Physical scale, which contains 9 items and 0.84 for the Social scale which contains 11 items and .89 for the total scale. The CAWS has high test-retest reliability over seven days (0.90 for the physical scale and 0.84 for the social scale) and a moderate to strong reliability over a three-month

interval (0.82 for the physical scale and 0.71 for the social scale). The CAWS has also been shown to have adequate validity correlating positively with the FSSC-R, the RCMAS and the STAIC (Campbell & Rapee, 1994). High scores in the scale indicate a high level of anxiety.

The CAWS was modified in a study of children aged between 5 to 16 to have three different versions of the scale (Campbell, Rapee, & Spence, 2000). In the original scale (worry wording) it was asked how much they worry about the items. The responses were 2 = A lot, 1 = A little, 0 = None. In the 2<sup>nd</sup> version (aversive wording) the items remained the same while the wordings of the question and responses were changed to “How bad it would be if”. For example “How bad it would be if you make a mistake in front of the class?” The responses were changed to 2 = Very Bad, 1 = Quite Bad, and 0 = Not all that Bad. In the last version (frequency wording) the question was changed to “How often do you think about?” with responses being 2 = Everyday, 1 = Sometimes, and 0 = Never. Exploratory factor analysis showed the items in the different versions consistently loaded on the same physical and social factors. All items loaded on the same factors across all versions of the CAWS. Cronbach's coefficient alphas were derived for the three versions. Internal consistency of each scale for each age group and gender were ranging from .68 to .95. Reliabilities were high across all age group though younger age group had slightly low reliability. A significant difference was found between the wording groups, and between the age groups. Aversive wording scored highest, followed by the worry wording and then frequency (Campbell et al., 2000).

### **B. Bangla Beck Anxiety Inventory for Youth (BAI-Y)**

This sub-scale of Beck Youth Inventories of Emotional and Social Impairment (BYI) is a self-report inventory of children aged between 5 to 16 for measuring the severity of anxiety among the psychiatric population (Beck et al., 1988). Original BAI-Y

has 21 items. It showed high internal consistency (.92) and test-retest reliability over one week was .75. It also has good concurrent (.51) and discriminant (.25) validity. The responses were arranged in a 4 point Likert type scale, where 0 = Not at all, 1 = Mildly, but it didn't bother me much, 2 = Moderately, it wasn't pleasant at times, and 3 = Severely, it bothered me a lot. The total score is calculated by finding the sum of the 21 items. A score of 0 to 21, 22 to 35, and 36 and above indicates low, moderate and potentially concerning level of anxiety. The Bangla BAI-Y was adapted on a sample of 198 participants. BAI-Y showed coefficient alpha of .87 which indicates high internal consistency. Test-retest reliability and validity of the scale were satisfactory (Uddin, Huque, & Shimul, 2011). This scale consists of 20 items. High scores on the scale indicate high anxiety.

### **C. Demographic information sheet**

#### **2.2.6 Procedure:**

For translation and cultural validation Sousa and Rojjanasrirat (2011), prescribed guidelines were followed. Before proceeding written consent was taken from Marilyn Campbell, one of the developers.

#### ***Step 1. Translation of the SCAS (C and P version) into Bangla (Forward Translation)***

Four translators were assigned to translate the English CAWS into Bangla. They were fluent in both Bangla and English language. They have in-depth experience regarding both the culture and have a distinct background. Two translators were experts in psychological terminology and the content area of the construct. The other two were not from the arena of psychology but familiar with colloquial phrases, jargons, and idiomatic expressions. Each one was given one version of CAWS to translate.

***Step 2. Comparison of the translated versions of the scale: synthesis I***

The instructions, the items and the response format of four sets of forward-translated versions of the scale with the original scale were compared by an expert panel consisting of an independent translator, the researcher, and other two subject matter specialists. They checked ambiguities and discrepancies of words, sentences, and meanings. Few modifications were made according to the consensus regarding the translation and thus 1<sup>st</sup> draft of CAWS was prepared.

***Step 3. Blind Back Translation (Bangla to English)***

Again two sets of bilingual translators with distinct backgrounds were assigned separately to translate the Bangla CAWS to its original English language. They were completely blind to the original version. In each set one was a subject matter expert and the other one was a language expert. They produced English version of CAWS independently.

***Step 4. Comparison of two sets of back-translated versions: Synthesis II***

The back-translated four versions were again examined by the same expert panel strengthen with another research expert in the same field regarding format, wording, the grammatical structure of the sentences, the similarity in meaning, and relevance. Any ambiguities and discrepancies concerning each of the back-translations and the original scale were discussed and resolved through consensus among the panel members to derive at a pre-final version of the scale. Hence, the 2<sup>nd</sup> draft for Bangla CAWS was produced.

***Step 5. Pilot testing of the pre-final versions of the Bangla CAWS (cognitive debriefing)***

The pre-final Bangla CAWS was pilot tested among 20 Bangla medium school children to evaluate the instructions, response options, and the items of the scale for



lucidity. Each participant is asked to rate the instructions and the items using a dichotomous scale i.e. clear or unclear. The items or instructions that were marked as unclear were asked to provide suggestions on how to rewrite the statements to make the language clearer. The instructions, response format and the items that are found to be clear by at least 80% of the sample were retained and those found to be unclear by at least 20% of the sample were re-evaluated. These were scrutinized by an expert panel of 6 members consisting of the researcher, and other 5 members (two educational psychologists, two university teachers of psychology and one clinical psychologist) who were knowledgeable about the content areas of the construct and the target population. Their mother tongue was Bangla. The minimum inter-rater agreement required was 80% regarding the instructions, response format, and the items. One item was found to be unclear by 20% of the panel members which was revised and re-evaluated. Thus the newly translated and adapted Bangla CAWS was prepared.

***Step 6. Field test (Psychometric testing in a sample of the target population)***

To find out the reliability and validity of the newly translated and adapted CAWS a field test was carried out on a sample of 150 children. Discarding the incomplete responses and dropouts 130 children's filled in questionnaires were retained for further analysis.

The flowchart of the adaptation process of CAWS is presented in figure 2.1.

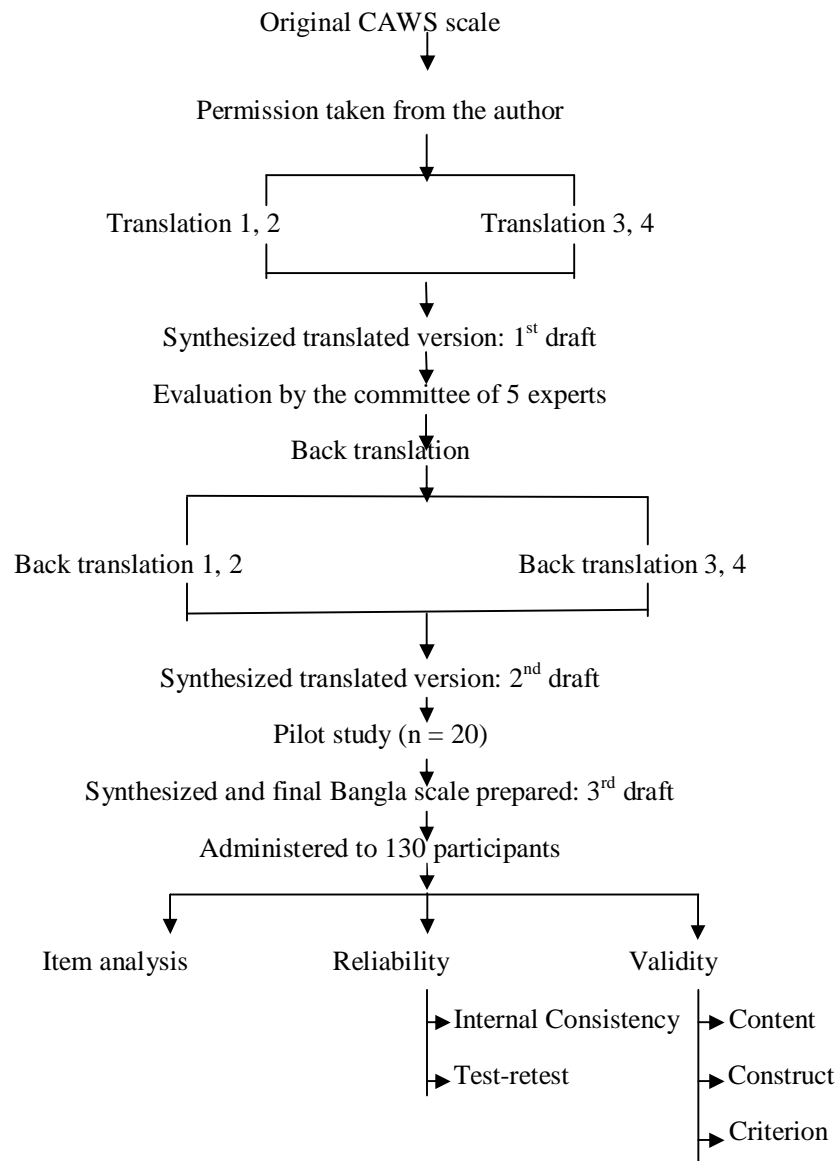


Figure 2.1: Procedure of Bangla Adaptation of CAWS

### 2.2.7 Data Collection

Data collection tool contained one demographic information sheet, the Bangla CAWS, and Bangla BAI-Y for the children. Permission was granted from the school authorities to collect data. Written consent from the parents and children was obtained before participating in the study. Items were read aloud for young and special need

children by one of the research assistants while the other assisted children where necessary. For older children they themselves filled in the questionnaires under the constant supervision of the researcher. The researcher was present during all the administration in order to assist any children who faced difficulties in completing the scales. They were verbally instructed to respond to each item by indicating how true are the statement/item for them by choosing one of the responses- never, sometimes, often and always. The researcher ensured that there is no right or wrong answers and they answer every item honestly. Approximately within 20 minutes both the questionnaires (Bangla CAWS and Bangla BAI-Y) were completed. Two weeks later Bangla CAWS was administered on the same sample (N=70). The number of participants decreased due to one school authority's withdrawal of permission to conduct the retest as they had exams.

#### **2.2.8 Data processing and analysis**

All data were analyzed by computer program SPSS version 16. The data analyses were done in several steps. At first all responses were screened manually to detect incomplete/ambiguous data. Descriptive statistics were calculated for a description of the data. (Frequency and percentage were used to describe categorical variables while median and inter-quartile range was used to depict continuous variables. As worry scores were not normally distributed (i.e. the parametric assumption of normality was not satisfied), Spearman's rank order correlation (i.e. nonparametric correlation) was used.

Item analysis was computed for selecting items for inclusion in the final scale. To determine the reliability of the Bangla CAWS, internal consistency (Cronbach Alpha) and Test-retest reliability were calculated. To determine the concurrent validity Spearman's Correlation Coefficient rho was calculated among the Bangla CAWS and the Bangla BAI-Y. To establish postdictive validity correlation between CAWS Test 2 and BAI-Y (criterion measure) was calculated. Mann-Whitney *U* test was used (instead of

independent *t*-test) to determine whether the scale significantly differentiates the level of anxieties between normal and special children.

## **2.3 Result**

### **2.3.1 Descriptive Statistics**

Correlation coefficients were determined between CAWS scores (at Test 1 and Test 2). In Test 1 for 130 sample median was found to be 11 and inter-quartile range (IQR) from 10 to 14. In Test 2 (N=70) median was 10.5 and Inter-quartile range (IQR) from 8 to 14.25.

### **2.3.2 Item analysis**

Item analysis is used to determine the quality of a test by looking at each individual item and determining statistically if they are sound. It helps to identify individual items that are not good and whether or not they should be discarded, kept, or revised.

To attain this, corrected item-total correlations were examined and presented in the table below. Cronbach Alpha was found to be 0.799. In Cronbach alpha if item deleted all 20 items except one (item no. 9) shows value equal to/less than the calculated value. Item no. 9 is found to be problematic for it showed low item-total correlation (.085) and increased Cronbach alpha (.805). The item was revised and on the basis of the judges' agreement the revised item was retained. The item analysis of the CAWS is presented in Table 2.2.

Table 2.2: *Item analysis of the Bangla CAWS*

Item	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item- Total Correlation	Cronbach's alpha if Item Deleted
Item 1	10.96	29.526	.450	.786
Item 2	11.02	28.162	.559	.778
Item 3	11.07	29.026	.420	.787
Item 4	11.46	31.227	.241	.797
Item 5	11.26	30.551	.294	.795
Item 6	11.06	30.182	.285	.796
Item 7	11.45	30.993	.278	.795
Item 8	11.07	28.825	.475	.784
Item 9	10.81	31.955	.085	.805
Item 10	11.24	29.470	.444	.786
Item 11	11.09	28.720	.557	.779
Item 12	10.95	30.470	.286	.795
Item 13	10.95	28.928	.488	.783
Item 14	11.33	30.239	.334	.792
Item 15	10.97	28.666	.523	.781
Item 16	11.30	30.646	.258	.797
Item 17	10.91	29.867	.337	.792
Item 18	11.29	30.596	.258	.797
Item 19	10.95	30.036	.311	.794
Item 20	11.02	30.000	.325	.793

### 2.3.3 Reliability

#### *Test-retest*

Test-retest reliability of Bangla CAWS with an interval of 15 days showed Spearman's rho  $r$  value of 0.858 where  $p = .001$ . This suggests the scale have high reliability over a time period.

### **2.3.4 Validity**

#### ***Content validity***

Content validity refers to the extent to which the items of a measure reflect the content of the concept that is being measured. The items of the scale measure the construct anxiety as judged by the expert panel.

#### ***Criterion-related validity:***

##### ***Concurrent validity***

In order to assess the concurrent validity of the Bangla CAWS, it was correlated with an established measure BAI-Y. The correlation coefficient was found to be 0.912 ( $p=.001$ ) in CAWS Test 1 and BAI-Y which indicates excellent correlation among the scales. Therefore, it can be said firmly that the newly developed scale measures the same construct.

##### ***Postdictive validity***

Another kind of criterion validity is postdictive validity. It measures whether the test is a valid measure of something that happened before i.e. it correlates between the present administered test with a criterion measure that took place in past.

Since CAWS Test 2 was administered after BAI-Y (criterion measure), the correlation coefficient between them was a measure of postdictive validity. In case of CAWS Test 2 and BAI-Y calculated value of  $r$  was 0.806 ( $p=.001$ ) which was not excellent as the previous value. In the first case the sample size was 130, while in the second case sample size was reduced to 70. One school withdrew their permission to conduct retest because of exam preparation. It may have an impact on the result.

### **2.3.5 Mann-Whitney *U* test**

The Mann–Whitney *U* test is a nonparametric test of the null hypothesis that it is equally likely that a randomly selected value from one sample will be less than or greater than a randomly selected value from a second sample.

Mann-Whitney test indicates that worry score is greater for the special children (Mdn = 17, IQR= 20-12) than the normal children (Mdn =9, IQR= 12-7),  $U= 608.50$  at  $p =.001$ .

## **2.4 Discussion**

The present study adapted a 20-item self report instrument named CAWS to measure worry in children. Item analyses indicated that all the items except one (item no. 9) were good items. In the original English version scale, item no. 9 was “dying”. At first, it was translated as “mara jabo”. Considering item analysis findings, judges rephrased it to “ami more jabo” and agreed to keep it in the main scale.

Studies indicate that Cronbach’s alpha of at least 0.80 is recommended for individual purposes, whereas for research purpose reliabilities of 0.70 or higher is adequate (Nauta et al., 1978).The internal consistency (Cronbach’s alpha) of the total Bangla version scale was .799 which met the criteria of both individual and research purposes and is very similar (0.89) to the original total scale (Campbell & Rapee, 1994) and other studies (Szabó, 2009). Temporal stability of Bangla CAWS was 0.858 which also resonates with the original scale (Campbell & Rapee,1994). Concurrent (.912) and postdictive validity (.806) of the Bangla scale were excellent too. Low validity coefficient for postdictive validity might be due to reduced sample size resulting from the non-participation of a sampled school in the retest phase.

The adapted scale distinguished between the level of anxiety of normal/community and special need children indicating that it has good sensitivity to varying levels of anxiety severity.

#### **2.4.1 Limitations and future directions**

One limitation of the present study was that the Bangla version scale was not factor analyzed. However, the main purpose of adapting the scale was to investigate the effectiveness of an intervention program for anxiety disorders which did not necessitate examining the factor structure of the scale. Rather, the psychometric properties of the Bangla CAWS suggest that professionals and the researchers can use the scale to assess children's overall level of anxiety in Bangladeshi context. Moreover, further studies can be carried out with large representative sample including rural and urban, normal and clinically diagnosed children.



## **Chapter 3**

### **Adaptation of Spence Children's Anxiety Scale-Child version (SCAS; Spence, 1998)**

#### **3.1 Introduction**

As described in Chapter 2, a number of self-report measures are used in clinical investigation and research studies to assess anxiety in children and adolescents. Majority of these are developed in Western countries where English is the mother tongue. The present study adapted a self-report measure named the Spence Children's Anxiety Scale to measure the anxiety symptoms of the children living in Bangladesh. It has shown high internal consistency (0.92) for the total score, exhibited reliability (0.60) and high convergent validity (0.71) (SCAS; Spence, 1998). There are some advantages in using this scale. First it contains items that reflect the main features of the diagnostic classification of Anxiety Disorders of DSM IV (APA, 2000). Second, the measure was developed directly from child samples rather than being modified from similar adult measures. Third, the measure is available on internet, free of charge by the developer, which is an important consideration for a researcher from a developing country. Fourth, the measure has shown strong psychometric properties in both clinical and community samples. Fifth, SCAS has both child and parent versions which allows to measure parent-child agreement whereby, child's self-report of anxiety can be validated by their parents' ratings. It is often recommended to take multi-informants to increase the reliability and validity of the information obtained (Kendall et al., 2007). Sixth, it has been adapted in different languages in more than 33 countries, which the present author found very lucrative. Finally, the psychometric properties of the Bangla SCAS short version are already available (Deeba et al., 2015) which can be used to validate the full form adapted in the present study.

The SCAS has six subscales measuring panic-agoraphobia, separation anxiety, social phobia, physical injury fears, obsessive-compulsive, and generalized anxiety (Spence, 1998). Given that only the total scale score was required to assess the effectiveness of the intervention (see Chapter 6), factor analysis was not carried out for the Bangla version of the scale.

A brief description of the SCAS is provided for better understanding of the said scale. The test-retest reliability over a six-month period was acceptable in a community sample. Spence (1998) reported the SCAS show both convergent (with another child anxiety measure, namely the RCMAS; Reynolds & Richmond, 1978) and discriminative validity.

Later on, a clinical sample of children from Australia and Netherlands diagnosed with various types of anxiety disorders was found to score high on particular sub-scales corresponding to their specific anxiety disorder (Nauta et al., 2004). The full version of the SCAS has exhibited high internal consistency and its psychometric properties have been established across various populations, for example, Australian (Spence, 1998), Dutch (Muris et al., 2000), Spanish (Barceló, Balle, Feliú, & Banda, 2005), Hellenic (Mellon & Moutavelis, 2007a), German and Japanese (Essau et al., 2004), Brazilian (DeSousa, Petersen, Behs, Manfro, & Koller, 2012), including a few Asian countries, for example, Malaysia (Ahmadi, Mustaffa, Haghdoost, Khan, & Latif, 2015), Mainland Chinese (Wang, Meng, Liu, & Liu, 2016), Iran (Essau et al., 2012b) and South Africa (Cecilia A. Essau, Muris, & Ederer, 2002) and many more. Factor analyses across different studies reproduced the six factors in the full measure. Cronbach's alpha for the full scale ranges from .90 to .93 whereas, the sub-scales were as follows: .75-.76 for Obsessive Compulsive; .72-.74 for Social Phobia; .80-.83 for Panic Anxiety; .77-.81 for General Anxiety; and .62-.74 for Separation Anxiety (Muris et al., 2000) Spence, 1998; Spence,

Barrett, & Turner, 2003). The test–retest reliability ranges from .60 to .63 (Spence, 1998; Spence et al., 2003). Different types of validity have also been shown to be appropriate in different studies conducted across more than 30 countries. Therefore, the SCAS was rightly chosen for the research purpose.

