

**The assessment, impact and management of psychological reactions to
trauma among Bangladeshi children**

by

Farah Deeba

M. Phil. in Clinical Psychology (Dhaka, Bangladesh)

Supervisor

Professor Ronald M. Rapee, PhD

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Macquarie University, North Ryde, NSW-2109, Australia.

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SUMMARY

The experience of traumatic events can change a person's life forever. According to theory and empirical research, traumatic experiences early in life can lead to greater impact on an individual than traumas occurring in adulthood. Traumatic events among young people are common with one in every four children living in a developed country being likely to experience a traumatic event by the time they are 18 years old. However, due to a variety of social, economic and environmental disadvantages, children from developing countries are at even greater risk of trauma exposure. To date, most knowledge about the effects of traumatic events in childhood along with methods of intervention for younger people have come from work in developed countries. Therefore, considerably more information is needed about the nature and experience of trauma-exposure and its sequeli among children and adolescent from developing countries. The research described here, was conducted on young people from a developing country to get a better understanding of the effects of trauma on young people in such contexts.

The research conducted in this thesis comprised samples of children and adolescents from Bangladesh, a developing world country that differs from the developed world not only on socio-economic grounds but also in cultural factors including language, traditions, and religion. The four studies described here involved data collection from a sample of over 1350 children from Bangladesh aged 5 to 17 years. The sample included children from both rural and urban areas and was comprised

of children from schools as well as a large sample from slum areas and social support centres. There were three main aims to the research: 1) translate and evaluate the use of some common Western measures of emotional distress among Bangladeshi children, 2) understand more about the common traumatic events that children in Bangladesh experience and the levels of psychological symptoms reported by them, and 3) evaluate a brief and very cheap intervention to reduce symptoms of emotional distress among traumatized younger children.

Overall the results showed that several common Western measures of emotional symptomatology can be successfully translated and used with children from Bangladesh. Overall structure and psychometric properties of all of the measures were similar to those found in other populations, pointing to the universality of emotional distress. Sadly, severe traumatic events were all too common among this population and included events such as natural disasters, accidents and abuse. Psychological symptoms were also common and it was found that children living in social support centres reported significantly higher levels of emotional distress than community children. Children from support centres also reported more direct exposure to accidents and man-made traumas and exposure to man-made trauma was a significant predictor of emotional distress. On the positive side, giving young children from social support centres a cheap toy (stuffed bear) and providing them with instructions to care for the bear and give it positive self-statements, dramatically reduced negative symptoms over a brief period. Future research should examine the cost-effectiveness of this intervention

on a larger scale and including a longer follow-up, which will have major implications for the mental health of young people from developing countries.

The studies undertaken in this research project hold positive implications for both regular clinical work and future research needing measures to monitor children's emotional reactions to negative life events. It also provides some important information about the experience of trauma and emotional symptoms of children from Bangladesh and points to a possible cost effective intervention. These findings in particular have potential value for the Government of Bangladesh as well as for non-Government organisations that assist disadvantaged youth in Bangladesh.

CERTIFICATION BY CANDIDATE

I certify that the thesis is my own work and has not been submitted for a higher degree to any other university or institution. The additional author on the papers that are contained in different chapters was involved in the research at a supervisory level.

Approval from Macquarie University Ethics Committee (Human Ethics) was obtained, Ethics Ref: 5201001017 & Ref: 5201100595.

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Date:

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CHAPTER 1

Introduction

Trauma and its impact on children

Extreme and life threatening events have occurred across history and continue to occur around the world. Millions of lives have been lost and many more survivors have struggled to adjust to altered lives due to such events (Guha-Sapir, Hoyois, & Below, 2013). The devastation created by mass disasters that result in large numbers of casualties are often most salient to the whole population, however smaller scale and more isolated events are no less traumatic for the individuals who are exposed to them (McFarlane & Williams, 2012, p.-2). A wide range of traumatic events can produce extreme threat for an individual resulting in a variety of short-term or long-term impacts. The psychological impact of traumatic events has been widely studied in the last forty years and knowledge about emotional reactions to threat continues to expand. This knowledge has helped improve the management of mental health following traumatic experiences (McFarlane & Williams, 2012). However, mental health following exposure to traumas is not managed consistently across different nations. In many countries, especially those with lower levels of resources, management of trauma-related distress is still far from ideal. Improved understanding of distress in these countries and development of low-cost and widely accessible means of management are desperately needed.

The development of post-traumatic stress disorder (PTSD) represents one of the most debilitating and widely recognized psychological reactions to trauma (Cloitre et al., 2009; Morgan, Scourfield, Williams, Jasper, & Lewis, 2003; Norris, Friedman, & Watson, 2002). Although the majority of research attention has been focused on PTSD, a variety of other negative emotional reactions can follow exposure to traumatic events. Hence, this thesis will generally use the broader term, post-traumatic stress reactions

(PTSR) to refer to the broad range of emotional distress that commonly follows traumatic experiences. While most empirical research has been addressed to traumatic experiences in adults, over the last 20 years more attention has begun to be focused on trauma and its effects among children. Early views that children are largely resilient to the psychological effects of trauma were shown several decades ago to be incorrect (Lacey, 1972). Extensive research has now established that children can experience a range of PTSR following a variety of traumatic events including natural disasters (Greca et al., 2013; Udwin & Boyle, 2000), accidents (B. Bryant, Mayou, Wiggs, Ehlers, & Stores, 2004; Yule et al., 2000), man-made events, like, intentional injuries (Ackerman, Newton, McPherson, Jones, & Dykman, 1998; Faust, Chapman, & Stewart, 2008), interpersonal or domestic violence (Arseneault, Bowes, & Shakoor, 2010; Kitzmann, Gaylord, Holt, & Kenny, 2003), or community violence (Garbarino, Dubrow, Kostelny, & Pardo, 1992). These experiences heighten risk for the development of various impairments in biological, emotional, cognitive and social functioning (Cohen & Mannarino, 2004; Pervanidou, 2008). When left untreated, traumatized children are vulnerable to developing various physical and psychological health problems, both in the short term and into adulthood, for instance, cardiovascular, respiratory and gastrointestinal problems, severe PTSD, anxiety, depression, dissociation, psychosis, personality disorders, or dementia, disrupted social relationships, poor attachment, or difficulty developing close relationships (Battle et al., 2004; Bernard, Jackson, & Patterson, 2010; Bolton et al., 2004; Briere & Elliott, 2003; Cloitre et al., 2009; Dalenberg & Palesh, 2004; Drossman, Li, & Leserman, 1996; Drossman, Talley, Leserman, Olden, & Barreiro, 1995; Galovski, Blain, Chappuis, & Fletcher, 2013; Goodwin & Stein, 2004; Gould et al., 2012; Green et al., 2010; Horwitz, Widom, McLaughlin, & White, 2001; Kessler et al., 2010; van der Kolk, Hostetler, Herron, &

Fisler, 1994; Read, Agar, Argyle, & Aderhold, 2003; Schore, 2001; Tsutsumi, Izutsu, Poudyal, Kato, & Marui, 2008).

Post-traumatic stress reactions (PTSR) among children following trauma commonly range from PTSD to anxiety and depression (Bolton, O'Ryan, Udwin, Boyle, & Yule, 2000; Caffo, Forresi, & Lievers, 2005; Suliman et al., 2009; Yule, 1997). These reactions constitute more proximal reactions to trauma while additional difficulties, including substance abuse, delinquent behaviours, psychotic symptoms, self-harm and suicide may occur later in the time-course (Dube et al., 2001; Silverman & La Greca, 2002). The latter complications are especially common among adolescents (Broman-Fulks et al., 2009; Nooner et al., 2012). In a recent meta-analysis of 64 studies on risk factors for PTSD in children, a variety of child-centred and trauma-centred factors were shown to determine the development and severity of reactions to trauma in children. Factors included demographic factors (e.g. age, gender, genetics, or temperament), objective aspects of the event (e.g. proximity and intensity of the event, level of exposure) and subjective trauma characteristics (e.g. experience of intense fear, perception of threat). Post-trauma individual factors, (perceived social support, perceived future harm) and post-trauma psychological environment (e.g. loss of close relatives, provision of supports) showed the substantial effect sizes (Trickey, Siddaway, Meiser-Stedman, Serpell, & Field, 2012).

The mechanisms through which the experience of traumatic events may precipitate negative physical and psychological conditions appear to be similar in both adults and children (Pervanidou, 2008; D. W. Smith, McCart, & Saunders, 2008; Watts-English, Fortson, Gibler, Hooper, & De Bellis, 2006). Research has shown that trauma leaves a child with altered physiological and psychological arousal that is associated

with development of later psychological problems (Delahanty, Nugent, Christopher, & Walsh, 2005; Kassam-Adams, Garcia-España, Fein, & Winston, 2005). Such alterations in physical and psychological characteristics at an early age increase the vulnerability of an individual for dysfunctional endocrinal regulation and changed brain shape and structure (Carrion et al., 2001; De Bellis et al., 1999; Gunnar & Cheatham, 2003; Morris & Rao, 2013). These changes can lead to lower performance across various tasks that demand higher brain functioning, (e.g. academic achievement, technical work, creativity). Stress reactions in the face of trauma also increase individual vulnerability to negative cognitive factors that increase likelihood for later psychopathology (Dalgleish, 2004; Gould et al., 2012; Riskind & Williams, 2005; Salmon, Sinclair, & Bryant, 2007). Changes and distortions in cognitions related to low self-efficacy, self-esteem, belief and trust in others or thoughts of future safety in relation to the event and perceived social supports or ability to adjust to future life changes have commonly been found in children following traumatic events (Bryant, Salmon, Sinclair, & Davidson, 2007; Joseph, Brewin, Yule, & Williams, 1991; Stallard & Smith, 2007).

In poverty ridden and low-resourced communities, children are especially vulnerable to exposure to a wide range of traumas and consequently to various emotional or behavioral problems (Benjet, 2010; Yoshikawa, Aber, & Beardslee, 2012). Poverty mediates or performs as a catalyst to increase stress on adult members of the family often reducing parenting skills and social support and escalating the risk of domestic violence and child abuse in families (Conger, Conger, & Martin, 2010; Evans, 2004; Kaiser & Delaney, 1996; McLeod & Shanahan, 1993; Newland, Crnic, Cox, & Mills-Koonce, 2013). Similarly, in the face of mass disasters, poor families are generally most vulnerable, both to direct exposure as well as for further victimization

and suffering. Thus children from poor families commonly fall into a vicious cycle of being traumatized, then further victimized and having poor mental health when large scale disasters occur in the community (Becker-Blease, Turner, & Finkelhor, 2010).

Social and family burden of trauma

Following natural disasters families have been found to have increased family dysfunction (Cao, Jiang, Li, Lo, & Li, 2013; McDermott & Cobham, 2012) and to experience long-term adjustment problems (McFarlane, 1987). Altered coping strategies in families, including their interaction and functioning styles, have been found to be highly related to adolescents' post-trauma distress (Vigil & Geary, 2008). These family factors have been shown to follow not only natural disasters but a range of other traumatic experiences occurring to children in the family, such as terminal illness (Stuber & Shemesh, 2006), injury (Shudy et al., 2006), and sexual abuse (Banyard, 1997). However having a child victim of a man-made traumatic event (such as abuse) can result in far greater family distress than experiencing natural disasters since man-made experiences are often further complicated by social isolation and neglect (McFarlane & Williams, 2012). Hence man-made intentional (e.g. physical abuse, sexual assault, witnessing domestic or community violence, kidnapping) or unintentional events (e.g. vehicle accidents, terminal illnesses) are more likely to create social burden than natural disasters. Further in addition to a direct burden on families caused by traumatic events, childhood trauma limits the individual's capability to perform to their maximum capacity within society through a variety of social and health problems.

A wide variety of social consequences typically follows children's exposure to traumatic events. Leaving education or lower academic achievement, involvement in risky behaviors, substance abuse, intentional injuries, violence and criminal behaviors are all evident in children following exposure to trauma (Boden, Horwood, & Fergusson, 2007; Gilbert et al., 2009; Saigh, Mroueh, & Bremner, 1997). The direct and indirect costs related to treatment, communication, social and legal support are considerable. Access to social services by children and their carers can be an especially limiting factor in any nation, further impacting the costs associated with traumatic experiences. Literature on the economic costs associated with PTSD among children in various countries is limited. One estimate from the United States has suggested that to provide a comprehensive mental health service to any individual (either child or adult) following a natural disaster would cost around \$1,133 (Schoenbaum et al., 2009). Guyer and Ellers (1990) estimated that childhood unintentional injuries alone (e.g. motor vehicle accidents, falls, drowning) cost around \$7.5 billion a year. Even greater economic burden has been estimated for childhood abuse and maltreatment which is estimated to cost \$124 billion a year in the USA including health care costs, productivity loss, legal and educational costs (Fang, Brown, Florence, & Mercy, 2012). Estimates from other developed countries are limited though few other show similar heavy economic burden, (e.g. Canada (Bowlus, McKenna, Day, & Wright, 2003), or Australia (Taylor et al., 2008)). Estimates of the economic burden of exposure to traumas among children from developing countries are even more limited. Further, it is difficult to compare the costs estimated in developing and developed countries as they are not always determined based on similar criteria (e.g. unintentional injuries (Lao, Gifford, & Dalal, 2012)). Nonetheless, the dramatic economic burden caused by exposure to traumas among young people estimated from developed countries are likely

to be as great or greater within the context of poverty and limited resources of developing countries. As such, effective and efficient treatments are likely to be associated with dramatic cost savings and improvements in economic productivity in all nations.

Management of PTSR in children

Extensive research has demonstrated that traumatized children who receive treatment show significant reductions in a range of trauma-related symptoms (Gillies, Taylor, Gray, O'Brien, & D'Abrew, 2013). Effective management of trauma exposed children necessitates two broad components (Foa, Keane, Friedman, & Cohen, 2008). First, it requires validated assessment to allow a support provider to better identify the level and types of services needed by the young person. In this way, children at risk can be identified and referred to appropriate support services as quickly as possible. Second, effective management requires the availability of empirically validated interventions.

Proper assessment of the extent of trauma and early identification of symptoms of PTSR are essential to determine and design relevant interventions for survivors. Psychological assessment tools are needed for specialist mental health workers and in particular, brief, valid, and easily administered measures are needed for emergency services (Banh, Saxe, Mangione, & Horton, 2008), injury clinics (Ziegler, Greenwald, DeGuzman, & Simon, 2005), and social support centres to allow professionals from a variety of disciplines to make appropriate and timely referrals (Ko et al., 2008). A variety of self-report or observer reported assessment tools are currently available that can identify the existence and extent of exposure to trauma (e.g., Brewin et al., 2002;

Muris, Merckelbach, Korver, & Meesters, 2000). Examples include the Lifetime Incidence of Traumatic Events (Greenwald & Rubin, 1999), or the Traumatic Events Screening Inventory (Ford, Ruscus, Rogers, et al., 2002) , which can reliably assess a range of psychological reactions to trauma according to criteria set by the standard classificatory systems, such as, DSM or ICD.