### **3.1.1 Objective**

The objective of the present study was to adapt the Spence Children’s Anxiety Scale (SCAS) to measure anxiety among primary school children.

## **3.2 Method**

### **3.2.1 Participants**

Different schools of Dhaka city was approached for selecting the participants. At initial stage nearly 250 participants agreed to take part. Finally school going 140 children participated in the study. The participants were from class one to ten and their age range was from 6 to 14 years. Among them 64 were boys and the rest 76 were girls. The average age of the boys and girls were 10.16 (SD=2.331) and 10 (SD=2.274) years respectively.

**3.2.2 Sampling technique:** Convenience sampling technique was pursued to select the participants i.e. those who voluntarily agreed to participant in the study. Inclusion criteria for the participants were living with parents. Only institutions that gave consent to the research were included.

**3.2.3 Recruitment:** Different schools were approached for the conduction of the study. Permission letter from the Department of Educational and Counselling Psychology was taken to the school authorities. Upon the approval of the school principals, parents and school children were approached and they were briefed about the study. Written consent forms were read out. Finally consent form was signed by the parents and children to

participate in the study. For the analysis those children and adolescents who did not respond to all items on each questionnaire were excluded.

**3.2.4 Ethical consideration:** Ethical approval was granted by the departmental Ethic Review Committee and the concerned university Ethical Review Committee for Human Volunteer.

### **3.2.5 Measures**

#### **A. Spence Children Anxiety Scale-Child version (SCAS) (Spence 1998)**

This is a widely used and adapted version of anxiety scale. It has both child/self-report and parent version. In the child version items measure symptoms of DSM-IV anxiety disorders in children and adolescents such as; specific anxiety symptoms relating to social phobia, separation anxiety, panic attack/agoraphobia, obsessive-compulsive disorder, general anxiety disorder and physical injury fears. In the child version there is 45 items among these 7 are filler items (positive item) including one open-ended question to report any additional fear not considered in the items. These 7 items (11, 17, 26, 31, 38, 39, and 43) are non-scored i.e. they do not factor in the final or subscale scores. The rest 38 items are arranged into six domains of anxiety corresponding to the disorders- Separation anxiety (item number 5, 8, 12, 15, 16, 44), Social phobia (6, 7, 9, 10, 29, 35), Obsessive-compulsive disorder (14, 19, 27, 40, 41, 42), Panic disorder/agoraphobia (13, 21, 28, 30, 32, 34, 36, 37, 39), Personal injury fears (2, 18, 23, 25, 33), Generalized anxiety (1, 3, 4, 20, 22, 24). The scale was originally designed for children from the ages 8 to 12 years old, later on it has shown high validity and reliability with 12 to 18 years old children and adolescents (Nauta et al., 2003; Spence, 1998).

A short form is also available in Bangla with 20 items. SCAS has sound psychometric properties. Internal consistency of the total score of SCAS was found to be

extremely high (Cronbach's  $\alpha=.93$ ) for the total score confirming that the items of the scale are clearly measuring the same construct. Internal reliability coefficients for total score for boys of 8-11 and 12-15 years showed .92 and .93 respectively. On the other hand, coefficients .93 and .92 were found for girls of 8-11 and 12-15 years respectively (Spence, 1998). Test-retest reliability of children aged 8-12 showed reliability coefficient of .60 for total score over a 6 month period. This indicates reasonably high reliability (Spence, 1998). Similar test-retest findings (.63) were found for 12-14 year olds with an interval of 12 weeks (Spence et al 2003). It is a 4 point rating scale. Each item on the scale addresses the frequency of certain anxiety symptoms, measured on a 0-3 from "never," "sometimes," "often," to "always." A maximum score of 114 is possible on the SCAS scale. On the child-reported SCAS for boys, age 8 to 11, a total score of 40 and above and for girls of the same age 50 and above is classified as elevated levels of anxiety. For boys and girls ages 12 to 15, a total score of 33 and above or 39 and above is classified as elevated, respectively.

#### **B. Spence Children Anxiety Scale- Parent version (SCAS-P; Spence 1999)**

The SCAS also has a version developed to assess children's anxiety symptoms based on their parent's report (Nauta et al., 2004). Similar to the child version, the parent version (38 items) measures the symptoms of DSM-IV anxiety disorders in children and adolescents. There are no filler items (positive item) but one open-ended question to report any additional fear not considered in the items. This question is not scored. The rest 38 items are arranged into six domains of anxiety as specific anxiety symptoms relating to social phobia, separation anxiety, panic attack/agoraphobia, obsessive-compulsive disorder, generalized anxiety disorder and physical injury fears. Items referring to an internal state (e.g. item 4, *I feel afraid*) were rephrased into observable behavior for parents (e.g. *My child complains of feeling afraid*). The positive filler items were not

included in the SCAS-P, leaving 38 items in the scale on the same 0 (never) to 3 (always) scale. Although parent-reported version has the same subscales as child-reported SCAS, different questions correspond to different subscales. For the parent SCAS: Separation anxiety items are 5, 8, 11, 14, 15, 38; Social phobia items 6, 7, 9, 10, 26, 31; Obsessive-compulsive disorder items: 13, 17, 24, 35, 36, 37; Panic disorder/agoraphobia items : 12, 19, 25, 27, 28, 30, 32, 33, 34; Personal injury fears items : 2, 16, 21, 23, 29 and Generalized anxiety items: 1, 3, 4, 18, 20, 22.

The scale was meant for children of 8 to 15 years. Later on it was extended from 6 to 18 years. It is a 4 point rating scale with four response options namely "never," "sometimes," often," and " always" scored as 0, 1, 2, and 3 respectively. Each item on the scale addresses the frequency of certain anxiety symptoms. Parents are asked to rate their child's level of anxiety regarding what the items indicated. A maximum score of 114 is possible on the scale. For 6 to 11 years old boys and girls, a total score  $\geq 31.4$  and  $\geq 33$  suggests an anxiety disorder, respectively. For boys and girls aged between 12-18 years, an anxiety disorder is likely to be present if their total SCAS-P score is  $\geq 30.1$  and  $\geq 32.2$  respectively (<http://www.scaswebsite.com/>).

The SCAS-P has sound psychometric properties as reported by the studies in Japan (Ishikawa et al., 2014), Australia and Netherlands (Nauta et al., 2004), and China (Li, Delvecchio, Di Riso, Nie, & Lis, 2016). The alpha for the total scale was high in both healthy participants and those with anxiety disorder ( $\alpha = 0.89$ ), which indicate high internal homogeneity of SCAS-P (Nauta et al., 2004).

Internal consistent reliabilities of the subscales were satisfactory in both the clinical and normal control groups. Reliability coefficients that were corrected for scale length ranged from 0.81 to 0.90 in the normal group and from 0.83 to 0.92 in the clinical

group (Nauta et al., 2004). This provides evidence for internal consistency of the subscales, supporting their use not only for research purposes, but also for clinical practice (Nunnally & Bernstein, 1978). The SCAS-P also showed good convergent validity, both with another parent measure (Child Behavior Check List-internalizing) and with child version of SCAS (Nauta et al., 2004).

To determine convergent and divergent validity of the SCAS-P, the total score was correlated with other parent and child reports. The SCAS-P total scale had significant correlation with both the CBCL-internalizing (0.55 in the anxiety disordered group, 0.59 in the normal control group) and externalizing subscales (0.33 in the anxiety disordered group, 0.34 in the normal control group) (Nauta et al., 2004).

**C. Beck Anxiety Inventory for Youth (BAI-Y)** as mentioned in chapter 2.

**D. Children and Adolescent Worry Scale (CAWS)** as mentioned in chapter 2.

**E. Demographic information sheet**

### **3.2.6 Procedure:**

Sousa and Rojjanasrirat (2011) prescribed guidelines was followed for translation and cultural validation of the SCAS. Before proceeding written consent was taken from Susan H. Spence, the author.

#### ***Step 1. Translation of the SCAS into Bangla (Forward Translation)***

Four translators were assigned to translate the English SCAS into Bangla. They are fluent in both Bangla and English language. They have in-depth experience regarding both the culture and have distinct background. Two translators were expert in psychological terminology and the content area of the construct. Rest two was not from the arena of

psychology. They were familiar with colloquial phrases, jargons and idiomatic expressions. Each one was given one version of SCAS to translate it in Bangla.

***Step 2. Comparison of the translated versions of the scale: synthesis I***

Bangla translated versions of the scale with the original scale were compared regarding the instructions, the items and the response format by an expert panel consisting of an independent translator, the researcher and other two subject matter specialists. Ambiguities and discrepancies of words, sentences and meanings were checked minutely. Few modifications were made according to consensus regarding the translations and thus 1<sup>st</sup> draft of SCAS was prepared.

***Step 3. Blind Back Translation (Bangla to English)***

Again two bilingual translators with distinct backgrounds were assigned separately to translate the Bangla SCAS to its original English language. They were completely blind to the original version. In each set one was a subject matter expert and the other one was a language expert. They produced English version of SCAS independently.

***Step 4. Comparison of two sets of back-translated versions: Synthesis II***

The two back translated versions were again examined by the same expert panel strengthen with another research expert in the same field regarding format, wording, grammatical structure of the sentences, similarity in meaning, and relevance. Any ambiguities and discrepancies concerning each of the two back-translations and the original scale were discussed and resolved by the panel members in order to obtain a pre-final version of the scale. Hence, the 2<sup>nd</sup> draft for each SCAS was produced.



***Step 5. Pilot testing of the pre-final version of the Bangla SCAS (cognitive debriefing)***

The pre-final Bangla SCAS was pilot tested among 20 Bangla medium school children to evaluate the instructions, response format, and the items of the scale for checking ambiguity, difficulty level, and understandability. Each participant was asked to rate the instructions and the items using a dichotomous scale i.e. clear or unclear. The items or instructions that were marked as unclear were asked to provide suggestions on how to rewrite the statements to make the language clearer. The instructions, response format and the items that are found to be clear by at least 80% of the children were retained and those found to be unclear by at least 20% of the children were re-evaluated. These were scrutinized by an expert panel of 6 members consisting of the researcher, and other 5 members (two educational psychologists, two university teachers of psychology and one language expert). Except the language expert all were knowledgeable about the content areas of the construct and the target population. Their mother tongue was Bangla. The minimum inter-rater agreement required was 80% regarding the instructions, response format and the items. Two items was found to be unclear by 20% of the panel members which was revised and re-evaluated. Thus the newly translated and adapted Bangla SCAS was prepared.

***Step 6. Field test (Psychometric testing in a sample of the target population)***

To find out the reliability and validity of the newly translated and adapted child version of the scale, a field test was carried out on a sample of nearly 200 children and on one of their parents. Discarding the incomplete responses and dropouts 140 children and their parents' filled in questionnaires were retained for further analysis.

### **3.2.7. Data Collection**

Data collection tool contained one demographic information sheet, The Bangla SCAS, Bangla CAWS and Bangla BAI-Y for the children, and Bangla SCAS-P for parents. Permission was granted from the school authorities to collect data. Written consent from the parents and children was obtained before participating in the study. Items were read aloud for young children by one of the research assistants while the other assisted children where necessary. For older children they themselves filled in the questionnaires under the constant supervision of the researcher. The researcher was present during all the administration in order to assist any children who faced difficulties in completing the scales. They were verbally instructed to respond to each item by indicating how true are the statement/item for them by choosing one of the responses- never, sometimes, often and always. The researcher ensured that there is no right or wrong answers and they answer every item honestly. Approximately within 20 minutes the questionnaires were completed in case of the children. Parents took about 10 minutes. Some parents took the questionnaires and returned it on a sealed envelope next day or two. Two weeks later SCAS was administered on the same sample (N=137) along with the Bangla BAI-Y and Bangla CAWS.

### **3.2.8 Data processing and analysis**

All data were analyzed by computer program SPSS version 16. The data analyses were done in several steps. At first all responses were screened manually to detect incomplete/ambiguous data. Descriptive statistics were calculated for a description of the data. (Frequency and percentage were used to describe categorical variables while median and inter-quartile range was used to depict continuous variables. Due to non-normality of data and as none of the data transformation techniques could be used in order to normalize the data Spearman's rank order correlation (i.e. nonparametric correlation) was used.

Item analysis was conducted. To determine the reliability of the Bangla SCAS internal consistency (Cronbach alpha) and Test-retest reliability were calculated. To determine the concurrent validity Spearman's Correlation Coefficient rho was calculated among the Bangla SCAS, the Bangla CAWS and the Bangla BAI-Y. Also, the correlation coefficient was calculated between SCAS-P and SCAS to check the convergent validity.

### **3.3 Results**

#### **3.3.1. Descriptive Statistics of SCAS**

Correlation coefficients were determined between SCAS child scores (at Test 1 and Test 2). At Test 1 for 140 participants median was found to be 32 and Percentiles inter-quartile range (IQR) from 42.75 to 22. At Test 2 (N=137) median was 32 and Inter-quartile range (IQR) from 42 to 24.

#### **3.3.2. Item analysis**

Cronbach alpha was found to be 0.855. Corrected item-total correlations were examined and presented in Table 3.1. In Cronbach alpha if item deleted all 38 items of the scale shows value equal to/less than the calculated value (range .846- .854). Thus all the items of the scale showed excellent internal consistency. Therefore, no item was excluded. Item analysis of the SCAS is presented in Table 3.1 (see next page).

Table 3.1: *Corrected Item-Total Correlation and Cronbach's alpha if Item Deleted of SCAS*

Item	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's alpha if Item Deleted
item1	31.99	205.691	.296	.853
item2	31.48	203.949	.272	.854
item3	32.27	207.681	.228	.854
item4	31.87	207.753	.211	.854
item5	31.49	198.367	.400	.850
item6	32.26	202.984	.397	.851
item7	31.87	199.422	.392	.850
item8	31.45	197.904	.415	.850
item9	32.36	201.699	.478	.849
item10	32.21	204.831	.332	.852
item11	32.01	202.906	.336	.852
item12	32.45	206.120	.354	.852
item13	31.79	206.525	.224	.854
item14	31.16	199.994	.349	.852
item15	32.46	204.524	.345	.852
item16	31.18	195.989	.438	.849
item17	32.03	205.496	.267	.853
item18	31.77	199.199	.438	.849
item19	32.46	208.049	.247	.854
item20	32.10	204.450	.323	.852
item21	31.91	204.862	.229	.855
item22	32.02	201.187	.490	.849
item23	32.06	199.284	.444	.849
item24	31.85	201.510	.354	.851
item25	32.19	204.656	.306	.852
item26	32.30	205.247	.352	.852
item27	32.59	208.934	.238	.854
item28	32.34	206.570	.251	.854
item29	31.32	199.471	.383	.851
item30	32.46	207.675	.245	.854
item31	32.42	205.368	.372	.851
item32	32.49	206.410	.356	.852
item33	32.34	205.133	.337	.852
item34	31.64	194.936	.530	.846
item35	31.77	205.616	.220	.855
item36	32.14	207.461	.201	.855
item37	31.94	199.249	.463	.849
item38	31.50	198.266	.401	.850

### **3.3.3 Reliability**

#### ***Test-retest reliability***

Satisfactory reliability is a basic and indispensable requirement for a measurement tool. Test-retest of the SCAS with an interval of 15 days showed Spearman's rho r value of 0.827 where  $p = .001$ .

### **3.3.4. Validity**

#### ***Content validity***

A measurement has content validity when its items cover all aspects of the construct being measured. In the present study the construct being measured is anxiety. The judges all agreed on the aspect that the items cover all the dimensions of the anxiety.

#### ***Construct validity***

Construct validity is the degree to which a test measures the construct that it is supposed to measure. In other words, how well does the SCAS measure the theoretical concept of anxiety? There are two necessary components of construct validity: *convergent* and *discriminant* validity. In the present study only convergent validity was determined.

#### ***Convergent validity***

Convergent validity refers to the degree to which scores on a particular test correlate with (or are related to) scores on other tests that are designed to assess the same construct. In other words, it takes two measures that are supposed to be measuring the same construct and shows that they are related.

To calculate convergent validity SCAS scores were correlated with SCAS-P scores in both Test 1 and Test 2 (retest). Spearman correlation coefficient for SCAS Test 1 scores

with SCAS-P Test 1 scores shows r value of 0.029 ( $p = .738$ ) which was not significant. Rho value between SCAS Test 1 and SCAS-P Test 2 is 0.194 ( $p = .023$ ). Again the rho value of SCAS Test 2 with both SCAS-P Test 1 and Test 2 was found to be 0.257 ( $p = .002$ ) and 0.443 ( $p = .001$ ) respectively. Except the first one, all were significant.

### **Criterion validity**

Criterion validity measures how well one measure predicts an outcome for another measure. A test has this type of validity if it is useful for predicting performance or behavior in another situation (past, present, or future). There are three types of criterion validity- concurrent validity, predictive validity and postdictive validity. If a measure predicts what it is supposed to predict then it is known as predictive validity. It refers to when scores from predictor measure are taken first and then later on the criterion data is collected. On the other hand, when the predictor and the criterion data are collected at the same time it is known as concurrent validity. It is a measure of how well a particular test correlates with a previously validated measure. Again when a test is a valid measure of a test which took place earlier it is called postdictive validity.

### ***Concurrent validity***

To find out the concurrent validity rho were calculated for both SCAS with BAI-Y scores. The following results were found-

Between SCAS Test 1 and BAI-Y,  $r = 0.963, p = .001$

Between SCAS Test 2 and BAI-Y,  $r = 0.856, p = .001$

The results indicated excellent correlation between the scales.

### **Other validity evidence**

Spearman's rho was calculated between the Bangla SCAS and the Bangla CAWS.

Both the correlations were found to be significant.

Between SCAS Test 1 and CAWS,  $r = 0.933$ ,  $p = .001$

Between SCAS Test 2 and CAWS,  $r = 0.806$ ,  $p = .001$

Because both the scales were adapted at about the same time, the correlation coefficients between them do not strictly fit any of the validity types, though they seem like concurrent validity evidence. It was expected that participants' scores on both the scales would be correlated as they measure similar construct, which indeed was the case (i.e. they were significantly correlated).

### **3.4. Discussion**

The SCAS child version was adapted in this study for using it in Bangladesh. A standard procedure (Soussa & Rojjanasrirat, 2011) was followed for the cross cultural translation and adaptation. Item analyses were carried out, and the reliability and validity of the Bangla version scale were determined.

Item analysis indicated all the 38 items of the Bangla version scale as good. The scale also showed high internal consistent reliability (Cronbach's alpha = .86) although studies recommended that Cronbach's alpha of at least 0.80 is required, whereas for research purpose reliabilities of 0.70 or higher will be adequate (Nauta et al., 1978). The present alpha value is very close to the original scale (.92), Bangla SCAS short form (0.84 for the total scale and 0.80 for community children (Deeba et al., 2015), and other validation studies (Spence, 1998; Muris, 2000, 2002; Spence, Barratt & Turner 2003). Moreover, German, Greek, Brazilian, Brazilian-Portugese, Danish, and Chinese adaptation also

showed good internal consistency, supporting the present findings (Essau, Muris, & Ederer, 2002, p. 20; DeSousa et al., 2014; Essau et al., 2011; DeSousa et al., 2012; Zhao, Xing, & Wang, 2012; Arendt, Hougaard, & Thastum, 2014).