Reactions to trauma, including physical, cognitive, emotional and behavioural symptoms, have been assessed with the use of brief, reliable, valid, self-report or observer reported measures (Strand, Sarmiento, & Pasquale, 2005). A wide variety of measures have been used to assess trauma and symptoms of PTSD, anxiety, depression, anger, sexual concerns and dissociation. Self-reported measures are useful for children older than around 6 years who are capable of reporting personal feelings and thoughts and observer reported measures are more likely to be used when children are younger and not able to report appropriately about inner psychological states. A number of measures have been developed to assess various measures of childhood psychopathological symptoms as reactions after trauma. Additional specific measures are available to assess comorbid problems.

Several measures have been validated to assess PTSD in children and adolescents such as the 22-item UCLA-PTSD index (Rodriguez, Steinberg, & Pynoos, 1999); the 17-item, Child PTSD Symptom Scale, CPSS (Foa, Johnson, Feeny, & Treadwell, 2001); and 54-item Trauma Symptom Checklist for Children TSCC (Briere, Elliott, Harris, & Cotman, 1995), or the observer reported 36-item Child Stress Disorders Checklist, CSDS (Saxe et al., 2003). Measures to assess anxiety, depression or other comorbid disorders for children are also available, for instance, Revised Children's Manifest Anxiety Scale, Second Edition (RCMAS-2; Reynolds & Richmond,

2008), State-Trait Anxiety Inventory for Children (STAIC; Spielberger, 1973), Endler Multidimensional Anxiety Scales (EMAS; Endler, Edwards, Vitelli, & Parker, 1989), the Children's Depression Inventory (CDI, Kovacs, 1992), the Multiscore Depression Inventory for Children (MDI-C Berndt & Kaiser, 1996), the Children's Depression Rating Scale (CDRS; Poznanski, Cook, & Carroll, 1979), the Revised Child Anxiety and Depression Scale (RCADS; Chorpita, Moffitt, & Gray, 2005) or omnibus measures like that are developed by Beck, Beck, and Jolly (2001) for anxiety, depression, anger, and disruptive behaviour. A number of important barriers limit the use of these measures in broad general practice including the length of the measure, its method of administration (structured, semi-structured, rating scales, etc.), training required, expertise, time, and cost. For use in crisis situations, especially brief and freely available measures are needed. Measures like the Spence Children's Anxiety Scale (Spence, 1998), 13-item Children's Revised Impact of Events Scale (Children and War Foundation, 2005), and Short Mood and Feelings Questionnaire (Angold et al., 1995) can fulfil such needs.

Following assessment, developing age-appropriate interventions to manage the reactions to trauma by children is extremely important. A large number of interventions for traumatized children have been developed and evaluated including both psychological and pharmacological treatments (Cohen, Berliner, & Mannarino, 2003; Dowd & McGuire, 2011; Gil, 2011; Gillies et al., 2013; Grasso & Kaufman, 2013). Most interventions with children have been developed from established programs developed for use with adults (Foa et al., 2008). Some examples include, prolonged exposure (Foa, Chrestman, & Gilboa-Schechtman, 2009), or group cognitive behavior therapy (Giannopoulou, Dikaiakou, & Yule, 2006; March, Amaya-Jackson, Murray, &

Schulte, 1998). When applied to intervention with children, some researchers have argued that involving parents in the intervention appears to be helpful (e.g. Cobham et al., 2012; Lieberman & Van Horn, 2008). The use of play with traumatized children has also received some attention from professionals based on the general therapeutic value of play (Gil, 2012). Despite these recent inclusions, the literature on interventions with childhood post-traumatic experiences has mostly included traditional Cognitive Behaviour Therapy (CBT)-based intervention (Phillips, 2000; Putnam, 2003; Puttre, 2011).

Following a meta-analysis examining interventions for children exposed to trauma other than abuse, Forman-Hoffman et al. (2013) concluded that psychological interventions are generally helpful and that CBT-based interventions were more effective than comparison interventions including pharmacological treatment. Negative beliefs or cognitions constitute the main target of modification within CBT interventions to reduce PTSR and improve functioning. Symptom reduction has also been shown to maintain up to two years following treatment (Cohen, Mannarino, & Knudsen, 2005; Deblinger, Steer, & Lippmann, 1999). Standard number of earlier CBT-based interventions have been specifically tested and shown to be effective with the trauma of child sexual abuse (Cohen, Deblinger, & Mannarino, 2005; Deblinger, Mannarino, Cohen, & Steer, 2006; Kirsch, Fegert, Seitz, & Goldbeck, 2011; McDonagh et al., 2005). A variety of delivery methods for CBT based interventions have been shown to be effective in the management of PTSR including written forms with older children (Saskia Van der, Lucassen, Emmerik, & Emmelkamp, 2009), incorporation of art work (Orr, 2007) or online delivery (Amstadter, Broman-Fulks, Zinzow, Ruggiero, & Cercone, 2009). One form of therapy for child sexual abuse, trauma-focused CBT

(TF-CBT) as used with adults, has also been shown to be effective with children who experienced other traumatic events including physical abuse and maltreatment, terrorism, disasters, accidents, exposure to domestic violence, grief or multiple traumas (Allen & Johnson, 2012; Cohen, 2005; Cohen & Mannarino, 2008; Cummings, 2011; Kowalik, Weller, Venter, & Drachman, 2011; Resick, Nishith, & Griffin, 2003). TF-CBT has also been used with very young children (three through six) and found to have positive impacts (Cary & McMillen, 2012; Scheeringa, Weems, Cohen, Amaya-Jackson, & Guthrie, 2011; Smith et al., 2012). Some recent research has shown that TF-CBT is also effective with children from non-Western cultures (Jensen et al., 2013; O'Callaghan, McMullen, Shannon, Rafferty, & Black, 2013).

Disproportionate utilisation of trauma related mental health knowledge worldwide

It is a very sad fact that many children will be exposed to a traumatic event at some point in their life. A nationally representative study of children and adolescents from the USA showed that almost 30% had experienced a traumatic event before the age of 18 (Copeland, Keeler, Angold, & Costello, 2007). This included both natural and man-made disasters (intentional and unintentional). Government reports from several developed countries including the UK, USA, and Australia, indicate that 3-5% of children are exposed to some form of abuse or maltreatment every year (as reported in, Gilbert et al., 2009). In contrast to developed countries, developing countries (where 85% of the world's population resides) are even more prone to traumatic events due to their poverty, reduced social structure and reduced health and security. As a result, it is likely that children from developing countries will be at even greater risk for exposure

to traumatic events and the subsequent development of PTSD (Benjet, 2010; Ma et al., 2011; Patel, Flisher, Hetrick, & McGorry, 2007).

Despite the fact that children from developing countries are more likely than those from developed countries to be exposed to traumatic events, the majority of research aimed at understanding the development and treatment of PTSD has been conducted in developed countries. As a result, mental health services following traumas in developed countries have vastly improved. However, the frequency and subsequent burden from traumatic events is considerably higher in developing countries. For example, The Department for International Development (DFID) of the United Kingdom has estimated that during the last three decades the death toll due to natural disasters has been 40 times higher in under-developed countries than in the developed world (Department for International Development, 2013). Among survivors, children constitute the most vulnerable group (Belfer, 2006; Datar, Liu, Linnemayr, & Stecher, 2013; Kar, 2009). The World Health Organization reported that mortality and disability due to violence among young people is highest in low- and middle income countries (Krug, Dahlberg, Mercy, Zwi, & Lozano, 2002). Ninety percent of violence-related deaths occur in developing countries, which is more than 2.5 times higher than in developed countries (Mathers et al., 2002). Rapid urbanization in developing countries has led poor populations towards urban slums, reducing the safety of the social environment (Matzopoulos, Bowman, Butchart, & Mercy, 2008; Palomar Lever, 2008). More than 60% of children without families and living on the streets are found to be exposed to some form of physical, verbal, or sexual abuse (Mathur, Rathore, & Mathur, 2009). Such adverse experiences are likely to contribute to impaired development and numerous psycho-social problems among children in these countries (Walker et al.,

2007). However, very few studies are available that depict the extent of trauma exposure and mental health conditions among vulnerable children from poor countries.

Of the research that has been conducted in developing countries, the majority has come either from war affected countries (Aziz, Gunay, Mustafa, & Meliksah, 2009; Isakson & Layne, 2009; Thabet, Abed, & Vostanis, 2004; Thabet & Vostanis, 2000) or immediately following some mass natural disasters, like tsunami (Thienkrua et al., 2006; Vijayakumar, Kannan, & Daniel, 2006) or earthquake (Ayub et al., 2012). Naturally, such studies do not necessarily represent experiences of children from non-war affected developing countries and typically focus on a specific traumatic event. Considerably more work is needed to understand the nature of PTSR among children from low-income developing countries to assist mental health planning and the development of appropriate interventions.

While recognition and understanding of mental health and its impact has been increasing in recent years within developed countries, developing countries still lag far behind on this point (Jorm, 2000; Odero, Garner, & Zwi, 1997). Mental health is an issue that receives relatively low priority in developing countries from both policy makers and the general public (Alagaratnam, 1984; Ganasen et al., 2008). For instance, stigma related to mental health is especially common in these countries (Sartorius, 2007). It is common to believe that mental health is a matter for weak personalities, or for those who have a family member with developmental disorder or psychotic symptoms. Similarly, discussion about previous traumatic events with victims, especially children, is typically discouraged and psychological symptoms reported by children are sometimes viewed as contrived (Deeba & M. Rahman, 2012). Such negative attitudes and lack of attention towards mental health among children creates

barriers for the development of effective mental health services and may increase the likelihood that these problems will be maintained into adulthood.

A further complication in developing countries is the limited number of mental health services that are again often difficult to access by poor populations (Kokai, Fujii, Shinfuku, & Edwards, 2004; Patel, Araya, et al., 2007). Moreover, a vast number of children exposed to various traumatic events whose mental health is especially at risk (Eisenberg & Belfer, 2009, p.-29) live in institutions (UNICEF, 2010). When they are accessed, the limited emergency mental health services in developing countries usually deliver medically-based interventions such as pharmacotherapy (e.g. Sundram et al., 2008). Effective psychological interventions are largely unavailable in most developing countries. Even where CBT-based interventions are available, they commonly suffer various therapy related resource limitations, professional issues, or difficulty involving families and adopting or incorporating indigenous values and concepts (Naeem, Gobbi, Ayub, & Kingdon, 2010).

Developing appropriate child mental health services in any community is challenging, even in high-income countries (Patel, Flisher, et al., 2007). Information related to child mental health in order to develop relevant services is particularly needed (Ganasen et al., 2008; Patel, 2007; Rohde, 2011). In addition to the social barriers described above, a number of resource based limitations increase the cost of developing mental health services in poor countries (Chisholm et al., 2007; Gureje & Lasebikan, 2006). For instance, lack of trained mental health professionals along with a lack of measurement tools to assess psychological difficulties produce barriers for practitioners as well as researchers both to understand the level of psychopathology and to make appropriate referrals (Sriram, 1990).

Pediatric mental health is one of the eight specific areas of mental health identified by the World Health Organization (2008) as requiring immediate attention by developing countries to develop mental health services for their populations. However very few developing countries (e.g. South Africa, Lund, Boyce, Flisher, Kafaar, & Dawes, 2009) have attempted to develop effective child mental health services. At present in many countries emergency support for vulnerable groups including women and children are commonly arranged by various non-government organizations only on a first-aid basis when there is a conflict or large-scale disaster. Eisenberg and Belfer (2009) rightly argue that in many cases these organizations compete with each other for provision of interventions that in most cases are not empirically tested. Such a situation is not only unhelpful for recipients of the services but also for the development of local resources for future management of cases. These authors also pointed out that far more epidemiological data and evaluation of cost-effective interventions for vulnerable groups are required to develop child mental health services within these countries. Several authors have discussed additional crucial aspects that need to be considered to develop comprehensive mental health services in developing countries (Ahmer, Faruqui, & Aijaz, 2007; Gureje & Lasebikan, 2006; Haque, 2005; Jacob, 2001; Kaime-Atterhög & Ahlberg, 2008; Klasen & Crombag, 2013; Murthy & Wig, 1983; Peek, 2008; Rahman, Mubbashar, Harrington, & Gater, 2000; Salerno et al., 2009; Satapathy, 2009; Shaw, Espinel, & Shultz, 2012; Silove & Bryant, 2006). Some of these factors include, needs for increased expertise and manpower, improved infrastructure, development of logistic and resource materials, inter disciplinary and organizational collaboration, and the need for government initiatives. In dealing with the effects of exposure to traumatic events among children, three areas require particular attention:

1. A knowledge-based understanding of the extent of traumatic events and the mental health conditions in the target population
2. Availability of valid, reliable, easy to administer, and low-cost measures.
3. A low cost and easily disseminated method of early intervention to allow some level of service delivery to the broadest number and most needy children.

The current thesis addressed these areas to provide implications for the development of mental health services for traumatized children in a developing country.

Test context: Bangladesh

Bangladesh is a developing country situated in South-Western Asia. According to the Bangladesh Bureau of Statistics (2011), around 150 million people live in only 150,000 square km. 45% of the total population is comprised of children and adolescents, including 50 million boys and 30 million girls. The country is poor with more than 30% of the population making less than \$2 per day. More than 26 million children are part of the poor population of the country (Barkat, 2009). Very few mental health services exist across the whole country and only a small fraction of the young population can access psychological health services due to poverty (WHO and Ministry of Health & Family Welfare, 2006).