The Bangla SCAS had high temporal stability ( $r = .83$  at two weeks interval) which is comparable to the original scale where test-retest reliability coefficients were .60 and .63 at six-month and 12-week intervals respectively (Spence, 1998; Barratt & Turner 2003), and with the Bangla SCAS short form where the test-retest reliability coefficient was 0.80 at the interval of 3.5 weeks (Deeba et al., 2015).

Subject matter experts ensured the content validity of the Bangla version scale. Correlation between SCAS and SCAS-P indicated the convergent validity of the adapted scale. The coefficients were low and inconsistent comprising of both significant and non-significant findings. The lack of agreement between parent and child reports was also reported in other studies, sometimes as low as 0.25 correlations (Achenbach, McConaughy, & Howell, 1987; De Los Reyes & Kazdin, 2005). It is likely that parents fail to detect their children's anxiety as anxiety is an internalizing disorder and children tend to keep their worries inside them. Due to lack of awareness of their child's symptoms some parents may under-report or provide socially desirable answers. Conversely, parents who are prone to anxiety themselves may over report their child's anxiety symptoms. This perhaps lowers the agreement between them. Indeed, parent-child agreement becomes larger when the behavior is observable (March et al., 1997), and smaller for internalizing symptoms like anxiety and depression in comparison to externalizing behavior (Rey, Schrader, Morris-Yates, 1992). The concurrent validity evidence of the Bangla SCAS was excellent. In two separate administrations correlation coefficients between SCAS and the Bangla BAI-Y were .96 and .86 respectively ( $ps = .01$ ). The correlation coefficients



between SCAS and CAWS were also excellent ( $r_s = .93$  and  $.81$  at two separate administrations respectively,  $p = .001$ ).

### **3.4.1 Limitations and future directions**

Though the adapted Bangla version of the SCAS has excellent psychometric properties, further studies should be carried out with a representative sample including both healthy children and children with anxiety disorders, the findings of which can be used to develop a norm to diagnose children in clinical settings. Future studies should also investigate the discriminant validity of the scale and the psychometric properties of its subscales. One limitation of the adaptation study was that the Bangla version scale was not factor analyzed. However, the main purpose of adapting the scale was to investigate the effectiveness of an intervention program for anxiety disorders which did not necessitate examining the factor structure of the scale. Rather, the psychometric properties of the Bangla scale suggest that professionals and the researchers can use the scale to assess children's overall level of anxiety in Bangladeshi context.

## **Chapter 4**

### **Adaptation of the Parent version of the Spence Children Anxiety Scale (SCAS-P)**

#### **4.1 Introduction**

The SCAS parent version (Spence, 1999) is an upward extension of the original SCAS meant for children. The items of the SCAS-P were formulated as closely as possible to the corresponding items of the child version of the SCAS (Spence, 1998). This is a good source of getting information from the parents regarding their child's symptoms of anxiety. Some academics consider that self-report is ample to assess the internalizing problems such as anxiety symptoms in children and adolescents because they know their own emotions better than others. Others, suggest to gather information from multiple sources, specially from parents which may help to assess children's emotional problems precisely (DiBartolo, Albano, & Barlow, 1998; Rapee, Barrett, Dadds, & Evans, 1994). This knowledge led to the development of the parent-version of the SCAS (SCAS-P) with Australian and Dutch samples (Nauta et al., 2004) and since its development, it has been translated into different languages, including Chinese and Italian (Li et al., 2016), Brazilian-Portugese, (DeSousa et al., 2014), Danish (Arendt, Hougaard, Thastum, 2014), and Japanese (Ishikawa et al., 2014), and validated in some countries and regions, including Hong Kong (Li, Lau, & Au, 2011) and North America (Achenbach, 2006). The SCAS-P is recommended as a screening tool for normal children and as a diagnostic measure in clinical setting (Nauta et al., 2004).

In summary, the SCAS-P represents a relatively reliable (Cronbach's alpha ranged between .80 and .92) and valid instrument for the assessment of anxiety among children and adolescents, based on the data from Australia and Netherlands, especially when combined with the child version of the SCAS (Nauta et al., 2004).

Due to the potential value of a parental questionnaire assessing the child’s anxiety, the aim of the present study was to adapt and validate the parent version of the Spence Children Anxiety Scale (SCAS-P) to use it in Bangladesh.

#### 4.1.1 Objective

The objective of the present study was to adapt the Spence Children’s Anxiety Scale (SCAS) to measure anxiety among primary school children.

### 4.2 Method

#### 4.2.1 Participants

The participants of the present study were the parents of the children who took part in the Bangla SCAS adaptation study. Only one parent of the child respondents was recruited for this study. Those parents were chosen who take their children to schools. Total 140 parents from different socio-economic backgrounds were selected. Among them 121 were mothers and rest were fathers. The fathers’ age range was from 30 to 50 years (mean age = 38.68,  $SD=5.548$ ). The mothers’ age range was from 25 to 55 years (mean age = 35.64,  $SD= 6.109$ ). The following table presents the distribution of parents according to their educational qualification.

Table 4.1: *Frequency and percent of the parents regarding their educational qualification*

Educational Qualification	Frequency	Percent
SSC	54	38.6
HSC	38	27.1
Graduation	27	19.3
Post Graduation	21	15
Total	140	100

#### **4.2.2 Sampling technique:**

Convenience sampling technique was used to select the participants, i.e. those who voluntarily agreed to participate in the study along with their one child.

**4.2.3 Recruitment:** Different schools were approached for the conduction of the study. An official letter from the Department of the Educational and Counselling Psychology (DECP), University of Dhaka was given to the school authorities for their approval for the study. Upon the approval of the school principals, parents and school children were approached and they were briefed about the study. Finally, a consent form was signed by the parents who participated in the study.

**4.2.4 Ethical consideration:** Ethical approval was granted by the DECP Ethic Review committee and the concerned university Ethical Review Committee for Human Volunteer.

#### **4.2.5 Measures**

##### **A. Spence Children Anxiety Scale- Parent version (SCAS-P; Spence 1999)**

The SCAS also has a version developed to assess children's anxiety symptoms based on their parent's report (Nauta et al., 2004). Similar to the child version, the parent version (38 items) measures the symptoms of DSM-IV anxiety disorders in children and adolescents. There are no filler items (positive item) but one open-ended question to report any additional fear not considered in the items. This question is not scored. The rest 38 items are arranged into six domains of anxiety as specific anxiety symptoms relating to social phobia, separation anxiety, panic attack/agoraphobia, obsessive-compulsive disorder, general anxiety disorder and physical injury fears. Items referring to an internal state (e.g. item 4, I feel afraid) were rephrased into observable behavior for parents (e.g. My child complains of feeling afraid). The positive filler items were not included in the

SCAS-P, leaving 38 items in the scale on the same 0 (never) to 3 (always) scale. Although parent-reported version has the same subscales as child-reported SCAS, different questions correspond to different subscales. For the parent SCAS: Separation anxiety items are 5, 8, 11, 14, 15, 38; Social phobia items 6, 7, 9, 10, 26, 31; Obsessive-compulsive disorder items : 13, 17, 24, 35, 36, 37; Panic disorder/agoraphobia items : 12, 19, 25, 27, 28, 30, 32, 33, 34; Personal injury fears items : 2, 16, 21, 23, 29 and Generalized anxiety items: 1, 3, 4, 18, 20, 22.

The scale was meant for children of 8 to 15 years. Later on it was extended from 6 to 18 years. It is a 4 point rating scale with four response options namely "never," "sometimes," often," and " always" scored as 0, 1, 2, and 3 respectively. Each item on the scale addresses the frequency of certain anxiety symptoms. Parents are asked to rate their child's level of anxiety regarding what the items indicate. A maximum score of 114 is possible on the scale. For 6 to 11 years old boys and girls, a total score  $\geq 31.4$  and  $\geq 33$  suggests an anxiety disorder, respectively. For boys and girls aged between 12-18 years, an anxiety disorder is likely to be present if their total SCAS-P score is  $\geq 30.1$  and  $\geq 32.2$  respectively (<http://www.scaswebsite.com/>).

The SCAS-P has sound psychometric properties as reported by the studies in Japan (Ishikawa et al., 2014), Australia and Netherlands (Nauta et al., 2004), and China (Li et al., 2016). The alpha for the total scale was high in both healthy participants and those with anxiety disorder ( $\alpha = 0.89$ ), which indicates high internal homogeneity of SCAS-P (Nauta et al., 2004).

Internal consistent reliabilities of the subscales were satisfactory in both the clinical and normal control groups. Reliability coefficients for scale length ranged from 0.81 to 0.90 in the normal group and from 0.83 to 0.92 in the clinical group (Nauta et al.,

2004). This provides evidence for internal consistency of the subscales, supporting their use not only for research purposes, but also for clinical practice (Nunnally & Bernstein, 1978). The SCAS-P also showed good convergent validity, both with another parent measure (Child Behavior Check List-internalizing) and with child version of SCAS (Nauta et al., 2004).

To determine convergent and divergent validity of the SCAS-P, the total score was correlated with other parent and child reports. The SCAS-P total scale had significant correlation with both the CBCL-internalizing (0.55 in the anxiety disordered group, 0.59 in the normal control group) and -externalizing subscales (0.33 in the anxiety disordered group, 0.34 in the normal control group) (Nauta et al., 2004).

#### **B. Spence Children Anxiety Scale (SCAS):**

The Spence Children's Anxiety Scale (SCAS) (Spence, 1998); (Spence, Barrett, & Turner, 2003), is a promising self-report measure which was developed to assess multiple anxiety symptoms in nonclinical children and adolescents according to the diagnostic criteria of DSM-IV (American Psychiatric Association, 1994). This measure has been worldwide used to assess children's and adolescents' anxiety symptoms (Essau, Leung, Conradt, Cheng, & Wong, 2008; Essau, Sasagawa, Anastassiou-Hadjicharalambous, Guzmán, & Ollendick, 2011; Ishikawa, Sato, & Sasagawa, 2009; Mellon & Moutavelis, 2007b; Zhao et al., 2012).

**Children and Adolescent Worry Scale (CAWS):** Detail description is given in chapter 2.

**4.2.6 Procedure:**

Similar to the procedure followed in SCAS child version. Only different translators were given the SCAS-P version. The flowchart of the adaptation process of SCAS-P is presented in figure 4.1.

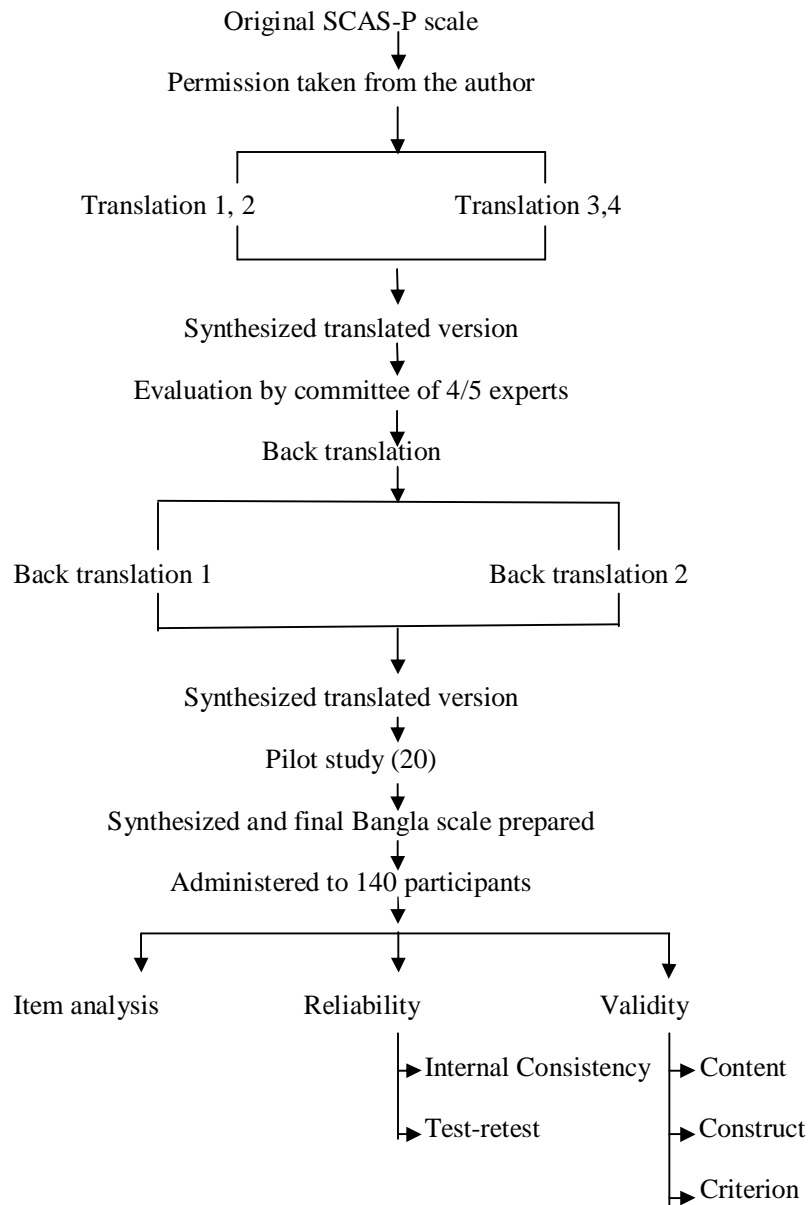


Figure 4.1: Procedure of Bangla Adaptation of SCAS-P

#### **4.2.7 Data Collection**

Data collection tools contained one demographic information sheet, Bangla SCAS, and Bangla CAWS for children and Bangla SCAS-P for parents. Permission from school authorities and written consent from parents were obtained to carry out the study and collect data. They were verbally instructed to respond to each item by indicating how true the statement/item is for them by choosing one of the four possible responses including never, sometimes, often and always. The researcher ensured that there was no right or wrong answers and that they would answer every item honestly keeping in mind the child. Approximately within 15 minutes, the questionnaires were completed. Parents took about 10 minutes. Some parents took the questionnaires and returned it in a sealed envelope within a day or two. Two weeks later, the SCAS-P was administered on the same sample ( $N=137$ ) along with the Bangla CAWS.

#### **4.2.8 Data processing and analysis**

All data were analyzed by the computer program SPSS version 16. The data analyses were done in several steps. First all responses were screened manually to detect incomplete/ambiguous data. Descriptive statistics were calculated for a description of the data. Frequency and percentage were used to describe categorical variables. Median and inter-quartile range were used to depict continuous variables when the parametric assumptions were violated. Spearman's rank order correlation (i.e. nonparametric correlation) was used to calculate relationships between SCAS child scores at Test 1 and Test 2 as data were non-normal and none of the data transformation techniques corrected the problem.

Item analysis was conducted to determine the quality of the items. The reliability of the Bangla SCAS-P was ascertained by calculating internal consistency (Cronbach's



alpha) and test-retest reliability. To determine the concurrent validity, Spearman's correlation coefficient was calculated between Bangla SCAS-C and the Bangla CAWS. Also correlation coefficient was calculated between SCAS-P and SCAS-C to check the convergent validity of the scale.

### **4.3. Results**

#### **4.3.1 Descriptive Statistics of SCAS-P**

The median of SCAS-P score at Test 1 for 140 participants was 28 (IQR= 39 – 18). At Test 2 ( $N=137$ ) the median score was 30 (IQR = 39 - 23.50).

#### **4.3.2 Item analysis**

Cronbach's alpha was found to be 0.874. Corrected item-total correlations were examined which are presented in Table 4.2. For majority of the items (except item no. 3, 9, and 13) Cronbach's alpha did not increase when item was deleted indicating acceptable quality of the items. Cronbach's alpha values were 0.875 and 0.876 respectively when items 3 and 13 were excluded. However these are close to the whole scale Cronbach's alpha value of 0.874 indicating that they would not degrade the overall quality of the scale. Deletion of item no. 9 increased Cronbach's alpha to 0.883 indicating the necessity of its revision. The expert panel revised items 3, 13, and 9 and reached to a consensus to retain them in the main scale. Therefore no item was excluded. Corrected Item-Total Correlation and Cronbach's alpha if Item deleted is presented in Table 4.2.

Table 4.2: *Corrected Item-Total Correlation and Cronbach's alpha if Item deleted of SCAS-P*

Item	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's alpha if Item Deleted
Item1	30.49	243.719	.322	.872
Item2	29.97	245.121	.233	.874
Item3	30.84	250.436	.138	.875
Item4	30.41	248.302	.218	.874
Item5	29.90	241.141	.287	.874
Item6	30.84	244.239	.377	.871
Item7	30.36	235.296	.489	.869
Item8	29.89	239.742	.333	.872
Item9	30.65	241.884	.141	.883
Item10	30.64	240.706	.449	.870
Item11	30.57	239.182	.432	.870
Item12	31.11	246.418	.460	.871
Item13	30.50	249.964	.107	.876
Item14	29.65	242.546	.276	.874
Item15	30.81	235.754	.543	.868
Item16	29.69	236.994	.385	.871
Item17	30.63	245.545	.289	.873
Item18	30.51	233.806	.594	.867
Item19	31.11	246.168	.446	.871
Item20	30.65	235.639	.602	.867
Item21	30.41	243.669	.245	.874
Item22	30.44	236.607	.568	.868
Item23	30.44	237.384	.458	.869
Item24	30.52	236.050	.497	.869
Item25	30.61	245.908	.228	.874
Item26	30.74	239.991	.494	.869
Item27	31.10	246.393	.332	.872
Item28	30.90	243.026	.454	.870
Item29	29.76	242.627	.293	.873
Item30	31.06	247.643	.313	.873
Item31	30.93	241.117	.567	.869
Item32	30.95	242.897	.478	.870
Item33	30.91	240.856	.503	.869
Item34	30.39	233.276	.541	.867
Item35	30.46	243.041	.314	.872
Item36	30.75	246.678	.256	.873
Item37	30.59	233.050	.661	.866
Item38	29.77	236.825	.424	.870

### **4.3.3 Reliability**

#### **Test-retest reliability**

Spearman correlation coefficient between SCAS-P Test 1 and Test 2 scores with an interval of 15 days was significant,  $r = 0.57, p < .001$ .

### **4.3.4. Validity**

#### **Content validity**

A measurement has content validity when its items cover all aspects of the construct being measured. In the present study the construct being measured is anxiety. All the judges agreed that the items cover the dimensions of anxiety.

#### **Construct validity**

Construct validity is the degree to which a test measures the construct that it is supposed to measure. In other words, how well does the SCAS-P measure the theoretical concept of anxiety? There are two necessary components of construct validity: convergent and discriminant validity. In the present study only convergent validity was determined.

#### ***Convergent validity***

Convergent validity refers to the degree to which scores on a test correlate with (or are related to) scores on other tests that are designed to assess the same construct. In other words, it takes two measures that are supposed to be measuring the same construct and shows that they are related.

To calculate convergent validity SCAS-P scores were correlated with SCAS scores in both Test 1 and Test 2 (retest). Spearman correlation coefficient between SCAS-P Test 1 and SCAS Test 2 scores was significant, so was between SCAS-P Test 2 and SCAS Test 1, and between SCAS-P Test 2 and SCAS Test 2,  $r_s = 0.257, 0.19, \text{ and } 0.443$

respectively (all  $p$ 's < .05). The correlation coefficient between SCAS-P Test 1 scores and SCAS Test 1 scores, however, was not significant,  $r = 0.029$ ,  $p = 0.738$ .