The country has not been affected by war in its recent history but due to its geography, is especially vulnerable to a variety of natural disasters every year. Its political system and poverty also make it vulnerable to frequent political, technological, and human-created emergencies. However in recent years the country has become a model for many other countries for their disaster management and reduction of health problems in the aftermath of disasters (Cash et al., 2013). A report on the south Asian

inter-country meeting organized by the World Health Organization (WHO), reflected that despite the development of strong methods to prevent loss of life together with improving post-disaster physical health management (e.g., diarrhoea, cholera), there remains very little management of post-trauma mental health conditions in Bangladesh (Lak, 2007). Even international organizations that facilitate long-term support programs for survivors of disasters do not typically provide funds to develop mental health support services (e.g. Reddy, 2013). A number of studies have documented extensive problems among children of the country following natural disasters (Durkin, Khan, Davidson, Zaman, & Stein, 1993; Richman, 1993). Following natural disasters, the Bangladeshi Government typically assesses casualties, livestock or property damage, in order to plan rehabilitation and reconstruction (e.g. Government of Bangladesh, 2008), yet plans or funds are never allocated for provision of mental health rehabilitation among survivors. Lack of resources, for instance, valid measures in the local language to assess post-traumatic stress reactions means that knowledge about post-traumatic reactions in Bangladesh relies primarily on unstructured, clinical interviews with relatively small samples (e.g. Choudhury, Quraishi, & Haque, 2006; Sundram et al., 2008). A recent survey conducted by the WHO estimated that Bangladesh needs 20 times more full time psychiatrists, psychologists, and social workers than it has now to meet the current need for mental health services (Bruckner et al., 2011).

As mentioned above, in addition to a high frequency of natural disasters, the dense population and poor resources create large numbers of human-created traumas including road traffic accidents (Avan & Kirkwood, 2010), building collapse or fire (Campaign, 2005; Reuters, 2013), and drowning (Linnan et al., 2012). Man-made social problems are also very common in the lives of Bangladeshi children; including gender

based extreme violence, like, acid violence (Chowdhury, 2003) or human trafficking (Shamim, 2001). There are no available studies reporting the economic burden caused by children exposed to traumatic events in Bangladesh and there is no well-developed mental health service for traumatized cases in Bangladesh (Pathan & d'Ardenne, 2010). Available sporadic services mostly provide medical, legal and financial support. The psychological services available in these support services are again limited by lack of resources and limited access to professionals (e.g. Deeba & Mozumder, 2006).

Objectives of the thesis

The overarching aim of the current thesis was to contribute to improvements in mental health services for traumatized young people in Bangladesh by evaluating potential improvements in assessment and intervention. The author selected some psychometric measures that are commonly used in Western countries and translated them for use with children and adolescents of Bangladesh. The measures are short, valid and most importantly available for free. Chapters 2 and 3 of the thesis present evaluations of the psychometric properties of one measure with two versions (long and short) for PTSD (CRIES-8 and 13) and two measures for internalising disorders (SCAS-20 for anxiety and SMFQ for depression) for children. Using these continuous symptom-based measures, Chapter 4 describes a large survey of the prevalence and correlates of traumatic experiences among children from both rural and urban areas in Bangladesh and selected from among both community and high-risk samples.

Finally, the thesis concludes with an evaluation of a simple and innovative intervention that is briefly evaluated with two groups of traumatized children. Sadeh, Hen-Gal, and Tikotzky (2008) tested a very simple innovative method to assist children

exposed to war to deal with their traumatic stress reactions. In this play therapy based intervention, children's sense of attachment and responsibility were utilized to reduce emotional distress by asking children to take care of a toy puppy that was said to be distressed by the effects of the war. This method appeared to have a number of advantages for the Bangladeshi context: 1) it can be used with young children who are not linguistically developed enough to understand more traditional cognitive techniques; 2) the intervention does not require a great deal of expertise from therapists; 3) above all the method is very cheap and can be delivered to large numbers of children simultaneously. Therefore, a modified version of this method was evaluated with high-risk Bangladeshi children in Chapter 5.

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CHAPTER 2

Psychometric properties of Children's Revised Impact of Event Scale (CRIES) with Bangladeshi children and adolescents

Farah Deeba¹, Ronald M. Rapee^{1*} and Tania Prvan²

¹ Centre for Emotional Health, Department of Psychology, Faculty of Human Sciences,
Macquarie University, NSW 2109, Australia

² Department of Statistics, Faculty of Science, Macquarie University, NSW 2109,
Australia

*Requests for reprints should be addressed to Ronald M. Rapee, Centre for Emotional
Health, Department of Psychology, Macquarie University, NSW 2109, Australia,
(Email: ron.rapee@mq.edu.au)

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Abstract

Identification of possible cases suffering post-traumatic stress disorder (PTSD) is important, especially in developing countries where traumatic events are typically prevalent. The Children's Revised Impact of Events Scale (CRIES) is a widely used measure to assess reactions to traumatic events among young people. Both 13-item and 8-item versions of the CRIES have been developed and have demonstrated utility in screening for PTSD following criteria based on the Diagnostic and Statistical Manual of Mental Disorders (DSM). Bangladesh is a country experiencing large numbers of traumatic events but at present a translation of the CRIES in Bangla does not exist. The current study evaluated the psychometric properties of both versions of the CRIES in a sample of 1342 children and adolescents aged 9-17 years ($M=12.3$ years, $SD=2.12$) recruited from six districts of Bangladesh. A sub-group of 120 children from four schools were re-tested on the measures within 3.5 weeks. Confirmatory factor analysis supported factor structures similar to those found in other studies for both versions of the CRIES. Multiple group confirmatory factor analysis showed gender and age-group differences within the sample. Analyses also indicated moderate to excellent internal consistency and test-retest reliability. High scores on the measure successfully discriminated between children from the general community and at-risk children recruited through social support centres. Convergent validity was demonstrated by significant correlations with measures of childhood anxiety and depression. These data support use of both the CRIES-13 and CRIES-8 to provide a quick and psychometrically sound assessment of symptoms of PTSD among children and adolescents from Bangla-speaking communities.

Keywords: Trauma; assessment; post-traumatic stress; children; Bangla; Bangladesh

In the aftermath of exposure to traumatic events, about 70% of children develop symptoms of Post-Traumatic Stress Disorder (PTSD) within the first month after the incident (Aaron, Zaglul, & Emery, 1999) and almost 20-30% will meet full diagnostic criteria for PTSD within the first 12 months after the event (Dyregrov & Yule, 2006; Schnurr et al., 2007). When children with PTSD are left untreated, the disorder can persist for years limiting their psychosocial functionality and increasing risk for other disorders (Bolton, O'Ryan, Udwin, Boyle, & Yule, 2000; Weber et al., 2008; Yule et al., 2000). Trauma can also produce marked neurobiological consequences and impaired cognitive development that can reduce academic and social performance in a young person's life (Teicher et al., 2003; Yasik, Saigh, Oberfield, & Halamandaris, 2007). In the long run, the impact on individual levels of productivity across the life-span increases burden on the whole society. To help reduce this long-term impact, early identification of post-traumatic stress reactions is very important (Cohen et al., 2010).

Unfortunately traumatic events are more common in the lives of children from developing or low and middle income countries than those of developed countries creating a greater vulnerability to mental health problems (Matzopoulos, Bowman, Butchart, & Mercy, 2008; Patel & Kleinman, 2003; Whetten, 2011). Despite the frequency of traumatic events in developing countries, a lack of standard assessment and screening tools to identify young people suffering distress is a common problem that limits the efficiency of service delivery. Direct interviews and more importantly, structured diagnostic interviews require resources that are simply not available in most developing countries, especially following large-scale traumas (e.g. (Ahmed, Hossain, RajaChowdhury, & Bhuiya, 2011; Rousham, 1996). Therefore, increased availability of cost-free and well validated measures that have been translated and evaluated in developing countries, is vitally important.

Bangladesh is one developing country where children's lives are continually affected by a variety of traumatic events. The range of traumatic events includes natural events, accidents, and man-made traumas. Bangladesh is well known to the rest of the world for its frequent natural disasters and has been identified as the country with the highest number of natural disasters in the world (Government of People's Republic of Bangladesh, 2008). Following natural disasters it is young people who are typically most severely affected through death, disability, loss of family, and displacement. Further a large number of subsequent problems add to the vulnerability of children including, neglect, abuse, human trafficking, or loss of education (UNICEF, 2008). In addition to frequent natural trauma, large numbers of children in Bangladesh are traumatised each year due to variety of accidents (Linnan et al., 2007). More than 82 children die every day in Bangladesh as a result of unintentional traumatic injury, one of the highest rates in the world (Rahman, 2005). Many young people also face a range of man-made traumatic events, including trafficking (Ali, 2005), rape (Al-Azad et al., 2012), acid violence (Zafreen, Wahab, Islam, & Rahman, 2010) and many other serious forms of violence (UNICEF, 2012).

Despite mounting recognition of the quantity of traumatic events in the lives of young Bangladeshi people which point to the need for both physical and mental health support, there are few reliable data in the country regarding childhood post-traumatic stress reactions. In one large-scale survey following a major flood, compared to levels before the flood, children showed higher levels of aggression and enuresis following the flood (Durkin, Khan, Davidson, Zaman, & Stein, 1993). Similarly, high levels of traumatic reactions were reported following a tornado (13 May 1996) where among 150 participants (both adult and children), 66% were found to be psychologically traumatized (in Choudhury, Quraishi, & Haque, 2006).

Given the high frequency of trauma in the country and the particular vulnerability of children, it is highly likely that a significant proportion of Bangladeshi children will suffer post-traumatic stress reactions. Yet no formal reports are currently available that quantify levels of traumas in the country. This gap in knowledge partly reflects the decreased importance given by policy makers and the public to mental health issues, combined with a lack of resources to address these problems. Being able to quantify psychological reactions to trauma through the use of brief, valid and easily administered self-report measures would assist in redressing this situation (Ohan, Myers, & Collett, 2002). Availability of such measures will not only be useful for epidemiological surveys, but also would be of great value for everyday clinical or research work by the country's professionals.

Well-developed self-report screening tools to assess children's psychological symptoms require several key characteristics. The tools need to include a small number of items to ensure that they can be quickly completed with minimum disruption to the individual (Brewin et al., 2002; Stallard, Velleman, & Baldwin, 1999) and items need to be easily understood by children (Yule, 1992). Within communities with few resources, it is also important that instruments are easily administered and able to be scored by non-professionals (Brewin et al., 2002). A number of well-developed measures to assess symptoms associated with post-trauma reactions among children have been produced, for instance, the University of California at Los Angeles Posttraumatic Stress Disorder Reaction Index, UCLA-PTSD Index (Rodriguez, Steinberg, & Pynoos, 1999), the Child PTSD Symptom Scale, CPSS (Foa, Johnson, Feeny, & Treadwell, 2001), the Trauma Symptom Checklist for Children, TSCC (Briere, Elliott, Harris, & Cotman, 1995), and the Clinician-Administered PTSD Scale for Children and Adolescents, CAPS-C (Nader et al., 1996). Several of these measures may not be ideal for use in

developing countries since they are relatively lengthy, require restricted scoring procedures, contain items that are more appropriate for specific types of traumatic events, are not directly related to DSM categorization of PTSD, or are under commercial interests.

Among the measures of childhood PTSD, the Children's Revised Impact of Events Scale (CRIES; Children and War Foundation, 2005) fulfils the criteria for good screening instruments and has been used across a large number of countries and cultures (both western and eastern). This measure has been translated into more than 15 languages and has been used in a number of countries following various extreme mass and small scale disasters. Examples include its use with children and adolescents affected by war in Bosnia-Herzegovina (Smith, Perrin, Yule, & Rabe-Hesketh, 2001), by earthquakes in Greece (Giannopoulou, Strouthos, et al., 2006) and China (Zhao et al., 2009) and tsunami in Sri-Lanka (Ketumarn et al., 2009), and also following road – traffic accidents or other emergency medical injuries in the UK (Perrin, Meiser-Stedman, & Smith, 2005) and Australia (Kenardy, Spence, & Macleod, 2006). The CRIES has shown good reliability, satisfactory face and construct validity, a stable factor structure, and has been used to screen large samples of at-risk children following a wide range of traumatic events (Smith, Perrin, Dyregrov, & Yule, 2003). Particular advantages of the CRIES include its brevity, simple scoring that requires minimal training, clear adherence to PTSD diagnostic criteria in the DSM, and it can be used even with children as young as five (e.g. Malmquist, 1986). Above all, the CRIES is a free resource that is made available through the website of the Children and War Foundation, a Norwegian-based non-profit organisation.

The measure was developed from the widely used adult measure for post-traumatic stress reactions, the Impact of Events Scale (IES; Horowitz, Wilner, & Alvarez, 1979).

It was first used by Malmquist (1986) with children who had witnessed the murder of one of their parents and then Yule and Williams (1990) used the measure with child survivors of a ship sunk off the Belgian Coast. A number of researchers have used the measure in a variety of situations with different populations since then (e.g. Baddam, John, Russell, & Russell, 2007; Dyregrov & Raundalen, 1992; Sack, Him, & Dickason, 1999). Although the original 15-item scale was designed to cover the three components of PTSD, intrusion avoidance, and emotional numbing, confirmatory factor analyses failed to support a three-factor structure. Several studies found that most items loaded onto two factors or more (avoidance and arousal) and several items did not load on either factor (Dyregrov, Kuterovac, & Barath, 1996; Sack, Seeley, Him, & Clarke, 1998; Yule, Bruggencate, & Joseph, 1994). To improve the structure, Yule (1997) removed seven items from the original scale and developed a short, eight-item version, the CRIES-8 comprised of the two factors, intrusion and avoidance. Later Stallard et al. (1999) used both the 15-item original IES and 8-item IES and found both work well with children however, the 15-item version performed better than the 8-item version. Following discrepancies in the evaluation of factor structure and increased use of DSM-defined PTSD symptoms for children (American Psychiatric Association, APA, 1987), five additional items were added to the CRIES-8 to represent the third cluster of symptoms characterising PTSD as described in the DSM-IV (APA, 1994), arousal (Perrin et al., 2005; Smith et al., 2003). These additional items completed the CRIES-13 and the three sub-scales were labelled Intrusion, Avoidance and Arousal (Children and War Foundation, 2005).

The factor structure of the CRIES-13 was examined in several studies and was mostly supported, although with some small inconsistencies. For instance, Chen, Zhang, Liu, Liu, and Dyregrov (2012) identified a two-factor structure (intrusion+arousal vs

avoidance), Zhang, Zhang, Wu, Zhu, and Dyregrov (2011) supported three distinct but inter-correlated factors, and Giannopoulou, Smith, et al. (2006b) also supported a three-factor structure, with all factors loading onto a single higher order factor.

Satisfactory psychometric properties for both the CRIES-8 and CRIES-13 have been demonstrated according to other standard criteria in several studies. Internal consistencies range from .75-.87 for the total CRIES-13, .75-.84 for the total CRIES-8 and for the three subscales; Intrusion: .70-.90; Avoidance: .62-.82 and Arousal .60-.74 (Dyregrov et al., 1996; Giannopoulou, Smith, et al., 2006; Lau et al., 2013; Smith et al., 2003; van der Kooij et al., 2013; Yule et al., 1994; Zhang et al., 2011). Findings on internal consistency are reported in Table 1. Test retest reliability up to 7-day is good for the total CRIES-13 (r 's=.76-.85) (Panter-Brick, Goodman, Tol, & Eggerman, 2011; Verlinden et al., 2014), and r =.75 for CRIES-8 (Verlinden et al., 2014). However, it is less acceptable for the subscales; Intrusion r =.58; Avoidance: r =.68 and Arousal: r =.53 (van der Kooij et al., 2013).