#### **Other validity evidence**

Spearman's rho was calculated between Bangla SCAS (Test 1 and 2) and Bangla CAWS. As both the scales were adapted at about the same time, the correlation coefficients between them do not strictly fit any of the validity types, though they seem like concurrent validity evidence. It was expected that participants' scores on both the scales would be correlated as they measure similar construct. CAWS scores significantly correlated with SCAS-P test 2 scores,  $r = .228$ ,  $p = .01$ , but not with SCAS-P test 1 scores,  $r = .09$ ,  $p = .29$ .

#### **4.4. Discussion**

This study adapted the parent version of the Spence Children's Anxiety Scale (SCAS-P) and examined its psychometric properties to use it in Bangladesh.

A standard procedure was followed for the cross cultural translation and adaptation (Soussa & Rojjanasrirat, 2011). The Bangla SCAS-P was administered to 140 parents of school going children. With an interval of two weeks 137 participants were retested. Item analyses, reliability, and validity were determined using standard methods.

Results show that the value of Cronbach's alpha was 0.874 for the Bangla version scale which is higher than the recommended value of .80 for individual and .70 for research purposes (Nauta et al., 2004). The internal consistency reliability of the adapted Bangla version scale is very similar to the other validation studies such as those for Chinese and Italian samples, alphas were over .90 and .85 respectively (Li et al., 2016). Similarly, high internal homogeneity (0.89) was found in another study with normal group (Nauta et al., 2004).

Item analysis indicates that all the items, except three (items 3, 9, and 13) are good. However, the deletion of items 3 and 13 kept the whole scale Cronbach's alpha values nearly unchanged (.875 and .876 respectively when items were deleted) indicating that they would not degrade the overall quality of the scale. When item no. 9 was deleted, Cronbach's alpha increased to 0.883 indicating the necessity of its revision. The expert panel revised all the three items and reached the consensus to retain them in the main scale.

The test-retest correlation of the SCAS-P with an interval of 15 days was significant and the strength of association ( $r = 0.57$ ) was satisfactory. It is to be noted that a good number of parents chose the same response for all the items in Test 1 as is evident from their data. They were in a hurry and casually responded the questionnaire as research assistants observed. However, they were found sincerer in responding the questions in the retest phase. This might have deflated the actual strength of the association between Time 1 and Time 2 responses for the scale.

Convergent validity was attained by correlating SCAS-P with SCAS scores in both Test 1 and Test 2 (retest). All were significant (0.257, 0.19, 0.443 all  $ps < .05$ ) except one ( $r = 0.029$ ,  $p = 0.738$ ).

The relationship between the SCAS-P and CAWS in both test phases (Test 1 and Test 2) showed one significant but low, and one non-significant correlation. Interestingly, correlation between SCAS-P Test 1 and CAWS was not significant, which support the previous notion that parents responded casually in Test 1.

The issue of agreement between parent and child report is disreputable challenging in clinical assessment, with correlations as low as 0.25 for parent-child agreement for some measures of child behavior problems (Achenbach, McConaughty, & Howell, 1987).

Parent–child agreement becomes larger when the behavior is observable (J. S. March et al., 1997) and is smaller for internalizing symptoms than for externalizing behavior (Rey, Schrader, Morris-Yates, 1992; Rapee et al., 1994; Achenbach et al., 1987) concluded that parent child agreement is higher for younger children than for adolescents. Similarly, lower age is associated with higher parent–child agreement on anxiety disorders (Rapee et al., 1994).

Internalizing problems such as anxiety is a subjective feeling and relatively difficult to observe than externalizing problems like aggression, especially for adolescents (Achenbach, 2006; Achenbach, Krukowski, Dumenci, & Ivanova, 2005). Moreover, adolescents and their parents may have different understanding and focus on different aspects of child psychopathology which might cause low child–parent agreement (De Los Reyes & Kazdin, 2005; Cole, Hoffman, Tram, & Maxwell, 2000). Therefore, low correlation between child and parent report, do not automatically lead to the conclusion that the validity of the instruments is questionable. It is to be noted that the measures often correlate well with other measures of the same construct when they are completed by the same informant. For instance, for the SCAS (child version), convergent validity was high with regard to another child self-report on anxiety, but weaker with regard to parental reports of the child’s internalizing and withdrawal symptoms (Spence, 1998).

As suggested by Cole et al. (2000), parents and children might focus on somewhat different aspects of anxiety and depression, originating from different underlying factors. In spite of the possibility of low agreement between the reports of parents and children, SCAS-P is a promising parent-report measure that could be used to assess children’s anxiety along with the SCAS.

#### **4.4.1 Limitations and recommendations:**

As in any other study, the present research has some limitations. First only healthy participants were recruited which precludes us from examining whether the SCAS-P can discriminate between healthy and clinical participants (i.e. discriminant validity evidence is absent for the adapted scale). Secondly parents' psychopathology was not assessed. Research has shown that the anxiety or depression level of parents can influence their judgment about the level of their children's anxiety (Najman et al., 2001). Third clinical practice requires that an instrument can differentiate between the distinct anxiety disorders which were not been investigated in the present study. Fourth most of the parents were mothers, fathers were under represented. Fifth the validity evidence would be strengthened further if other parent version of anxiety measures could be used to determine the concurrent validity of the adapted scale. However, such measure is not available in Bangla.

Though there are areas of improvement for the Bangla SCAS-P, its psychometric properties are adequate for its use in research where parental reports are considered relevant to study children's anxiety.

## **Chapter 5**

"Our species (human) thinks in metaphors and learns through stories." -- Mary Catherine Bateson, 1995, p. 11.

"Sometimes reality is too complex. Stories give it form." -- Jean Luc Godard (French Filmmaker)

### **Chapter 5: Development of Intervention Tools**

#### **5.1. Introduction**

Given the high prevalence rate and associated adverse effects of anxiety disorders in children and adolescents around the world including Bangladesh, the need to develop developmentally appropriate intervention programs to be applied in large scale is vital. The reliance on CBT techniques in school based intervention programs is informed by research findings supporting CBT as an effective (Tomb & Hunter, 2004; Cartwright-Hatton et al., 2010; Miller, Short, Garland, & Clark, 2010) and first-line treatment of choice (Silverman et al., 2008; Walkup et al., 2008; Ishiwaka & et al., 2007; Townsend et al., 2009; James et al., 2013; James et al., 2015) for anxiety disorders in children and adolescents. The most commonly used treatments include: exposure therapy/ systematic desensitization, relaxation training, response prevention, coping tactics, cognitive restructuring, self-monitoring and self regulation, psychoeducation, role rehearsal and social skills training.

Some practitioners favor Bibliotherapy (i.e. using books for therapy purposes) as an age appropriate way/means of learning coping strategies through covert modeling (Pardeck & Markward, 1995; (Bouchard et al., 2013). Bibliotherapy is recommended to use as one of many techniques within a planned counseling framework, not solely alone (Campbell, 2009). In many ways children can be benefited by storybooks. Positive self statements and coping mechanisms can be modeled through storytelling. Discussions can



be fabricated about the characters, difficulties and coping strategies. Stories facilitate the sharing of views, attitudes and beliefs about situations involving stress or conflict. They support children in achieving control over their lives by identifying with others and discovering both unique and universal solutions (Schechtman, 2007). Reading a storybook depicting characters succeeding in coping with a stressor or anxiety provoking stimuli can be combined with an intervention carried out in a non-threatening environment. (Gervais et al., 2011) mentioned that if stories can be matched with appropriate activities and related discussions, it can facilitate the understanding of one's emotions, develop appropriate social and problem-solving skills, modify one's negative self-talk, and help learning coping strategies. Using of stories portraying children dealing with common stressors, and/or focusing on anxiety-provoking situations represents an innovative way to discuss the worries that children might be experiencing. Specially, with young children storytelling is a creative alternative to verbally loaded approaches to therapy because often young children are unable to understand complicated verbal dialogues (Friedberg et al., 2014). Story books describing anxiety management teach children how to apply various cognitive-behavioral strategies to solve their day to day problems. As some researchers placed it,

*“The use of stories is part of learning about alternative options for future action, by drawing from the hero who overcomes obstacles. Stories also provide a small space, in which children can address larger, more complex issues and normalize experiences beyond their understanding. This can reduce anxiety and establish a sense of order and safety”* (Berger & Lahad, 2013, p 32).

A universal quality in children's literature is the use of animals as the non-specific, identifiable other that can keep a scary idea from becoming panicking. Animals in stories help children to view their own situations from a distance. However, a challenge for

counselors involves choosing materials that are age appropriate and relevant to children's emotional and developmental needs. Counselors need to read the book to know what the story is about and to enter the child's world to become an empathetic listener. Also chosen story has to be culturally sensitive; it should build a non-stereotypical knowledge base about life in a particular culture.

There are many non-fiction books dealing with anxious feelings, such as Crary's (1994) *I'm Scared*, as well as fiction books, such as Waddell's (1999) *Can't You Sleep, little Bear?* and Varney's (1995) *Jelly Legs* for pre-schoolers. Two books suitable for primary school children include Browne's (1995) *Willy the Wimp* and Campbell's (2006a) *Cilla the worried Gorilla*. For secondary school children, books such as Duff's (1999) *Duffy's Once were Worriers* and Park's (1989) *Things in Corners* are widely used.

Integrating CBT and bibliotherapy in developing intervention of anxiety for school settings has some advantages. Treatment programs conducted in schools can avoid many of the obstacles that are often associated with children accessing off-campus services (McLoone, Hudson, & Rapee, 2006). For social reasons children do not want to be identified as mentally ill and parents fear being blamed for the condition of their children. This prevents children and parents from seeking the help they need to overcome the anxiety (Mukolo & Heflinger, 2011). Moreover, some families may not be able to afford mental health services (Salloum et al., 2016) or simply have difficulties reaching services due to difficulties in transportation (Fazel, Reed, Panter-Brick, & Stein, 2012) which is very true in Bangladesh. Thus, accessibility to conventional intervention programs is not always feasible. Therefore, school environment offers promise as a means of broadening the reach of efficacious interventions for mental health to a large population.

Services provided at school can avoid referral barriers, demographic barriers caused by the cost of services, and lengthy waiting lists in a country like Bangladesh where there is a scarcity of mental health professionals. Even in developed countries like Australia it was found among children selected for intervention with the *Cool Kids* program, only 2% had previously sought help from a mental health professional (Mifsud & Rapee, 2005). School teachers are in a position to monitor children, especially those at risk, and intervene with the help of professionals prior to the development of major dysfunction. Schools can provide authentic-life settings to challenge the child's anxieties, whether they are social fears, worries in general, or separation anxiety. This is very unlikely to take place in a traditional clinic setting which does not portray everyday life and its challenges (Chivara et al., 2005). In fact, the majority of children who do receive treatments receive it from school-based services (Farmer et al., 2003). Given that no differences have been found between individual and group CBT treatments for anxious children, schools can be the ideal places to carry out group intervention programs to reduce anxiety problems in children (Flannery-Schroeder & Kendall, 2000; Manassis et al, 2002). Furthermore, the stigma and shame that children and parents may experience from seeking help from mental health services are greatly removed when intervention programs are integrated in routine school activities (Scheering & Rapee, 2004); (Weiss, Harris, Catron, & Han, 2003). The CBT and bibliotherapy can be integrated to develop a school-based intervention program which has the potential to greatly help anxiety incapacitated children to overcome their problems. However, the current reviews of the literature point out that further studies are required to develop and investigate such programs (Silverman et al., 2008). Taking this into account, the present study aimed to develop school-based

intervention tools/programs to help primary school children dealing with anxiety disorders.

### **5.1.1 General Objective**

The general objective of the present study was to develop intervention tools for anxiety disorders in primary school children.

### **5.1.2 Specific Objectives**

More specifically, the present study was carried out

- i) To develop CBT based five story books, each on separate anxiety disorders, such as separation anxiety disorder, selective mutism, specific phobia, social phobia and generalized anxiety disorder.
- ii) To develop a CBT focused self-help interactive book to assist children to learn and practice skills needed to cope with anxiety.
- iii) To develop session wise modules for conducting the intervention program in school settings based on the storybooks and interactive book.
- iv) To develop reading materials to psycho-educate parents and teachers in anxiety disorders in children.
- v) To provide information on the characters and places described in the stories.
- vi) To make illustrations for the story and interactive books.

## **5.2. Method**

This phase was carried out in the following five steps.

Step1: Writing child-focused CBT based story books as intervention tools

Step 2: 1<sup>st</sup> trial

Step 3: Modification and finalization of the story books

Step 4: Developing interactive self-help book

Step 5: Preparing Instructions on anxiety for parents and teachers

Step 6: Developing training modules and materials

Step 7: Field test

### **5.2.1. Step1: Writing story books**

It was decided to write five CBT based story books on separate anxiety and a self-help interactive book for children. The story books were based on separation anxiety, selective mutism, specific phobia, social phobia, and GAD. Panic and Agoraphobia were not considered as these two disorders are very rare among the young children, less than 1% (Costello et al., 2004). Also it has been found different anxiety disorders tend to respond positively to the same drug and cognitive-behavioral therapy components (e.g., Kendall, 1994), and treatment outcome was independent of any specific anxiety disorder (Cobham et al., 1998); (Berman et al., 2000). A number of CBT techniques were considered to write the story books which are described below.

**Psychoeducation:** Psychoeducation can be defined as ‘systematic, structured, didactic information on the illness and its treatment, and includes integrating emotional aspects in order to enable clients/patients as well as family members to cope with the illness’ (Rummel-Kluge, Pitschel-Walz, & Kissling, 2009). According to (Carr, 2013) psychoeducation should empower parents and children. It should allow them to reach a position where they can give a clear account of the problems and the correct way to manage it. Simplicity and realistic optimism are central to good psychoeducation. Therefore, it is important to explain the complex things in as simple terms as possible and also to engender a realistic level of hope when giving feedback by focusing on strengths and protective factors. In the present intervention program, psychoeducation on anxiety

and it's relation to thoughts, physical sensations and behaviors were provided to the children as well as to parents and teacher in simple terms.

**Relaxation training:** Relaxation benefits adults as well as children (Davis, Eshelman, & McKay, 2008). The present intervention program, children practiced breathing exercises (mindfulness and abdominal) and Progressive Muscular Relaxation to calm their mind and body so that they can manage their overwhelming anxiety. Here, breathing with balloons and bubbles and PMR with imagination were taught.

**Role play:** Role-playing is a technique that can be used for a wide variety of purposes including role-playing to uncover automatic negative thoughts, develop an adaptive response, and modify intermediate and core beliefs. Role-playing is also useful in learning and practicing social skills (Beck, 2011). The present intervention program used role playing to model and practice coping strategies.

**Visualization/ Imagery:** Imagery is seeing with mind. It is used widely in psychotherapy. The client is asked to visualize/imagine an event or situation and experience it using the five senses (i.e., seeing, hearing, smelling, tasting and touching).

**Cognitive restructuring:** Cognitive restructuring is a core technique in CBT. It is commonly used in interventions of depression and anxiety (McLoone, Hudson, & Rapee, 2006). It is a therapeutic process used to identify and face negative thought patterns and help children understand that these thoughts are futile or disruptive, with the goal to eventually change negative behaviors. It teaches children how to think differently by replacing unhelpful and illogical thoughts ("faulty thinking") with more rational and positive thinking. Usually, a therapist facilitates the child in challenging to replace irrational and distorted thoughts with realistic ones. The steps in cognitive restructuring are: 1) identifying irrational thoughts, 2) challenging them, and 3) replacing them with more realistic, rational, and positive thoughts.

Techniques like thought stopping, thought challenging, and replacing with smart thoughts were incorporated in the present intervention program to teach them the children.

**Talking back to anxiety/Debating with anxiety:** As it is an internalizing disorder, externalizing it is considered as a healthy way to cope with anxiety. To externalize and control anxiety, the present program used talking back to the anxiety and considering it as a separate entity rather than an integral part of the self.

**Distancing.** Distancing is an imagery technique to reduce distress and help anxious children. The concept of watching a movie on a big TV screen and controlling it with the remote control is used to gain power on what is showing on the screen. Distancing the anxiety provoking stimuli (visual image) from the self by blurring the picture, making it colorless, turning it into a still picture, reducing the volume/ turning off the volume (if there is an auditory image), increasing the distance between self and the picture of anxiety were used in the present intervention so that children can exercise control over their anxieties.

**Container exercise:** Containers are used to manage intense emotion and to prevent flooding of lots of negative emotions (Adler-Tapia, 2012). It teaches an individual how to manage and contain negative symptoms and emotions until it can be sorted. A client is asked to put all the bad thoughts, feelings, and body sensations into a container to hold them until the client feels better and the things that are bothering him/her can get better. The principle of containment was achieved in the present intervention through teaching children how to contain their worries/anxieties by creating Worry Box and scheduling Worry Time.

**Graded Exposure:** Feeling of hopelessness to be engaged in certain activities led anxious children often use avoidance as a coping strategy. Hence, direct exposure to fear-inducing situations is necessary to help the child challenge their view that

encountering the threatening stimuli will certainly lead to harm. Graded exposure to a feared event or stimulus is a process whereby an anxiety-provoking situation can be broken down into less threatening steps with the child exposed to the fear gradually, mastering one step at a time as if moving ahead on the steps of a ladder. Graded exposure helps the child learn that an anxious situation is not necessarily as intimidating as they expected it to be and that they do have the skills to cope with the situation.

**Positive self talk:** The inner voice of us has influential impact over our feeling and behavior. This internal dialogue, or personal commentary, outlines our reactions to life and its surroundings. As anxious children tend to have negative self talk it is one of the ways to recognize, promote, and uphold confidence and optimism is to intentionally fill their thoughts with positive self-talk. This has been achieved in the present intervention program by repeating positive self talk in front of a mirror and focusing on own resources.

**Procedure for writing the story books:** The following steps were followed in writing the books.

- a) **Review of prevailing intervention tools:** The researcher reviewed the existing intervention programs such as *Worrybusters* program (Campbell 2007), FRIENDS (Farrell, Barrett, & Claassens, 2005) and other CBT based programs such as: A clinician's guide to *Think Good-Feel Good* (Stallard, 2005). Some therapeutic story books published by American Psychological Association (Magination Press) were consulted, like "*When Lizzy was afraid of trying new things*" (Maier, 2004), "*Sometimes I'm scared*" (Annunziata & Nemiroff, 2009), "*A feel better book for Little Worriers*" (Brochmann & Bowen, 2017), (Lavalley & Schneider, 2017) "*What to do when you Don't Want to Be Apart*" and many more. Other intervention books of Barron's Educational Series, Inc. such as "*Studying is hard*"



(Moore-Mallinos, 2013), “*Do you have a secret*” (Moore-Malinos, 2005) were consulted. Also “*The feelings book (revised): The care and keeping of your emotions*” (Madison, 2013) were conferred with.

- b) The first draft:** Based on the gained knowledge, each of the books was written by the researcher.
- c) Judged by the subject-matter experts:** Three psychologists and one psychiatrist evaluated the books. They were highly knowledgeable regarding DSM, especially in anxiety disorder and in cognitive behavior therapy. They were asked to give their expert opinion about the diagnostic features of each anxiety that were projected on the characters of the book. Experts provided feedback on the story content, errors and inconsistencies.
- d) Preparation of 2<sup>nd</sup> draft accordingly:** According to the judges’ opinion and suggestions some modifications were done and the second draft was prepared.
- e) Judgment of the language experts:** The 2<sup>nd</sup> draft of the story books were given to two university teachers of Bengali department and a children story writer to check the appropriateness, difficulty level of the language and preferences of writing style.
- f) Preparation of 3<sup>rd</sup> draft:** According to the language experts’ suggestion few sentences were rewritten in simple language and some words were changed.