Validity for both the CRIES-8 and CRIES-13 has also proven satisfactory (Perrin et al., 2005). For instance, children experiencing symptoms of PTSD have been shown to score higher on the CRIES-8 than children without PTSD (Stallard et al., 1999). Similarly, in a large sample of children affected by war ($N=2976$) in Bosnia-Herzegovina, scores on the CRIES-13 and all subscales showed small positive correlations (r =.05-.36) with self-reported level of traumatic event exposure, and depression (Smith, Perrin, Yule, Hacam, & Stuvland, 2002) and also with ratings of children's distress from parents and teachers and with mothers' levels of trauma exposure and distress (Smith et al., 2001).

Both versions of the CRIES have been used as screening tools and showed good utility with children exposed to traumatic events (Dow, Kenardy, Le Brocque, & Long,

2012; Perrin et al., 2005). A cut-off score of 17 on the CRIES-8 and a cut-off score of 30 on the CRIES-13 were found to produce the best balance between sensitivity (.94 and .91) and specificity (.59 and .65) to identify PTSD in a group of children referred for assessment, and sensitivity (1.0 and .86) and specificity (.71 and .73) to identify PTSD in a group of children assessed in a hospital accident and emergency department (Perrin et al., 2005).

Although symptoms of PTSD and post-traumatic reactions have been argued to be universally consistent (Giannopoulou, Smith, et al., 2006b), it still is possible that different language and cultural groups will demonstrate differences in perception and reactions to a given event (e.g. Anthony & Michael, 2004). Given the importance of having a brief and inexpensive instrument to assess post-traumatic reactions among young people in Bangladesh, the present study aimed to establish the psychometric properties that is confirmatory factor analyses, internal consistency, reliability and validity of the CRIES-8 and CRIES-13 among a large sample of children and adolescents from Bangladesh.

Table 1

Internal consistency of CRIES and three sub-scales found in different studies

Studies	Measurement used	CRIES-13	CRIES-8	Intrusion	Avoidance	Arousal
Yule et al. (1994)	Revised IES	-	Did not report	.90	.82	(Not the same items of arousal, emotional numbing .60)
Dyregrov et al. (1996)	Revised IES, (Boys and Girls)	-	.78 and .84	.80 and .83	.72 and .75	–
Smith et al. (2003)	CRIES-13	.80	.75	.70	.73	.60
Giannopoulou, Smith, et al. (2006b)	CRIES-13	.87	Did not report	.82	.82	.70
Zhang et al. (2011)	CRIES-13, two samples of children after one and seven months of an earthquake, (sample 1 and sample 2)	.80 and .84	Did not report	.72 and .82	.62 and .67	.63 and .72
Lau et al. (2013)	CRIES-13	.85	Did not report	.77	.74	.74
van der Kooij et al. (2013)	CRIES-13 (Cronbach's alpha and Spearman rank test-retest reliability)	.75, and $r=.80$, $p<.01$	Did not report	.73, and $r=.58$, $p<.01$	.46, and $r=.68$, $p<.01$	.53, and $r=.53$, $p<.01$

Methods

Participants:

A total of 1342 children and adolescents from a larger sample of 1383 participants for a different study (Deeba & Rapee, 2014) who reported on at least 90% of the items of the CRIES 13 were included in the current sample (Males=467, 34.68% and Females=875, 65.32%). Children were recruited from 10 schools (primary, secondary and high) and 39 social support centres for children with traumatic experiences, across rural and urban (slum and non-slum) areas from the six districts of Bangladesh. The social support services participating in the study comprised a broad group of organizations, both government and non-government that aimed to provide social welfare (for example, shelter, educational, health, legal and other support) for disadvantaged or vulnerable children in residential or non-residential forms. We provided detailed information about inclusion and exclusion criteria to social support staff and class teachers, before conducting any assessment session. Support staff and teachers then selected children for the assessment session based on this information if they believed that the child did not suffer psychosis or attention deficit hyperactivity disorders, and had no major vision, hearing or intellectual problems. Children from schools comprised a group of community children (N=562, 41.88%) while those who were collected through support centres run by government and non-government organizations constituted an “at-risk” group (N=780, 58.12%).

A wide variety of traumatic events were reported by children, including natural disasters (e.g., flood, cyclone, tornado, avalanches, arsenic exposure, suffering from terminal disease, and others), accidents (e.g., Hit by a road transport vehicle, boat or launch accidents, train/plane accidents, building collapse, fire, fall from highs, drowning, explosions and others) and man-made traumas (e.g., Hit by others,

Table 2

Demographic variables within the two sub-samples

	Community (N=562)	At-risk (N=780)
<i>Mean Age (SD)</i>	12.27 (1.89)	12.26 (2.26)
<i>Males (n, %)</i>	228 (40.56)	239 (30.64)
<i>Educational and Work status (n, %)</i>		
<i>Education</i>	547 (97.32)	450 (57.69)
<i>Work</i>	1 (0.18)	58 (7.44)
<i>Education & Work</i>	14 (2.50)	240 (30.77)
<i>Others</i>	-	32 (4.10)
<i>Religion (n, %)</i>		
<i>Muslim</i>	474 (84.34)	735 (94.23)
<i>Hindu</i>	86 (15.30)	36 (4.62)
<i>Others</i>	2 (0.36)	9 (1.05)
<i>Frequency of traumatic events experience (% within group)</i>		
<i>Single event</i>	28 (4.98)	46 (5.90)
<i>2-3 events</i>	109 (19.40)	133 (17.05)
<i>4-6 events</i>	213 (37.90)	206 (26.41)
<i>7 to more events</i>	212 (37.72)	395 (50.64)

suffocated, attempt to kill, acid attack, bombing, verbal abuse, bullying (peers), threat to hurt, stalking, sexual abuse (penetrative and non-penetrative), trafficking, mugged

(robbed), and others. The majority of children in both groups had experienced at least one trauma (see Table 2). The two sub-groups of the sample differed significantly on the number of traumatic events experienced, $\chi^2(4, N=1342)=27.37, p<.001$. Over half of the children in at-risk group had 7 and more traumatic experience, whereas the community children were just under 40% of 7 and more traumatic events exposure (for more detail see, Deeba & Rapee, 2014).

Children from the social support centres mostly lived in slum areas or shelter homes. Participation from children approached in social support centres (90%) was higher than among children from the community group (75%). The age range of the sample was 9-17 years (mean age=12.3 years, $SD=2.12$). There were 756 (56.34%) children aged 9-12 years and 586 (43.66%) adolescents aged 13-17 years. Demographic information about the two sub-samples is given in Table 2.

A subsample of 135 children (Males= 49, 40.83%) from four schools in Dhaka completed the same measures 3-4 weeks (average 3.5 weeks) following initial assessment. Their mean age was 12.92 years ($SD=1.96$).

Measures:

Children's Revised Impact of Events Scale-13 (CRIES-13)

As described above, the CRIES-13 and CRIES-8 (Children and War Foundation, 2005) share the same eight items that constitute two subscales, Intrusion and Avoidance, and the CRIES-13 includes an additional five items that constitutes a third sub-scale, Arousal. Items are scored on a non-linear scale as follows: 0 (not at all), 1 (rarely), 3 (sometimes) and 5 (often). Scores range from 0-40 for the CRIES-8 and 0- 65 for the CRIES-13, and higher scores indicate more PTSD symptoms. Other psychometric properties have been described in the introduction to this paper.