### **5.2.2 Step 2: First Trial**

**First tryout on representative samples:** The stories were then given to the parents of 12 school going children aged between 5 to 12 years to read the stories to them and record the feedback from the children. These children and their parents were selected conveniently. The parents were all educated.

**5.2.3 Step 3: Modification and finalization of the story books:** Children's likeness, interest, understandability, difficulties, eagerness to know more and involvement with the stories were taken into consideration and the modification was done accordingly. Thus the final versions of the stories were prepared which are described below.

*i) Vitu Kayar Golpo* (The story of Frightened Kaya)

This is a story based on Separation Anxiety. This story narrates about a young Gorilla named *Kaya* living with his family in a zoo who faces extreme distress to leave his parents and go to play pan. He refuses to go out without her mother, acts violently when forced to leave his mother. He does not play with others and is always clinging to her mother. He had persistent worries about losing his parents or something bad will happen to him or his parents. He was having nightmares and showing signs of physical illness. For these he was missing out the fun of his life. The story introduces a character of an empathetic friendly bear. This bear helps him to reconstruct his thoughts, manage his feelings, emotions and develop appropriate behaviors and function well in his life. The bear as the therapist used child based Cognitive Behavior Therapy to help *Kaya* to overcome his anxieties. Detailed description of the story is in Appendix 12 B.

*ii) Boba Misha* (Mute Misha)

This story was based on Selective Mutism. The story is about a 5 years old girl called *Misha* who faces great difficulty to speak in social situations. The girl have no difficulty in talking at home or with close ones but was mute at school or with unfamiliar children or adults. This failure to speak was creating significant consequences in academic achievement (e.g. not being able to read aloud, answer questions when asked by teacher) or interferes with normal social communication. Consistent failure to speak led her to being bullied by others. The story narrates how *Misha* was able to overcome her problems

by role playing with puppets with the help of an Educational Psychologist (See Appendix 13 B).

**iii) *Vitur Dim Kumirchana*** (The Frighten Crocodile)

This story was based on Specific Phobia. Here the character of a young crocodile named *Gama* living in the dense Sundarbans, had marked fear of water body and swimming in the river. Rivers and any water based body provoked immediate fear and anxieties in him which is out of proportion to the actual risk posed. He actively avoided these situations or had to endure with intense anxieties. It started to cause significant distress or impairment in social, occupational and other important areas of functioning. His friend played the role of the therapist who assisted him to manage his anxieties gradually through the techniques of CBT. Detailed description of the story is in Appendix 14 B.

**iv) *Lajuk Arian*** (Shyful Ariana)

This story is based on Social Anxiety Disorder, commonly known Social Phobia. The character is about an alien named Arian living in a far away planet. The story is the description of the alien's daily activities in the form of a diary/journal. Being extremely distressed about social interactions and situations that involve the possibility of being scrutinized by others led him to avoid such interactions and situations. The alien was afraid of meeting and talking to others, had no friends, avoided school, afraid of making class presentation and so on. He feared he will be negatively evaluated, humiliated or embarrassed while talking or performing. His anxiety was out of proportion to the actual threat posed by the social situation, causing significant distress in academic, social and other areas of functioning. Finally, he was treated by the school therapist, a psychologist who encouraged and supported her to overcome his fears. With the help of the therapist, he was able to make the link between her thoughts and feelings and how it affects his

wellbeing and behavior. Practicing CBT techniques, such as cognitive restructuring, distancing, positive self talk helped him to lead a happy normal life. Detailed description of the story is in Appendix 15 B.

v) ***Jami Namer Notun Cheleti*** (The New Boy named Jami)

Based on Generalized Anxiety Disorder, this story centers around a boy named Jami who moved to a big city with his family and started his new school. He had constant, excessive anxieties almost regarding each and everything. His apprehensive expectation that something bad is going to happen made his muscle tensed, restless and easily fatigued. He finds it difficult to control the worry and to keep worrisome thoughts from interfering with attention to tasks at hand. Also he had difficulty in sleeping. These led Jami to an unsatisfying life. Gradually he conquered his anxieties with his uncle's support. Detailed description of the story is in Appendix 16 B.

**Illustration:** The researcher finalized the themes and concept of the pictures to be included in the books. The concept of the pictures was then discussed with 6 to 15 years old children who voluntarily agreed to draw the illustrations for the books. They read the stories which were given to them and along with the concept of the pictures they drew from their own imagination. Four children participated in making the illustrations. The pictures are presented in Appendix 12 D to 17 D.

**5.2.4 Step 4: Developing interactive self-help book**

The researcher, in addition to the CBT based story books, developed an interactive self-help book targeting children which is also eye-opening for parents and teachers. A guide tool for the psychologists and counselors working with children was also developed. The most widely used techniques of the CBT that are used in the treatment of anxiety have been incorporated in the book. Based on the available intervention programs and related literature, the concepts and strategies to overcome anxiety were presented in easy to

understand language. Child friendly activities such as how-to-do steps, prompts to draw and write were included which would help children to master new skills needed to reduce anxiety. Age appropriate metaphors and illustrations made by child artist encouraged comprehension of the related concepts. The interactive book was developed into an easy going, fun-loving and interesting book for children at the same time motivating, educating and empowering them to learn and use skills to defeat their wild/unrealistic anxieties.

The researcher besides taking into account of the expert opinion, conducted FGDs and workshops with the psychologists working with children based on the interactive self-help book and modified the content according to their suggestions. Flyers were distributed asking parents and children to enroll in the training sessions conducted at the Department of Educational and Counseling Psychology. Half-day long two training sessions were conducted based on the interactive self-help book. Their feedbacks were considered and necessary amendments were made. Mostly positive feedbacks were received. Thus the self-help interactive book named *Dhuschinter Chuti* was developed within the framework of CBT which can be considered as a resource for enlightening, encouraging, and empowering children to overcome their anxieties (see Appendix 18).

#### **5.2.5 Step 5: Overview of Anxiety Disorders/ Preparing Instructions on Anxiety for Parents and Teachers**

At the beginning of each story book, a brief description on anxiety and the specific anxiety disorder related to the story was provided for parents and teachers to make them aware of specific anxieties and their symptoms. Explanations about the three different parts of anxiety were provided, such as, thoughts about being afraid, physical feelings of being afraid and behavior patterns that help the child avoid the situations of which they are afraid. Also in the books, psychoeducation related to the types of anxiety disorders has been presented. These are presented in the Appendices 12 A to 16 A.

### **5.2.6 Step 6: Preparation of training modules and materials:**

Training modules and materials to carry out the intervention program was developed based on the stories and the interactive self-help book. Modules were scrutinized and checked by the subject matter experts. Necessary modifications were done accordingly. The materials include puppets, stuffed animal toys, color pencils, pens, paper for drawing, scissor and poster paper for making masks and puppets, bubble pots, balloons, mirror, silhouette of body image, worry bear, worry box, worry tree, poster of emotion words, pictures of emotion, mood-o-meter and handmade posters based on the story and self-help books .These materials support to conduct the CBT techniques in a child friendly way. For example, blowing balloons and bubbles assist children in performing deep breathing to calm their anxious mind and body; silhouette of body image helps them to relate thought, feeling, behavior and bodily sensations; poster of emotion words, pictures of emotions and mood-o-meter help them to identify their emotion and measure its intensity. The modules for young children are described in Tables 5.1– 5.4 (see next page).

Table 5.1: *Day One planning based on Separation Anxiety (Kayar Golpo)*

Activities	Duration	Tools	Objective
Orientation Introduction Checking feeling state	10 minutes	Pictures of Emotions and Mood-o-meter	Introducing selves and the purpose of the session. Rapport building. Introducing feelings and emotions.
Introduction of Gorilla, Baboon and Zoo	10 minutes	Pictures of Gorilla, Baboon and Zoo	To draw attention and evoke interest
Story telling	15 minutes	Story book <i>Kayar Golpo</i>	To relate the character with oneself in a non-threatening way and to have an understanding of ways to overcome the difficulties faced by the character
Drawing Gorilla	10 minutes	Dotted picture of Gorilla Color pencil	To involve children into the process
Deep Breathing through modeling	5 minutes	Poster on breathing	To practice relaxation
Writing worries in small piece of papers. Putting the small worries (one can do something) in the front pocket of the bear's jacket and the big worries (one can't do anything) in the back pocket.	10 minutes	Worry bear and pieces of paper	To be able to distinguish small and big worries  To take initiatives about the worries and not to be overwhelmed by them  To identify their anxious thoughts and understand how their thoughts affect their feelings.
Role playing (Voluntary participation)	10 minutes	Worries picked from the pockets	To practice the skills to deal with anxiety
Cognitive restructuring, Negative/unhelpful thought stopping, practicing helpful thought Choral response	10 minutes	Posters of statements of talking back to anxieties  Stop sign Posters of statements of helpful thought	To practice talking back to the worries To teach how to challenge unhelpful thoughts and replace it with realistic thoughts from past experience
Checking feeling level	6 minutes	Mood-o-meter and Picture of emotions	To check the present state of emotion
Feedback (Written and Verbal)	4 minutes	Paper, pencil	To close the session

Table 5.2: Day Two planning based on Selective Mutism (*Boba Misha*)

Activities	Duration	Tools	Objective
Hello time	10 minutes	Mood-o-meter and Picture of emotions	Rapport building, Introducing feelings and emotions
Story telling	15 minutes	Story book <i>Boba Misha</i>	To relate the character with oneself in a non- threatening way and to have an understanding of ways to overcome the difficulties faced by the character
Drawing of cat by matching dot to dot.	10 minutes	Picture of cat with dots, Color pen	To involve children into the process
Making puppets	12 minutes	Paper, glue, color pen, old socks etc.	To use the puppet to cope with fears
Puppet show and role playing	12 minutes	Puppet of cat	To teach how puppets can assist in coping with worries To encourage interaction to minimize fear of speaking
Making bubbles	7minutes	Soap water and ring	To practice breathing exercises
Making thought bubbles	10 minutes	Poster paper, color pencil	To teach the idea of positive self-talk
Checking feelings	10 minutes	Mood-o-meter and Picture of emotions	To check the present state of emotion
Verbal and written feedback	4 minutes	Paper, pencil	To close the session



Table 5.3: Day Three planning based on Specific Phobia (*Vitur Dim Kumirchana*)

Activities	Duration	Tools	Objective
Hello time Match faces with feelings	5 minutes	Mood-o-meter and Picture of emotions	Build rapport Introducing feelings Identify different feelings
Introduction of Sundarban, Crocodile	5 minutes	Pictures of Sundarban, Crocodile	To orient children for the story
Story telling	15minutes	Story book <i>Vitur Dim Kumirchana</i>	Identifying oneself with the character To have an understanding on the problems faced by the character and the ways to solve it.
Drawing of Gama the crocodile by matching dot to dot	10 minutes	Picture of Gama (crocodile) with dots and color pen	To be acquainted with the character
Questions about anxiety provoking situations for self and others	5 minutes	Questioning and discussion	Distinguish anxiety from other feelings Begin to construct hierarchy of anxiety provoking situations
Abdominal Deep breathing	5 minute	Calm card	To relax
Graded exposure through modeling	15 minute	Paper, pencil, chart paper	To teach children how to cope with fear step by step
Positive self talk using mirror technique	10 minute	Mirror	To focus on own resources
Stop negative thoughts with choral response	10 minute	Poster of stop sign, negative thoughts	To get rid of worries/fears
Checking feelings	5 minutes	Picture of emotions and Mood-o-meter	To check the present state of feeling
Feedback(Written and Verbal)	5 minutes	Paper, pencil	To close the session

Table 5.4: *Day Four planning on Progressive Muscular Relaxation and Revision*

Activities	Duration	Tools	Objective
Hello time	8 minutes	Mood-o-meter and Picture of emotions	Build rapport Introducing feelings Identify different feelings
Writing anxieties on the leaves and sticking them to the Worry tree	10 minutes	Poster of worry tree, paper leaves, color pen, gum	To identify one's anxieties/worries
Role playing on one of the anxiety selected by the children	10 minutes	Volunteer participation	To involve children into the process
Put marks on the parts of body that hurts/feels uneasy when one is having anxieties	10 minutes	Poster of body silhouette	To introduce and identify somatic feelings related to anxiety
Progressive Muscular Relaxation through modeling and practice	12 minutes	Narrative by the author	To introduce tense vs. relaxed To introduce relaxation training
Review from previous sessions (deep breathing, positive self talk, negative thought stopping) Choral response	20 minutes	Calm card, balloons, charts and posters	To use the skills to combat anxieties
Checking present feelings	10 minutes	Picture of emotions and Mood-o-meter	To check the present state of feeling
Feedback (Written and Verbal)	10 minutes	Paper pencil	Closing of session

The modules for the older age groups are presented in the following Tables 5.5- 5.8.

Table 5.5: *Day1 planning based on Specific anxiety for older group (Vitur Dim Kumirchana)*

Activities	Duration	Tools	Objectives
Hello time	5 minutes	Verbal presentation	To build rapport; To introduce selves and purpose; To get attention
Checking feeling state	5 minutes	Pictures of Emotions and Mood-o-meter/ Fear meter	To orient about emotion; To match faces with emotions; To measure the intensity of the feeling
Introduction of Sundarban, Crocodile	5 minutes	Pictures of Sundarban, Crocodile	To orient children for the story
Drawing pictures of the crocodiles	5 minutes	Dotted print copies of crocodiles, paper, color pencil	To be acquainted with the character
Story telling in own words/reading aloud and role playing of some part of the story	15 minutes	Story book, Pictures and stuffed toy crocodile, picture of Sundarbans.	To present the main concept of the story To create a mental image To identify oneself with the character
Sharing of feelings about the story and own anxieties	5 minutes	Story book	To inspire them to share their fear/anxiety To gather information about their anxieties
Pair discussion on what they usually do in anxiety provoking situation Presentation of their coping strategies	5 minutes	Verbal communication	To provide information about treatment
Selection of anxiety through discussion	5 minutes	Discussion	To select a common anxiety to work on

4-7-8 Breathing	5 minutes	Calm card showing steps of the breathing	To relax
Graded exposure through modeling regarding the selected anxiety	15 minutes	Poster on the gradual steps from less anxiety to more anxiety provoking situation	To reduce the anxiety step by step
Negative thought stopping	5 minutes	Poster of Stop sign, positive statements and	Teaching them how to stop automatic negative thoughts and replacing with positive ones.
Talking back to the anxiety	5 minutes	Poster on scolding statements like " <i>You are naughty, You are a loser, You are lying, I don't like you</i> " etc.	To practice talking back to the worries To develop strength to face anxieties
Checking present state of feeling	5 minutes	Picture of emotions and Mood-o-meter	To check their present feeling state
Feedback	5 minutes	Paper, pencil	To assess usefulness of the session

Table 5.6: *Day 2 planning based on Social Anxiety (Lazuk Alien)*

Activities	Duration	Tools	Objectives
Hello time Checking feeling state Introducing the character of the alien	12 minutes	Picture of emotions and Mood-o-meter	Orientation Orientation to Alien to evoke interest
Drawing of Alien	8 minutes	paper, color pencil	To acquaint with the character
Story telling	20 minutes	Story book Pictures Posters	Identification with the character Be aware of the anxiety Learning to cope with the anxiety
Breathing and Imagery Relaxation	10 minutes	Picture of calm place/natural scenario	To relax To learn to use imagination in positive way
Thought challenge	10 minutes	paper, pencil	To challenge anxieties and focus on realistic/rational thoughts
Using stop sign	6 minutes	Poster of Stop sign	To have control on automatic negative thoughts
Distancing	8 minutes	Imagination with verbal instruction	To learn to minimize anxiety To exert control over the thought
Positive self talk	5 minutes	Statements in poster paper	To build confidence and overcome anxiety
Checking feeling and measuring its intensity	5 minutes	Picture of emotions and Mood-o-meter	Checking the present state of feeling
Verbal feedback	6 minutes	Verbally presented questions like: What is the best thing of the session? What did you like most and why? Is it helpful to cope with your anxiety? What part you didn't understand? Do you want more sessions like this?	To assess the session's usefulness

Table 5.7: Day 3 planning based on General Anxiety (Jami namer Notun Cheleti)

Activities	Duration	Tools	Objectives
Hello time	10 minutes	Picture of emotions and Mood-o-meter	Rapport building Orienting for the session Checking readiness
Story telling with role playing	20 minutes	Story book	Awareness about anxiety Identifying oneself with the character Learning to cope with anxiety
Worry bear	15 minutes	A bear with many small pockets in front side and one big pocket in back side	To learn how to sort small and big anxieties To keep them in a container
Deep breathing with balloon	10 minutes	Balloon	To relax, calm oneself To teach to pour anxieties into balloons and let it go To regain control of self
Worry tree	10 minutes	A poster of a tree with leaves, extra leaves to attach to the tree	To become aware of inner fear and anxiety To visualize own anxiety
Connecting anxieties with body sensations	10 minutes	Picture of silhouette	To identify anxiety in different body parts To develop understanding of thought, feeling and physiological changes
Checking present level of mood/feeling	5 minutes	Mood-o-meter and Picture of emotions	To check present state of feeling
Verbal Feedback	5 minutes	paper, pencil	To assess the session's usefulness

Table 5.8: *Day 4 planning on Revision and Progressive Muscular Relaxation*

Activities	Duration	Tools	Objectives
Hello time	5 minutes	Mood-o-meter and Picture of emotions	Getting attention Checking present mood and readiness to learn
Summarizing previous sessions and practicing skills	10 minutes	Previous tools	To revise the earlier practiced techniques
Talking about children's anxieties Distinguishing among thoughts, feelings, behavior and physical sensation	10 minutes	Posters and charts	To gather information about children's anxiety To develop understanding of thoughts, feelings, somatic responses and action To able to distinguish among them
Dealing with an anxiety selected by the children	10 minutes	Volunteer participation	To check the learned skills needed to cope with anxiety
Connecting anxiety with body sensations	5 minutes	Picture of silhouette drawn on papers	To introduce and identify somatic feelings related to anxiety To develop understanding of thought, feeling and physiological changes
Making of 'My strength book'	10 minutes	chart paper, color pen, pencil, stickers	To teach making own strength book to include statements of one's resources/strengths
Negative thought stopping and smart thinking	5 minutes	Poster of Stop sign, Poster of positive statements, My strength book	To have control over negative thoughts To focus on one's strengths To take own positivity as strength
Progressive Muscular Relaxation (PMR)	10 minutes	Written narrative	To reduce stress To relax body parts
Assessing one's present feelings and intensity	5 minutes	Picture of emotions and Mood-o-meter	To check present level of feeling
Drawing of self image	10 minutes	paper, color pencil	To see oneself as anxiety free
Feedback (Written and Verbal)	10 minutes	Feedback box	To assess the outcomes of the intervention program

### 5.2.7 Step 7. Field test

Field test was conducted in hospital and school settings on 20 children in individual sessions through four trainee educational psychologists. The trainees were trained on how to tell the stories in own words and conduct the intervention program following the module. The age range of the children was from 6 to 12 years. Newly developed stories were then read out/ retold in own words to special need, depressed/anxious children ( $n = 8$ ) and normal/community children ( $n = 12$ ). Techniques taught in the books were practiced with the children. Individual children's baseline and follow up scores in Beck Anxiety Inventory for Youth (BAI-Y) were measured. Treatment credibility scales (ratings from children and parents regarding the intervention) were collected.

### 5.3. Results

Table 5.9: *Mean score of anxious and community children at the baseline and follow up phases according to Beck Anxiety Inventory for Youth (BAI-Y)*

Child Type	Baseline	Follow up (6 weeks)
Anxious ( $n = 8$ )	38	24.45
Community/Normal ( $n = 12$ )	20.25	14

Table 5.10: *The percentage of parents' positive evaluation of the intervention program by the parent credibility questionnaire*

Item	Yes (%)	No (%)	Can't say (%)
My child enjoyed the intervention	98	0	2
It helped my child to reduce his/her anxieties	94	1	5
It was successful in decreasing my child's fear/worries	93	1	6
I think this intervention would be able to manage other children's anxieties	95	0	5
Are you interested to let your child participate in this type of program	99	0	1



Table 5.11: *Percent of the children's rating according to Child credibility questionnaire*

Item	Yes (%)	No (%)	Can't say (%)
This program helped me with my difficulties	87	5	9
It reduced my worries	80	6	14
I can face my fears now	75	10	15
I liked the stories and the sessions	Both 85	stories only 8	session only 7
I find the character of the story (s) similar to	me 50	others I know 26	Can't say 24
The best thing I liked about the program is			

#### 5.4 Discussion

The purpose of this study was to develop intervention tools/programs for anxiety disorders in primary school children. In accordance with this aim, the researcher developed developmentally appropriate CBT framed five story books on separate anxiety disorders. These books were based on the available literature and DSM-5 criteria. Each book highlighted one of the anxiety disorders namely separation anxiety disorder, selective mutism, specific phobia, social phobia and generalized anxiety disorder. Also, an interactive self-help book was developed to help practicing necessary skills to cope with anxiety symptoms.

The first story named *Vitu Kayar Golpo* was based on separation anxiety. The story describes how the young gorilla finally was able to conquer his fears by using the most commonly used treatment techniques of CBT, like relaxation training (breathing), container exercise (worry bear), cognitive restructuring (stopping negative thoughts and replacing it with happy thoughts), etc. The story helps the separation anxiety stricken children to easily identify with the character and learn the necessary skills needed to overcome their anxiety with the help from parents, teachers and psychologists (when

required). These techniques were practiced during the sessions which enabled them to develop the needed skills to confront anxiety.

The second story *Boba Misha* was on selective mutism. The 5 year old character exhibits the symptoms of selective mutism. The concepts from play therapy (use of puppets) were used in CBT framework to overcome her anxiety. Puppets give children the opportunity to distance themselves from their problems and thus invaluable in engaging anxious children in intervention for anxiety (see Campbell 2009). The girl was able to relate to puppets in a non-threatening way in order to tell her own stories. Use of puppets in sessions not only revealed information about the anxious child, it also helped to enhance her abilities to discriminate among her thoughts, feelings and behaviors. In support of using puppets with young children it can be said that they respond well in interacting with puppets as they are still at an age of hands-on learning to internalize concepts. Campbell (2009) suggested that it is ideal to include puppets for treating anxious children.

The third book (*Vitur Dim Kumirchana*) was about a young crocodile living in the dense Sundarbans who is afraid of water body. The story was on specific phobia. Children with specific phobia are extremely fearful about a particular object (e.g. injection) or situation (e.g. flying, heights) or natural environment (storm, water etc.) and are avoidant of the fearful object or situation. The story describes the necessary steps the young crocodile took in order to overcome its fears. The techniques that were followed by him were graded exposure where anxiety-provoking situation were broken down into less threatening steps and the crocodile was exposed to the fear gradually, mastering one step at a time. Positive self-talk helped the crocodile to have control over its thoughts and feelings. In the sessions children used the techniques (graded exposure, positive self talk etc.) to take measures to manage their own anxieties by modeling the character. Through graded exposure children learn that an anxious situation is not necessarily as

intimidating as they expected it to be. Also they learned that they do have the skills to cope with any fearful situation if it can be broken down to manageable steps.

Children came to realize the benefits (promoting confidence and hope) of positive self talk by focusing on own resources which they usually overlook when worried.

The fourth story (*Lazuk Alien*) was based on social anxiety disorder, commonly known as social phobia. Children suffering from this disorder are fearful or anxious about social interactions and situations that involve the possibility of being scrutinized by others thus avoids such interactions and situations. The thought of being negatively evaluated by others constantly made him distressed. The story introduces the character of an educational psychologist who helped him to get rid of his social phobia. The story describes how ventilation (expressing oneself), positive self-talk, distancing (gradually distancing oneself from the anxiety provoking object or event by minimizing its intensity), linking between thoughts, feelings, physiological sensations and behavior, and cognitive restructuring (challenging anxious or negative thoughts) helped it to manage its fears and led to a happy and anxiety free life. These techniques were practiced by the children in the sessions with their own anxiety issues and they had real life experience of dealing with them which built confidence in them.

The fifth book was on generalized anxiety disorder named *Jami namer Notun Cheleti*. This boy had an ongoing apprehension that misfortunes of different range will occur and thus was under constant excessive worries. The story describes how this boy defeats his unnecessary worries by employing the CBT techniques such as, breathing and progressive muscular relaxation, talking back to the anxiety, container exercise etc. Breathing exercises (mindfulness and abdominal) and Progressive Muscular Relaxation exercises were taught to the children to calm their mind and body thus, managing their overwhelming anxiety. Here, breathing with balloons and bubbles and PMR with

imagination were practiced. Practicing the needed skills in a child friendly way also made them interested and helped them to comprehend easily. Considering anxiety as a separate entity rather than an integral part of self was achieved through externalizing anxiety by talking back to the anxiety. It helped the children to exercise control over the anxieties. In the session, these coping mechanisms were modeled by children to gain control over their anxious thoughts, feelings and behaviors.

The last one was an interactive self-help book named *Dhuschintar Chuti*. This guide book teaches children and parents, including teachers and counselors the CBT techniques which are used in the treatment of child anxiety. Developmentally appropriate metaphors and illustrations (by child artist) made the concepts and strategies easy to comprehend without overloading them with heavy theories. Psycho-education on anxiety was provided at the beginning of the book.

The techniques taught in the book are based on three principles commonly known as containment, externalizing, and competing demands adapted to children. The principle of containment was achieved through teaching children how to contain their worries/anxieties by creating Worry Box and scheduling Worry Time. Externalizing anxiety was taught through talking back to the worries, considering it as a separate entity rather than an integral part of the child thus exerting control over the anxieties. The principle of the competing demands embraces that a child cannot be both relaxed and anxious at the same time. Staying involved in pleasant, fun activities is an influential restraint to anxiety. Thus children learn how to be involved in their favorite activities and how they can distract themselves from anxiety. As anxiety upsets the physiological system, children are taught to reset their system by using relaxation techniques to soothe their body and mind (deep breathing, PMR, changing focus of attention etc.), and activity to burn off the extra energy that makes them uncomfortable. The techniques used in the

story and the self-help books were derived from the *Worrybuster* program (Campbell 2007), Friends for Life (Barrett, 2013), Take Action Program (Waters et al., 2008), Coping Cat (Kendall 1994, 2000) etc. These techniques of the CBT have been documented effective in reducing child anxiety (Koch & Fernando, 2018; Huebner, 2005; Tompkins & Martinez, 2009; Greenberger & Padesky, 2015; Beck, 2011). Separate intervention sessions were designed for each day by selectively allocating the stories and activities from the self-help book to each session. Necessary/relevant accessories were either made or collected for conducting the sessions. Thus a complete package of intervention tool was prepared.

There is no prescribed procedure/guideline available in literature to utilize bibliotherapy in a structured cognitive behavior therapy framework. Therefore, the researcher had to develop a procedure relying on her own understanding, comprehension and judgment. The field test revealed that anxiety level dropped significantly from the baseline to the follow up phase indicating the effectiveness of the intervention program. Also the child credibility ratings were encouraging. Nearly 75% to 87% children gave positive ratings to the intervention program. 87% mentioned it helped them with their difficulties, 80% said it reduced their fears, 75% said they can face their fears now. Both the stories and the sessions were liked by 85 % children. The rest liked either the stories or the sessions alone. Interestingly, 50% of the children said they found the character(s) of the story similar to them; one reason might be that eight (out of 20) were diagnosed as anxious children. 26% mentioned that the characters are similar to other children they have known and the rest (24%) picked the option “Can’t say”. The most liked part of the program was drawings, followed by breathing exercises with balloons, naming the emotions and indicating its intensity through the mood-o-meter, positive self-talk, talking back to the anxieties, role playing, graded exposure and etc.

Parental ratings indicate that 94% of them found the intervention effective in reducing their child's anxiety symptoms, 98% said their children liked the program, and 95% thought that the intervention would be able to manage other children's anxieties. These ratings give additional support that the intervention program was effective in reducing anxiety among these children.

Considering the evidence from the field test, it can be said that the intervention program is likely to reduce anxiety among young children. This possibility was examined and the findings are presented in Chapter 6.

## Chapter 6

### Assessing Effectiveness of Intervention Tools

#### 6.1. Introduction

In the previous chapter development of intervention program based on integrating the CBT model with bibliotherapy were discussed and the field test also have shown promising results. The present chapter aims to test the effectiveness of the intervention program in school setting/ large scale through quantitative and qualitative measures. The effectiveness of cognitive behavior therapy in community setting has been demonstrated (Silverman et al., 2008);(Walkup et al., 2008); see meta-analysis (Ishikawa et al., 2007; Tomb & Hunter, 2004). Also a good number of research studies have validated the cognitive model of depression and of anxiety (Wong, Ng, Ip, Chung, & Choi, 2018). Compare to CBT, studies to test the effectiveness of the bibliotherapy in treating anxiety disorders is not sufficient. But there is a great implication of bibliotherapy in working with children. (Heath et al., 2005) reported use of bibliography in intervention programs helps to promote emotional and behavioral growth. In relation to children's cognitive developmental level relevant stories represent true-to-life situations (see Campbell 2009). Through the stories, children can be steered into discussion regarding the implications of a story in a less threatening way which is much easier to achieve than talking solely about themselves. It is important that children are able to consider their own thoughts and feelings about personal issues from the point of view of 'the other' which can be achieved through stories. Stories help children learn that they are not alone with the problem, that others share similar problems too. Empathy and insight into their own and others' problems can be developed through reading about others. Relevant to this, quote from a neurologist can be presented. *"A story activates parts of the brain that allows the listener*

*to turn the story into their own ideas and expression. Listener's brain activity mirrors the speaker's brain activity with a delay” (Stephens et al., 2010).*

Thus story books introduce to children concepts relevant to anxiety management, teach them to choose various cognitive-behavioral strategies, and apply them to solve their day to day problems (Muris, Mayer, Borth, & Vos, 2013). As some researchers (Jimerson, Stewart, Skokut, Cardenas, & Malone, 2009) have put forward that psychologists are practicing in many schools throughout the world including Bangladesh and they are in a unique position to offer interventions, such as cognitive-behavioral therapy (CBT) that may improve students well-being.

The developed intervention program was designed with the purpose to reduce anxiety of the children by exploring their physiology, thoughts, feelings and behaviors associated with anxiety. The program focused mainly on two aspects:

- a) Teaching coping skills to deal with anxiety through bibliotherapy couched within CBT framework.
- b) Challenging participants to face their fears using the coping skills as described in the story and interactive self-help books.

Therefore, the developed intervention program needs to be tested for its effectiveness in school setting with school children.

### **6.1.1 General Objective**

The objective of the present study was to assess the effectiveness of the intervention tools in school setting by multiple measures.

### **6.1.2 Specific Objectives**

To assess the effectiveness of the developed intervention program through



- i) Bangla Child and Adolescent Worry Scale (CAWS)
- ii) Bangla Spence Children Anxiety Scale (SCAS)
- iii) Bangla Spence Children Anxiety Scale (SCAS-P)
- iv) Treatment credibility questionnaires

## **6.2. Method**

**6.2.1 Study design:** A quasi-experimental mixed design was employed where phase (pre-test vs. post test) was the within subject variable and the condition (control vs. experimental), sex (girls vs. boys), and age (young vs. older) were between subjects variables.

### **6.2.2 Participants**

**i) Child participants:** A total number of 155 primary level school children participated in the present study. The number of participants in Experimental and Control group was 90 and 65 respectively. Among them 91 were boys and 64 were girls. Their age range was from 6 to 12 years coming from different socio-economic status. They were students of class one to five studying at Government primary school and private public schools of Dhaka and Chittagong city (4 schools). The participants were divided into two age groups. For the younger group the age range was from 6 to 8 years (N=60). And for the older group the age range was from 9 to 12 years (N=95).

**Inclusion criteria:** Primary level school going children living with parents and not under psychiatric medications or/and counseling session. Their age limit was from 6 to 12 years. Among them who participated in all the sessions of the intervention program and filled out the pre and post test scales.

**Exclusion criteria:** Mentally challenged children and children with autism. Also the participants who did not completed the whole program.

**ii) Parent participants:** The parents of 155 school going children were also the participants of the study. They rated their children’s level of anxiety. Those parents were selected who regularly brought the child to the school and gave consent to participate in the study along with their children. Among the parents 98 (63.2%) were mothers and the rest 57 were fathers (36.8%). They belonged to all types of socio-economic status i.e. 6 (3.9%) were from low, 115 (74.2%) were from middle and 34 (21.9%) were from high socio- economic status. Their educational qualification ranged from under SSC to post graduation (under SSC 26, SSC 28, HSC 37, graduate 35 and post graduate 29).

Table 6.1: *Number of child participants according to age, sex and condition*

Group	Age	Boys	Girls	Total
Experimental	Younger	26	14	40
	6 to 8 yrs			
	Older	25	25	50
	9 to 12 yrs			
Total		51	39	90
Control	Younger	11	9	20
	6 to 8 yrs			
	Older	29	16	45
	9 to 12 yrs			
Total		40	25	65
Grand Total		91	64	155

**6.2.3 Sampling Technique:** Participants were selected through convenient sampling technique. Only those schools and participants were taken who agreed to participate in the program voluntarily.

Table 6.2: *Research planning/Design*

Group	Pre-test	Intervention	Post-test
Experimental	CAWS	1day/week for 4	CAWS
	SCAS	Consecutive weeks	SCAS
	SCAS-P		SCAS-P
			Other measures
Control	CAWS	No intervention	CAWS
	SCAS		SCAS
	SCAS-P		SCAS-P

**Training of the research assistants:**

Four master level trainee educational psychologists were trained by the researcher to conduct the intervention training with the researcher.

**6.2.4 Instruments:**

**Measures:** To determine the effectiveness of the intervention program the three adapted scales as described in chapters 2, 3, and 4 were used. These were CAWS, SCAS, and SCAS-P.

Treatment credibility questionnaires were used to collect children and parents' rating on the intervention program.

Demography Questionnaire was used to collect information regarding their age, sex, educational level etc.

**Story Books:** The following developed 5 story books and an interactive self-help workbook were also used (as described in Chapter 5).

- i) ***Vitu Kayar Golpo*** (The Frightened Kaya)
- ii) ***Boba Misha*** (Mute Misha)
- iii) ***Vitur Dim Kumirchana*** (The Frighten Crocodile)
- iv) ***Lajuk Arian*** (Shyful Arian)
- v) ***Jami Namer Notun Cheleti*** (The New Boy named Jami)
- vi) **Self-help Activity Book: *Dhuschintar Chuti*** (Get Rid of Your Worries)

#### **6.2.5 Other materials:**

Puppets, stuffed animal toys, color pencils, pens, paper for drawing, scissor and poster paper for making masks and puppets, bubble pots, balloons, mirror, silhouette of body image, worry bear, worry box, worry tree, poster of emotion words, pictures of emotion, mood-o-meter and power point presentations/handmade posters based on the story and self-help books .

#### **6.2.6 Techniques applied-**

Various CBT techniques, such as Psychoeducation, Relaxation training, Role play, Visualization/ Imagery, Cognitive restructuring, Talking back to the anxieties, Distancing, Container exercise, Graded exposure and Positive self talk were used in the present intervention. These are described in Chapter 5 (pp. 127-130).

**6.2.7 Procedure:** To carry out the purpose three scales (CAWS, SCAS and SCAS-P) were administered as pre- and post test measures and the ratings of parents and children were collected through the treatment credibility questionnaires.

To measure the effectiveness of the developed intervention tools (6 books), a systematic and well planned intervention program was carried out according to the module (as described in Tables 5.1 - Tables 5.8 in Chapter 5, pp. 125-133) in 5 settings of 4 different mainstream schools of Dhaka and Chittagong city. Written consent from parents and school authorities were taken. For the younger group the age range was from 6 to 8 years. And for the older group the age range was from 9 to 12 years. With two different age groups separate story books and slightly different approaches were taken considering their developmental age. For the Experimental group the intervention programs were conducted and no intervention was given to the Control group apart from administering the pre and the post tests. The common steps were-

**Pre-test:** Administering 3 adapted anxiety scales on the first session.

**Intervention:** One-hour 30 minutes session per week for four consecutive weeks (Experimental group only)

**Post-test:** Again administering the adapted 3 scales along with the treatment credibility questionnaires at the end of the training sessions.

Written and verbal feedback from the participants, parents and teachers were collected regarding the intervention program.

*Feedback:* Attendance records were kept for all sessions. Participants were required to complete treatment credibility questionnaire at the end of the program. The parents of the children were asked to fill in a questionnaire at the conclusion of the program. Teachers were also asked in general how the children are coping in class and their feelings/opinion about the program. Observations of the researcher and research assistants were noted down.

### **6.2.8 Data processing and analysis**

All data were analyzed by computer program SPSS version 16. The data analyses were done in several steps. At first all responses were screened manually to detect incomplete/ambiguous data. Descriptive statistics were calculated for a description of the data. Frequency and percentage were used to describe categorical variables while mean and standard deviation were used to depict continuous variables. Due to non-normality of data, CAWS scores were log transformed to bring the distribution to normal. In case of SCAS and SCAS-P assumptions of mixed ANOVA were satisfied.

## **6.3. Results**

### **6.3.1 Part A: Assessing the effectiveness of the Intervention tools by CAWS**

#### **Descriptive statistics**

Table 6.3 represents the mean and standard deviation of the CAWS scores (log transformed) according to phase, condition, age and sex (see next page).

Table 6.3: Descriptive statistics of CAWS scores according to phase, condition, age and sex

Phase	Condition	Age category	Sex	Mean	Std. Deviation
CAWS pre- test_Log transformed	Control	young	Boy	1.21	.136
			Girl	1.17	.120
		old	Boy	1.16	.133
			Girl	1.33	.102
	Experimental	young	Boy	1.27	.084
			Girl	1.28	.082
		old	Boy	1.23	.154
			Girl	1.25	.148
	Total	young	Boy	1.25	.102
			Girl	1.23	.111
		old	Boy	1.19	.145
			Girl	1.28	.138
CAWS post test_Log transformed	Control	young	Boy	1.23	.149
			Girl	1.15	.131
		old	Boy	1.16	.131
			Girl	1.30	.102
	Experimental	young	Boy	1.13	.111
			Girl	1.16	.114
		old	Boy	1.07	.118
			Girl	1.11	.115
	Total	young	Boy	1.16	.127
			Girl	1.16	.119
		old	Boy	1.12	.133
			Girl	1.18	.143

Findings indicate that the main effect of phase was significant,  $F(1, 147) = 60.843$ ,  $\eta_p^2 = .293$ ,  $p = .001$ . As expected, the interaction between phase and condition was significant,  $F(1, 147) = 48.833$ ,  $\eta_p^2 = .249$ ,  $p = .001$ . Bonferroni post-hoc tests indicate that in post-test phase worry score of control group was significantly higher than that of the

experimental group, mean difference = .092, 95% CI [.05, .134],  $p = .001$ . However, no significant difference was found between the control and experimental groups in pre-test phase, mean difference = .038, 95% CI [-.005, .082],  $p = .084$ .

No difference in worry score was found between the pre- and post-test phases of the control group, mean difference = .008; 95% CI [-.021, .036];  $p = .603$ . But pre and post-test phases differed significantly in the experimental group (i.e. pre-test worry scores dropped significantly in the post-test of the experimental condition), mean difference = .138; 95% CI [.115, .161];  $p = .001$ .

Result indicates that the interaction between condition and age was significant,  $F(1, 147) = 5.781$ ,  $\eta_p^2 = .038$ ,  $p = .017$  so was between age and sex,  $F(1, 147) = 7.826$ ,  $\eta_p^2 = .051$ ,  $p = .006$ . The interaction between condition, age and sex was also significant,  $F(1, 147) = 6.389$ ,  $\eta_p^2 = .042$ ,  $p = .013$ . Bonferroni post-hoc tests indicate that older girls were more worried in the control than in the experimental condition, mean difference = .135, 95% CI [0.064, 0.207],  $p = .001$ . Worry scores of younger boys did not differ significantly between the control and experimental conditions, mean difference = .017, CI [-.064, .098],  $p = .679$ . Similarly, younger girls of control and experimental conditions did not differ significantly with respect to their worry scores, mean difference = .058, 95% CI [-.150, .035],  $p = .221$ . Older boys worry scores did not differ between the control and experimental conditions, mean difference = .012, 95% CI [-.048, .072],  $p = .688$ . Bonferroni post hoc tests showed that in the control condition older girls had significantly higher worries than younger girls, mean difference = .152; 95% CI = .062, .242;  $p = .001$ ). No difference was exhibited between younger and older boys in the control condition, mean difference = .056; 95% CI [.024, .136];  $p = .169$ . In the experimental condition there was no difference between younger and older boys, mean difference =

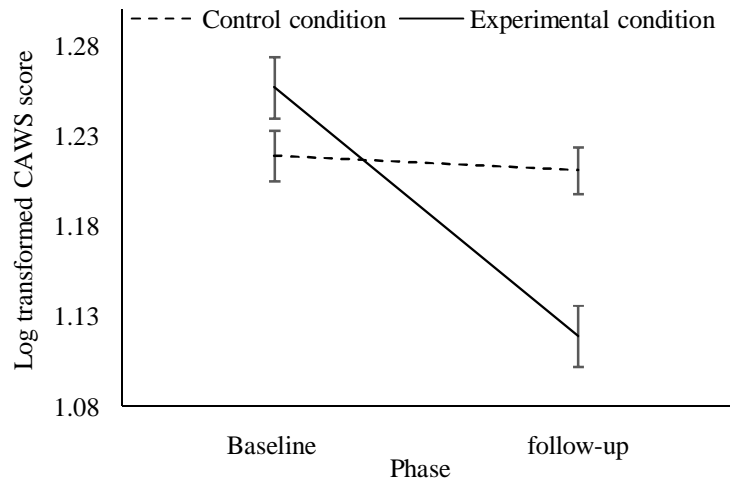


.051; 95% CI [-.010, .113];  $p = .102$ . Same was applicable for the girls in the experimental condition, mean difference = .041; 95% CI [-.034, .115];  $p = .282$ .

Bonferroni post hoc also revealed that in the control condition older girls were significantly more worried than older boys, mean difference = .151; 95% CI [.082, .221];  $p = .001$ . It showed that younger boys and girls did not differ significantly, mean difference = .057; 95% CI [-.042, .155];  $p = .255$ . In the experimental condition, there was no significant difference between younger boys and girls, mean difference = -.018; 95% CI [-.092, .056];  $p = .638$ . Also in the same condition (i.e. in the experimental condition), worry did not differ between older boys and girls, mean difference = -.028; 95% CI [-.091, .034];  $p = .369$  which are presented in Table 6.4 (see next page).

Table 6.4: Non-significant main and interaction effects according to CAWS

Variables	F	df	F	$\eta_p^2$
Condition	1.874	1.147	.173	.013
Age	.002	1.147	.962	.000
Sex	3.242	1.147	.074	.022
Phase x age	.982	1.147	.323	.007
Phase x sex	.086	1.147	.770	.001
Phase x	.145	1.147	.703	.001
Cond. x age				
Phase x	2.526	1.147	.114	.017
Cond. x sex				
Phase x age x	.008	1.147	.927	.000
sex				
Phase x	.000	1.147	.989	.000
Cond.				
Cond. x sex	.383	1.147	.537	.003
Cond. x age x	6.389	1.147	.013	.042
sex				



*Figure 6.1:* Worry in the baseline and follow-up phases of the control and experimental conditions according to the CAWS scores. Error bars are standard errors.

### 6.3.2 Part B: Assessing the effectiveness of the intervention tools through SCAS

The descriptive statistics of the SCAS scores according to phase, condition, age and sex are presented in the following table.

Table 6.5: *Descriptive statistics of the SCAS scores according to phase, condition, age and sex*

Phase	Condition	age category	sex	Mean	stander deviation	N	
SCAS Pre-test	control	young	Boy	48.10	15.495	10	
			Girl	42.20	13.506	10	
		old	Boy	45.67	10.838	30	
			Girl	59.00	7.483	15	
	experimental	young	Boy	51.48	11.260	27	
			Girl	51.54	10.619	13	
		old	Boy	49.63	16.360	24	
			Girl	51.65	14.252	26	
	SCAS Post-test	control	young	Boy	49.50	18.204	10
				Girl	40.70	16.077	10
		old	Boy	45.23	7.578	30	
			Girl	57.87	8.887	15	
experimental		young	Boy	34.93	9.215	27	
			Girl	37.23	12.788	13	
		old	Boy	30.79	9.926	24	
			Girl	35.35	13.347	26	

Results indicate that the main effect of the phase (pre and post test) was significant,  $F(1,147) = 93.035, \eta_p^2 = .388, p = .001$ . Also the main effect of condition (control and experiment) was significant  $F(1,147) = 8.735, \eta_p^2 = .056, p = .004$ .

The interaction between the phase and the condition was found to be significant  $F(1, 147) = 84.094, \eta_p^2 = .364, p = .001$ . Bonferroni post hoc tests showed in pre-test phase there was no difference between control and experimental condition regarding anxiety,

mean difference = -2.333, 95% CI [-6.759, 2.093],  $p = .299$ . But in post-test phase, anxiety was higher in control condition than that of experimental condition (mean difference = 13.75, 95% CI [9.806, 17.696],  $p = .0001$ ). Similarly, in control condition anxiety did not differ in pre and post tests, mean difference = .417; 95% CI [-2.284, 3.118],  $p = .761$ . But in experimental condition anxiety score of pre-test was greater than that of post test, mean difference = 16.50, 95% CI [14.33, 18.67],  $p = .001$ .

The interaction between condition and age was significant,  $F(1, 147) = 5.138$ ,  $\eta_p^2 = .034$ ,  $p = .025$ , so was between age and sex,  $F(1, 147) = 8.438$ ,  $\eta_p^2 = .054$ ,  $p = .004$ .

The three way interaction between the condition, age and sex was found to be significant  $F(1, 147) = 5.562$ ,  $\eta_p^2 = .036$ ,  $p = .020$ . Bonferroni post hoc tests showed young boys did not differ in control and experimental condition regarding anxiety, mean difference = 5.596, 95% CI [-2.445, 13.638],  $p = .171$ . Young girls also did not show any difference in anxiety between control and experimental condition, mean difference = -2.935, 95% CI [-12.072, 6.203],  $p = .527$ . There was no difference in the anxiety of older boys in control and experimental condition, mean difference = 5.242, 95% CI [-7.08, 11.191],  $p = .084$ . Older girls of control condition had significantly higher anxiety as compared to the older girls of experimental condition, mean difference = 14.933, 95% CI [7.89, 21.977],  $p = .001$ .

In control condition, both the young and older boys had no significant difference in their level of anxiety, mean difference = 3.350, 95% CI [-4.582, 11.282],  $p = .405$ . In the same condition, girls' anxiety score differed regarding their age category i.e. in the control condition young girls had significantly less anxiety than the older girls, mean difference = -16.983, 95% CI [-25.852, -8.115],  $p = .001$ . In the experimental condition, both the boys and girls did not differ in anxiety regarding their age category (young and older). In other

words, there was no difference between young and older boys regarding anxiety in the experimental condition, mean difference = 2.995, 95% CI [-3.099, 9.09],  $p = .333$ ). Also no difference in anxiety between the young and older girls, mean difference = .885, 95% CI [-6.494, 8.264],  $p = .813$ .

In control condition, young boys and girls did not differ in their level of anxiety (mean difference = .7.35; 95% CI= -2.365, 17.065;  $p = .137$ ). In contrast, older boys and girls differed in their anxiety level. Older girls had higher level of anxiety compare to older boys (mean difference = .12.98, 95% CI [6.11, 19.85],  $p = .001$ ). In experimental condition, young boys and girls also did not differ in terms of anxiety (mean difference = 1.18, 95% CI [-8.51, 6.15],  $p = .75$ ). In the same condition, older boys and girls have no differences regarding anxiety (mean difference = 3.29, 95% CI [-2.86, 9.44],  $p = .292$ ).

Table 6.6: *Non significant main and interaction effects of phase, condition, age and sex according to SCAS*

Variables	F	df	p	$\eta_p^2$
Age	1.593	1,147	.209	.011
Sex	1.711	1,147	.193	.012
Phase x age	.670	1,147	.414	.364
Phase x age	.028	1,147	.867	.001
Phase x	.161	1,147	.689	.001
Cond. x age				
Phase x	1.424	1,147	.235	.01
Cond. x sex				
Phase x	.125	1,147	.724	.001
Age x sex				
Phase x	.075	1,147	.784	.001
Cond. x				
Age x sex				
Cond. x sex	.023	1,147	.881	.001

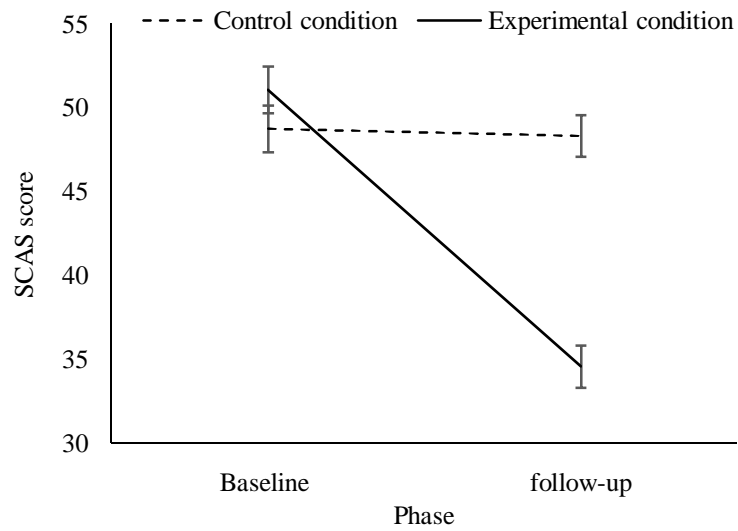


Figure 6.2: Child report of anxiety in the baseline and follow-up phases of the control and experimental conditions. Error bars are standard errors.

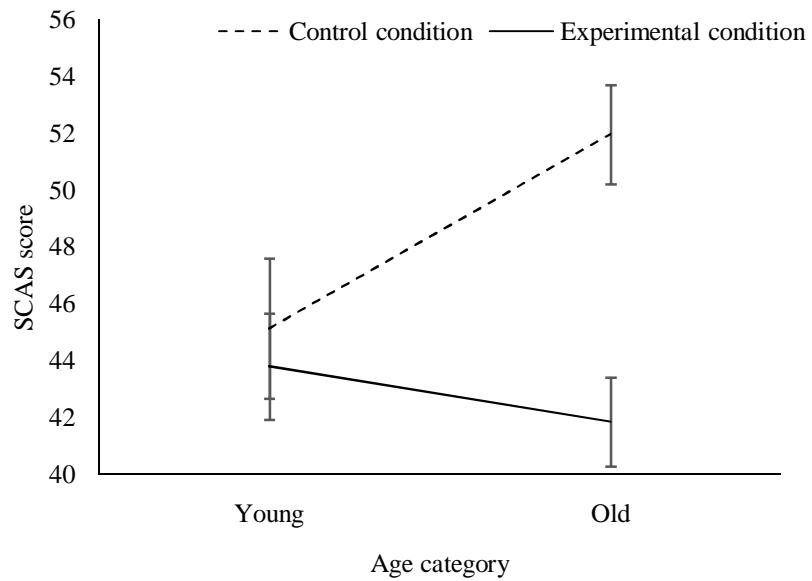


Figure 6.3: Anxiety of young and old children in the control and experimental conditions. Error bars are standard errors.

### 6.3.3 Part C: Assessing the effectiveness of the intervention tools by SCAS-Parent version

The descriptive statistics of the SCAS-P scores according to phase, condition, age and sex are presented in Table 6.7.

Table 6.7: Mean and standard deviation of the scores in the SCAS-Parent version according to phase, condition, age and sex

Phase	Condition	Age category	Sex	Mean	SD	N
Pre-test SCAS-P	control	young	Boy	41.00	11.392	10
			Girl	35.60	6.569	10
		old	Boy	40.63	9.793	30
			Girl	48.47	8.676	15
	experimental	young	Boy	45.56	12.906	27
			Girl	49.85	15.143	13
		old	Boy	35.08	12.738	24
			Girl	36.92	11.253	26
Post test SCAS-P	control	young	Boy	40.60	12.103	10
			Girl	31.90	6.367	10
		old	Boy	43.03	8.676	30
			Girl	48.73	7.076	15
	experimental	young	Boy	32.41	7.885	27
			Girl	36.46	10.929	13
		old	Boy	23.42	9.079	24
			Girl	25.50	9.733	26

The main effect of phase was significant,  $F(1, 147) = 75.49, \eta_p^2 = .339, p = .001$ , so was the main effect of condition,  $F(1, 147) = 11.42, \eta_p^2 = .072, p = .001$ . As expected, the interaction between phase and condition was significant,  $F(1, 147) = 67.26, \eta_p^2 = .314, p = .001$ . Bonferroni post-hoc tests indicate that in the pre-test phase there was no difference in parent's rating of anxiety between the control and experimental conditions, mean difference =  $-.43, 95\% \text{ CI } [-4.41, 3.56], p = .883$ . However, significant difference in



anxiety was found between the control and experimental groups in the post-test phase, mean difference = 11.62, 95% CI [8.50, 14.74],  $p = .001$ . The parents of the control condition reported more anxiety in their children than the parents of the experimental condition.

No difference in anxiety was found between the pre- and post-test phases of the control group, mean difference = 0.36, 95% CI [-1.90, 2.62],  $p = .75$ . But pre- and post-test phases differed significantly in the experimental group (i.e. compare to pre-test, anxiety scores dropped significantly in the post-test), mean difference = 12.41, 95% CI [10.59, 14.22],  $p = .001$ .

The interaction between condition and age was significant,  $F(1, 147) = 32.14$ ,  $\eta_p^2 = .179$ ,  $p = .001$ . The interaction between condition, age and sex was also significant,  $F(1, 147) = 5.85$ ,  $\eta_p^2 = .038$ ,  $p = .017$ . Bonferroni post hoc tests indicate that in case of young boys there was no difference in anxiety as assessed by the parents in both the control and experimental conditions, mean difference = 1.812, 95% CI [-5.08, 8.71],  $p = .603$ . However, young girls had higher anxiety in the experimental than the control condition as assessed by their parents, mean difference = -9.41, 95% CI [-17.24, -1.57],  $p = .019$ . Both older boys and girls were significantly more anxious in the control than the experimental condition, mean difference for older boys = 12.58, 95% CI [7.48, 17.68],  $p = .001$ ; mean difference for older girls = 17.39, 95% CI [11.35, 23.43],  $p = .001$ .

Bonferroni post hoc tests show that in the control condition, anxiety of boys did not differ according to age category. That is, parent-reported anxiety of the younger and older boys was similar in the control condition, mean difference = -1.03, 95% CI [-7.84, 5.77],  $p = .764$ . However, parent-reported anxiety of the older girls were higher than of the younger girls in the control condition, mean difference = 14.85, 95% CI [-22.45, -7.25],  $p$

=.001. In the experimental condition, parent-reported anxiety of the younger boys was significantly higher than of the older boys, mean difference =9.73, 95% CI [4.51, 14.96],  $p = .001$ . Same was applicable for the girls in the experimental condition, mean difference = 11.94, 95% CI [5.62, 18.27],  $p = .001$ .

Bonferroni post hoc tests also reveal that in the control condition there was no difference in anxiety between younger boys and girls according to their parents' assessment, mean difference =7.05, 95% CI [-1.28, 15.38],  $p = .097$ . It showed that the older girls in the control condition were rated as more anxious than the older boys, mean difference = -6.77, 95% CI [-12.66, -.88],  $p = .025$ . In the experimental condition, there was no difference between younger boys and girls, mean difference = -4.17 95% CI [-10.46, 2.12],  $p = .192$ . Also in the same condition (i.e. in the experimental condition), anxiety did not differ between the older boys and girls, mean difference = -1.96, 95% CI [-7.23, 3.31],  $p = .463$ .

The remaining main and interaction effects were not significant which are presented in Table 6.8 (see next page).

Table 6.8: Non-significant main and interaction effects of phase, condition, age and sex

Variables	F	df	<i>p</i>	$\eta_p^2$
Age	.76	1,147	.005	.38
Sex	.78	1,147	.005	.38
Phase x age	3.02	1,147	.02	.08
Phase x sex	.85	1,147	.36	.006
Phase x				
Cond. x age	.32	1,147	.57	.002
Phase x				
Cond. x sex	.86	1,147	.36	.006
Phase x				
Age x sex	.08	1,147	.78	.001
Phase x				
Cond. x				
Age x sex	.014	1,147	.000	.91
Cond. x sex	.94	1,147	.33	.006
Age x sex	3.07	1,147	.08	.02

The interaction between the phases and conditions is presented in Figure 6.4.

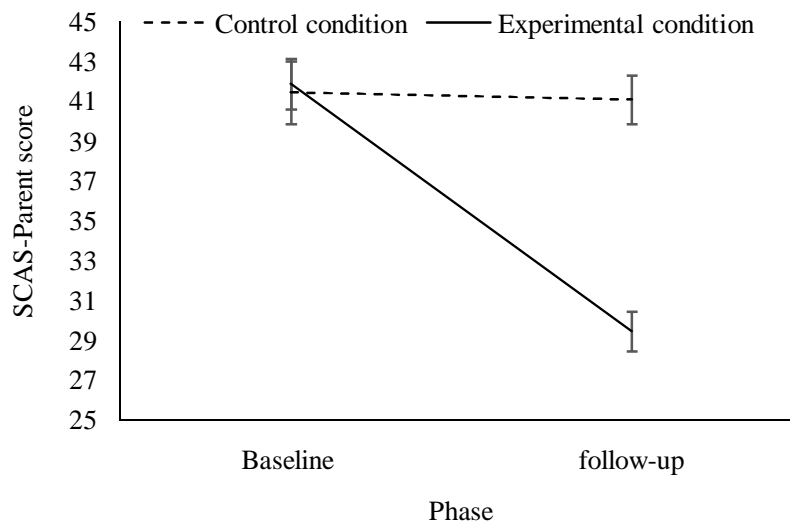


Figure 6.4: Parental report of child anxiety in the baseline and follow-up phases of the control and experimental conditions. Error bars are standard errors.

#### **6.3.4 Qualitative assessment of the intervention program**

In addition to quantitative approach, the effectiveness of the intervention program was also examined with treatment credibility questionnaires. Parents' credibility measure shows positive ratings in all 5 questions. Their agreement was in between 92% to 98%. More than 81% to 92% mentioned they liked the program and it helped them to reduce their fears. Both the stories and the sessions were liked by 86 % children. The rest liked either the stories or the sessions alone. Nearly half (46%) of the children said they found the character(s) of the story similar to them which might be considered as an indication of the prevalence of anxiety problems in the children. Of the remaining children, 21% mentioned that these characters were similar to other children they had known and the rest picked the option "Can't say". The most liked part of the program from best to least were breathing exercises with balloons, mood-o-meter/fear thermometer, role playing, talking back to the anxieties, drawing and so on. These findings support that the intervention program was effective in reducing anxiety among the children.

Following are some of the verbatim comments of the children.

*"Now I can touch lizards, its body is soft. I'm not afraid anymore".*

*"I breath in 'courage' and breath out 'fears', whenever I feel scared to talk".*

*"When I feel afraid I think of the good stuffs I have done and boldly rebuke the 'pocha' thoughts".*

*"Just like Misha (character in selective mutism), now I've made a friend. 'X' is my best friend now... we sit together now".*

*"I'm no more afraid of barking dogs. I can't touch them, still its little scary".*

*"I liked the PMR exercise mostly, it's fun yet helps me".*

*“I can measure my level of fear through fear meter and after doing deep breathing, it goes down”.*

*“I could attend my class test without sickness after such a long time”.*

*“This boy (character) resembles me. Like him I practiced breathing...said good things about myself ..... and now I’m not afraid anymore”.*

Parents also reported that the program has reduced the level of anxiety in their children.

One mother reported,

*“My daughter is happy and confident now. I can see the differences she stopped twitching her fingers..... silly thoughts are much less now. You know she even made a presentation in front of the class”.*

A parent said,

*“My son is much happy nowadays..... He mentioned about the program he is attending and said that it’s helping him. He willingly comes to the school, especially on the day the program is scheduled”.*

Another parent of 6 year old reported,

*“My daughter can sleep alone in her bed, which I was trying so hard to achieve.....How did you manage it?”*

### **6.3.5 Observation of the researcher and research assistants**

It was observed that the children responded well to the stories and role playing with puppets (crocodile, cat, bear etc.). They especially liked making paper puppets, worry tree, ‘My strength book’ and coloring/decorating them with stickers. Older children were more engrossed in the stories especially the stories on generalized anxiety disorder (story

of Jami) and social anxiety disorder (an alien character). Most young aged children enjoyed the story on specific phobia (the character of Gama).

#### **6.3.6 Feedback from stakeholders**

Feedback from stakeholders (i.e. parents, teachers and children) supported the effectiveness of the school-based intervention program in minimizing anxiety among children. Class teachers reported that a number of children overcame their shyness and became more responsive in the class. Absenteeism of some children was reduced. Teachers mentioned particularly of four children who were able to make a presentation in front of the class. These children used to avoid talking to the class at any cost.

### **6.4 Discussion**

The present study investigated the effectiveness of the intervention program described in Chapter 5. The intervention program is based on the theory of cognitive behavior therapy and consists of 5 stories and an interactive self-help book. Primary school children received the intervention in school settings. As best practice rely on multi-informants (e.g., teachers, parents and students) with multi-methods (e.g., self-report, parent/teacher report and observations; (Kerr, Lunkenheimer, & Olson, 2007; De Los Reyes et al., 2015; Kraemer et al., 2003; Headley & Campbell, 2013), three anxiety measures (as described in Chapters 2, 3 and 4 ) were administered to the children and their parents in pre- and post-test phases of the 4-week intervention.

There was no intervention in the control condition but pre- and post-measures were taken with an interval of 4 weeks. Participants (i.e. children and their parents) provided their feedback on the treatment credibility questionnaires which served as secondary measures for the effectiveness of the intervention. Feedback on the intervention was also taken from the teachers.

#### **6.4.1 Effectiveness of the intervention program as assessed by the questionnaires**

Worry and anxiety scores as obtained from the three questionnaires (i.e., the CAWS, SCAS, and SCAS-P) indicated that the intervention program was effective in reducing the worry and anxiety of school children. All the three scales indicate that anxiety scores dropped from pretest to post-test in the experimental condition but not in the control condition. The effects of age and sex were non-significant across the three scales.

Scores on all the three scales indicate that older girls in the control condition were more anxious than the older girls in the experimental condition, and older boys and younger girls in the control condition. Though studies suggest that girls are more prone to anxiety than boys (Locker & Cropley, 2004), the non-random allocation of participants to different groups in the present study precludes any such conclusion to draw regarding the differences in anxiety between boys and girls. For the same reason, no firm conclusion about the relationship between age and anxiety can be reached though the finding that the younger children were more anxious than the older children in the experimental condition.

As is evident in the result section, the results of the three measures corresponded to each other. However, the little variation between the reports of children and their parents reflects the issue of low agreement regarding internalizing disorders (Achenbach et al., 1987; Rey, Schrader, Morris-Yates, 1992; Rapee et al., 1994). Internalizing problems such as anxiety is a subjective feeling and relatively difficult to observe than externalizing problems like aggression and therefore they produce disagreements between children and their parents (Achenbach, 2006). The findings of the study are consistent with those of other studies on CBT for youth anxiety disorders (Kendall et al., 2008; Flannery-Schroeder, Suveg, Safford, Kendall, & Webb, 2004; Walkup et al., 2008).

#### **6.4.2 Underlying mechanism for the effectiveness of the intervention program**

Each of the coping stories involved a character who deals with an anxiety provoking situation. The characters, like anxious children, experience anxiety related somatic, cognitive and affective symptoms. The stories help children to connect their thoughts and feelings to their physiological responses. Throughout the sessions the researcher used modeling, role-playing, and verbal and social reinforcement. The sessions also involved cognitive restructuring and imaginal practice of the skills learned. Each session focused on identifying feelings/mood state and its level of intensity. Through cognitive restructuring children were able to identify their anxious thoughts and understand how their thoughts affect their feelings. It helped the children to challenge their anxiety and negative thoughts by using more realistic evidence from their past experiences, general knowledge, and deductive reasoning. They used this evidence to form new realistic thoughts (i.e., smart/strong thoughts) to replace their prior anxious/negative thoughts and beliefs. Thus the cognitive restructuring used in the present intervention program targeted corresponding underlying psychological processes. In this program, children also learned when to use stop sign and when to challenge their negative thoughts, how to use positive self-talk and talk back to their anxious thoughts. These taught them assertiveness and gave them the ability to have control over their anxious thoughts and feelings. Children were exposed to their anxiety eliciting threats/stimuli through the graded exposure. Here, anxiety-provoking situations were broken down into less threatening steps and the children were exposed to their fears gradually, mastering one step at a time as if advancing up the steps of a ladder. At each step children were taught to use three strategies, namely being aware of anxiety, using keep calm techniques, and thinking smart/strong thoughts. Recent neuroscience studies have shown that controlled verbal processing, such as



reappraisal/review and labeling, can enhance inhibitory learning during extinction (i.e., exposure therapy) through activation of prefrontal cortex regions that soothe amygdale based emotional responses (e.g., Tabibnia, Lieberman, & Craske, 2008). Thus before attempting each steps of the ladder, a verbal response was identified in the session that combined labeling and reappraising. To calm their anxious mind and body signals (i.e., somatic management) they learned to use breathing exercises, progressive muscular relaxation and container exercises (worry box/worry bear). Role playing the necessary skills needed to manage anxiety and verbalizing them helped to prepare themselves for real life challenges. All the activities of the program along with the stories helped the children to have a better understanding of their anxiety and develop skills to cope with it.

Various child friendly materials were used to establish rapport in the sessions. It helped them to stay interested, focused, and involved in the program. (Kendall et al., 1997) mentioned that developmentally sensitive materials may facilitate involvement and thus increase treatment efficacy. The toys, puppets, pictures and drawings used in the present study were age appropriate and they might have enhanced the effectiveness of the intervention.

#### **6.4.3 Difficulties faced in implementing the intervention program**

The researcher faced some difficulties during the implementation of the program. It was difficult for some young children to grasp the abstract concepts of the intervention such as how thoughts and feelings affect behavior. To address the problem, they were provided further explanations on the matter. This challenge of working with young children is consistent with other studies which also reported similar observations (see Eisen & Silverman, 1993).

#### **6.4.4 Limitations and future directions**

The post test phase in the present study was carried out immediately after the intervention. The long-term effect of the program is therefore unknown. Future studies can address this issue by incorporating one or more follow-up phases by assessing the anxiety of children, say, one and six months after the intervention. Involving parents in the program is suggested, as they can support their children to deal with anxiety. However, the literature in this area is still limited and more work is necessary to replicate existing findings and reach more definite conclusions.

Another limitation of the present study was that the control group did not receive any intervention. It can therefore be argued that the change in anxiety in the experimental group was a placebo effect and not due to the intervention program. This however is unlikely as the effectiveness of the program was reported by both the children and their parents. Further studies are needed to address this issue where the control group would be engaged in tasks irrelevant to anxiety.

#### **6.4.5 Conclusion**

The present study is the first administration and evaluation of a school based story supported cognitive-behavioral therapy (CBT) program for youth anxiety disorders in Bangladesh. Findings indicate that the intervention program is effective in reducing anxiety in youths and thus has the potential to improve their mental health and quality of life.

## **Chapter 7**

### **General Discussion**

#### **7.1 General Discussion**

Experiencing emotional states such as anxiety is a universal phenomenon (Spielberger, 2006). Today, the most prevalent mental health problems affecting children and adolescents are anxiety disorders (Beesdo et al., 2009; Waters et al., 2008; Baumeister & Härter, 2007). Anxiety disorders produce adverse social and educational outcomes for youths and interfere most areas of their lives, the effects of which might continue to adulthood (Spence et al., 2001). It is therefore essential to develop programs to assess anxiety in youths and provide them with necessary supports if necessary. In Bangladesh, however, no such program has yet been developed. The present PhD project addressed this issue. Studies have been carried out to adapt assessment tools to measure anxiety in primary school children of Bangladesh, develop a school-based CBT program to reduce their anxiety, and evaluate the effectiveness of the intervention program.

In accordance with the first general objective of the present study three scales on anxiety disorders namely Child and Adolescent Worry Scale (CAWS), Spence Children's Anxiety Scale (SCAS) and Spence Children's Anxiety Scale for Parents (SCAS-P) were adapted to use with Bangladeshi participants as described in Chapters 2, 3, and 4. The adapted scales had excellent internal consistency, test-retest reliability, content, criterion and construct validity which are very much in agreement with the original scales. Also the Bangla CAWS distinguished between the level of anxiety of normal/community and special need children indicating that it has good sensitivity to varying levels of anxiety. In addition to using in research, the adapted scales can be used for screening the children at-risk for developing anxiety disorders so that preventive measures can be taken.

The second general objective of the research was to develop intervention tools for the management of anxiety in young children. To achieve the goal the present study combined CBT with bibliotherapy and developed CBT based story books, self help activity book and modules to conduct intervention sessions. CBT is particularly useful for dealing with anxiety disorders in children because it includes psycho-education, emotional identification and management, detection of cognitions in anxiety-inducing situations, challenging the anxiety-increasing self-talk, exposure and many other techniques (Richardson et al., 2010; Stallard et al., 2010). The benefits of using bibliotherapy for the treatment of anxiety disorders in children include learning about alternative options for future action modeled by the hero of the story who overcomes difficulties. This helps children to address larger, more complex issues and normalize experiences beyond their understanding which in turn can reduce anxiety and establish a sense of order and safety (Berger & Lahad, 2013). It also provides opportunities to develop insight into personal problems and assists emotional healing (Heath et al., 2005). From bibliotherapy, children acquire appropriate social and problem-solving skills, amend negative self-talk, and learn coping strategies, which enhances their confidence and self-esteem (K. E. Cook, Earles-Vollrath, & Ganz, 2006; Forgan, 2002; Thomas, 2011). Most importantly, children can discuss the implications of a story in a less threatening way which allow them to consider own feelings and thoughts from the point of view of “the other”. They come to learn that they are not alone, others share similar problems.

The integration of the two therapies (i.e. CBT and bibliotherapy) produced a unique intervention approach enriched with the advantages of both of them. The uniqueness of the intervention program lies in its characteristics of versatility (i.e. separate books were written for specific anxiety disorders such that the anxious child can identify with the character), usability (i.e. can be used in different settings including schools and

clear instructions are given about implementing the sessions), resourcefulness (i.e. storybooks consists of psycho-education on anxiety for the parents and teachers), interestingness (i.e. characters in the stories were described to generate interest among the children), and child-friendliness. Also, instructions have been given so that children can make their own puppet character and prepare their 'My strength book' to help themselves to cope with anxiety. In addition, an interactive self-help book is provided in which children can draw pictures of their anxieties, brainstorm their thoughts, make list of positive self-talks, etc. The strength of the intervention program was such that only four sessions were sufficient for reducing anxiety significantly. The intervention package is flexible; clinicians can use it as it is but also can tailor it according to their needs.

The story books present an opportunity to indirectly challenge the child's cognitions and cognitive processes in an uncritical way. It is likely that the stories introduced children to positive and more functional coping and cognitive skills, and helped them to develop more functional assumptions and belief about the self and others. Clinicians can use the story themes and contexts to help children to generalize the skills learned in storybooks to other settings. The books and modules developed in the present study were found to be promising in reducing anxiety in the field test with normal and anxious children. Both quantitative and qualitative measures indicated probable usefulness of the intervention program (see Chapter 5).

The last general objective of the present research was to investigate the effectiveness of the intervention program in school setting. To this aim, a quasi-experimental mixed design was employed. Pre and post test was conducted with both experimental and control conditions. The intervention program was conducted for four weeks in the experimental condition, whereas no intervention was provided in the control condition. The effectiveness of the program was assessed by the three adapted scales

(which are described in Chapter 6). Scores in all the three measures indicate that the program was effective in reducing anxiety among the youths, which was further supported by the ratings of treatment credibility questionnaire.

### **7.1.1 Cost-effectiveness of the intervention program**

Popular intervention programs for anxiety disorders, such as FRIENDS, *Cool Kids*, *Coping Cat*, *Worrybuster*, *Take Action Program*, etc. are comprised of at least 10 to 16 one-hour sessions. Some brief CBT programs require six sessions to reduce school phobia (King et al., 1998; White, 2018). In contrast to the other intervention programs, the one that has been developed in the present research was found to be effective in just four sessions, each lasting 1.5-hours. Similar approach was followed for the treatment of panic disorders where the intervention package require approximately five hours (Clark et al., 1999). The brevity of the present intervention approach makes it a cost-effective program in terms of time, money, energy and man power. It can be expected that the children who underwent the intervention might remain stable over the extended time as studies suggest that the treatment benefits of CBT remain constant over the long term with significant gains continued up to seven years post-treatment (Barrett & Turner, 2001; Kendall et al., 2004). Positive feedback from parents, teachers and children also suggest that the intervention program is helpful in minimizing anxiety among children at school setting. To be confident about the findings, it is necessary to replicate them with a large sample consisting of randomly selected participants.

### **7.1.2 Challenges and potentials of using the intervention program in Bangladesh**

Mental health support in the school setting has many advantages, such as access to at-risk students, low service delivery cost, and the reduction of mental health service stigma. The benefits of such support programs, however, are not easy to achieve as schools are faced with numerous demands all competing for priority. The primary

mandate of school is to teach curriculum, hence extra-curricular program like this are often required to validate its place on the busy school schedule.

Another issue regarding the intervention is that most schools do not have the scope to release their teaching staff to attend training seminars and to hire experts (i.e., educational psychologists) to provide specialty treatment services. In a study that trained school counselors to lead an anxiety management program in their school, only three of eleven school counselors were able to complete the anxiety program as planned due to excessive and competing demands of the program (McLoone et al., 2004). This might give rise to the question of whether it is practical for the few school psychologists and counselors working in schools to use intervention programs for anxiety in school settings. There is a possibility that school administrators and policy makers may not agree that schools should provide such psychological services as anxiety management programs. Incorporating such programs into the curriculum is therefore a challenge for school counselors. Evaluations of the intervention program by the school/educational psychologists will provide invaluable empirical evidence to assess the efficacy of such programs.

There are also financial issues associated with the use of the school setting for the treatment of anxiety. Money is required for the implementation of any program. Who would bear the cost of such intervention programs may become an issue which might hinder their implementation. School administrators and policy makers may not come to a consensus on this issue. Therefore further studies are necessary to determine the facilitators and obstacles relevant to mental health delivery in this unique setting and eventually the viability of delivering anxiety management programs in schools. Thus the present findings can be used to convince the policy makers and stakeholders to incorporate mental health programs in schools.

### **7.1.3 Limitations and Future directions**

A potential limitation in studying anxiety is that they are typically highly correlated especially with depression (Chorpita, Moffitt, & Gray, 2005). Therefore, future studies should separate between relatively 'pure' clinically anxious and clinically depressed children and adolescents. The present intervention program did not train parents for helping their children to deal with anxiety. Some studies found that parents' understanding of anxiety disorders and their responses to their child's anxiety are important (Hirshfeld-Becker et al., 2010). Therefore the present intervention program could be extended to train parents along with their anxious children to help the children to cope better with the problem

The present intervention program combined mainly CBT with Bibliotherapy, and considered the concepts of play therapy to make the intervention program developmentally appropriate for children. Future studies may incorporate other approaches of psychotherapy (e.g. EMDR, play therapy, psychoanalysis, music therapy, dance therapy etc.) into the intervention program with the aim of enhancing its efficacy by making use of the advantages of the various therapeutic approaches. This would increase the usability and effectiveness of the intervention given that the same therapeutic approach (e.g. CBT) may not work for all the children (World Health Organization, 2012; Higa-McMillan, Francis, Rith-Najarian, & Chorpita, 2016; Festen et al., 2013; de Haan, Rietveld, Stokhof, & Denys, 2013). Hence combination of various therapy approaches could be a solution for reaching all anxiety stricken children to help them according to their temperaments and needs.

The present study was carried out with developmentally healthy children. It is therefore unknown whether the same intervention program would be effective for children



with developmental disorders. This might require some modifications of the existing program to suit their special needs. Future studies should look into this matter.

The intervention program can potentially be used in other settings besides schools, such as in clinic and hospital settings. The program's efficacy can be tested with children from different cultural and socio-economic backgrounds (rural, urban, and indigenous groups). Future studies can investigate these issues.

The present research adapted and validated three widely used scales to measure anxiety in youths. These scales can be used for various research and clinical purposes as there is a scarcity of anxiety measures for children in Bangladesh.

#### **7.1.4 Implications for practice**

Though there are many practicing school psychologists around the world, the number is limited to less than 25 in Bangladesh. The government has taken initiatives to create adequate posts of school psychologists which are very encouraging. It is inspiring that studies now recommend school based interventions programs and surveys found that psychologists working in schools are eager to receive training on all aspects of internalizing disorders (Cook, Jimerson, & Begeny, 2010). This suggests that the present intervention program can be included in a training package for psychologists working with children in the schools and various service sectors of the country.

#### **7.1.5 Conclusion**

The studies presented in this PhD project adapted multiple anxiety measures for youths, presented a new and unique school-based intervention program for anxiety disorders in children, demonstrated the usability and effectiveness of the program, and suggested various potential applications of the program and related materials to ensure good mental health of the youths of Bangladesh. It is hoped that the products of this PhD

research will have long-term scientific and practical value to the educational and health sectors of the country.

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