Spence Children's Anxiety Scale - 20 (SCAS-20)

SCAS-20 (S. H. Spence, personal communication, July 26, 2010) is a simple, brief self-report questionnaire to assess symptoms of anxiety. The SCAS-20 is a short form of the more commonly used 38-item SCAS (Spence, 1997). Items are rated on a 4-point Likert-type scale as 0 (never), 1 (sometimes), 2 (often) and 3 (always) and summed to obtain a total score where higher scores indicate higher levels of anxiety. Items for the short version were selected from factor analyses of the full version (Spence, 1997;; Spence, Barrett & Turner, 2003). Although the psychometric properties of the short version have not yet been published, an unpublished evaluation of the SCAS-20 demonstrated strong internal consistency of .89 (Coysh, 2011). The psychometric properties of the SCAS-20 among a group of Bangladeshi children and adolescents showed good internal consistency (Cronbach's alpha .84) and satisfactory construct validity for the scale (Deeba, Rapee, & Prvan, 2014).

Short Mood and Feelings Questionnaire (SMFQ)

SMFQ (Angold et al., 1995) was developed to identify DSM-IV-based signs and symptoms of depressive disorders in children and adolescents aged 6-17 years. The scale is scored on a 3- point Likert-type response scale 0 (Never); 1 (Sometimes true) and 2 (Always true). The total score is the sum of all items providing possible scores ranging from 0 to 26 with higher scores reflecting lower mood and risk of clinical level depression. The SMFQ has been shown to comprise a single factor and has good criterion-related validity and discriminant validity to identify clinical levels of depression in children and adolescents (Angold et al., 1995; Thapar & McGuffin, 1998). Cronbach's alpha for the SMFQ has been reported ranging from .87 to .90 (Angold et al., 1995). For the Bangladeshi children and adolescents, Cronbach's alpha was strong at .80 (Deeba, Rapee & Prvan, 2014).

Translation of measures

Standard guidelines accepted for the successful translation of instruments for research purposes (e.g. Brislin, 1986) were used. The bilingual investigator translated the English version of the CRIES to Bangla. Then another bilingual professional psychologist not associated with the measure translated it back from Bangla to English. Back translation was checked by the second author of the study, who is a native English speaker. Differences in the two versions were resolved by the joint agreement of both translators.

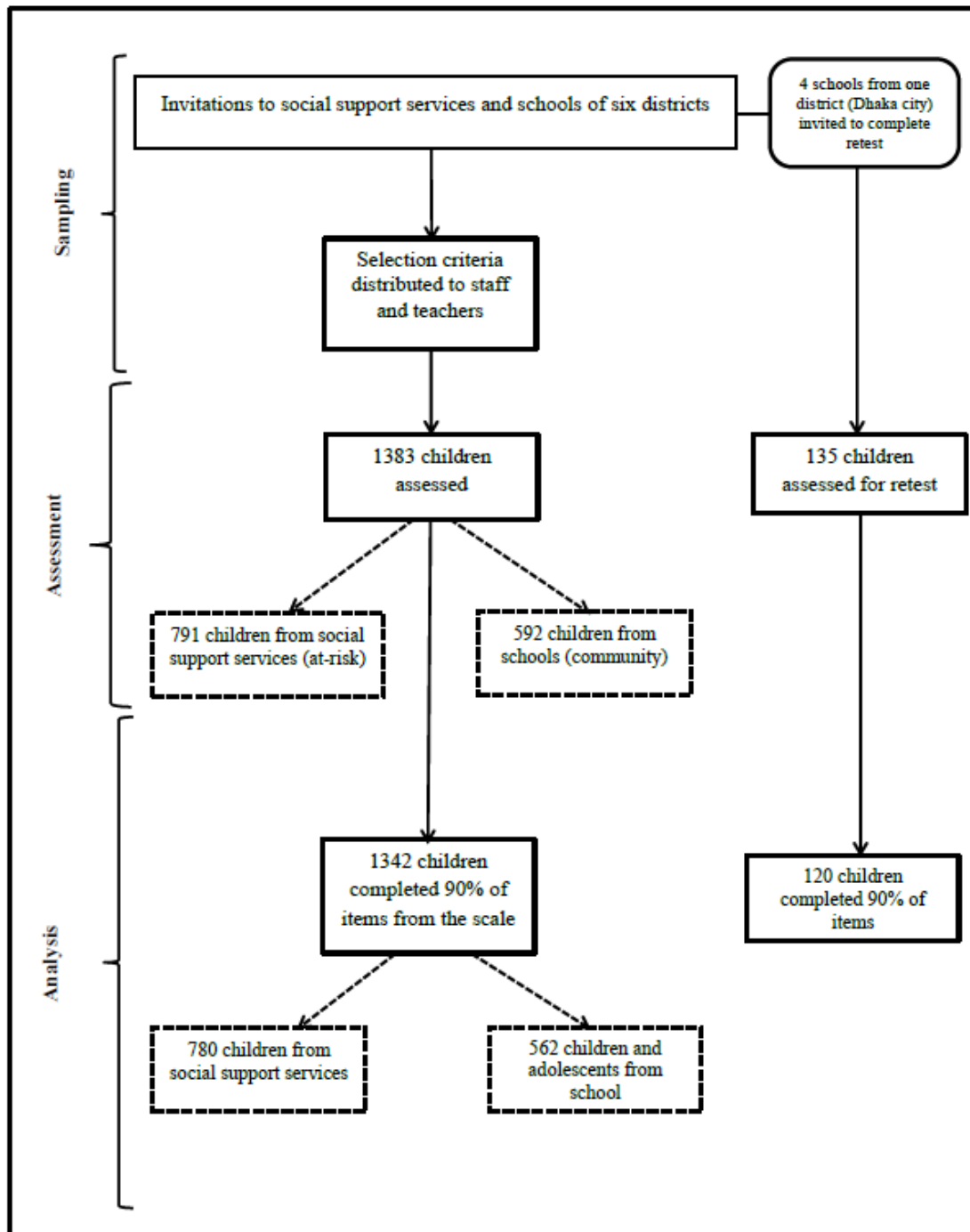
Procedure:

Ethical issues in the study were reviewed and approval granted by the Macquarie University Human Research Ethics Committee (Ref no. 5201001017 dated 5/11/2010, Appendix C). Written permission was sought from every institution and organization where the study was to be conducted. Individual consent was collected for each child from their parents or caregivers and children provided assent, before all assessment tasks. Issues of voluntary participation, freedom to respond independently, confidentiality and seeking clarification during assessment were discussed with the children at the beginning of the assessment sessions. Assessments were conducted at a time decided by the organisation, in groups of up to 30 children unless children were aged less than 12 years or were illiterate. In such cases the maximum number of children in the assessment group was 10 and items were read aloud by the researcher (along with items for another study, see Deeba & Rapee, 2014). A psychology post-graduate research student was recruited to assist the first author to conduct assessment sessions. The assistant was trained in administering the measures and the ethical issues involved with assessment. The test-retest reliability of the measure was checked after

3.5 weeks following the same procedure stated above with 120 school children from four schools in the capital city.

Figure -1

Flow-chart to demonstrate sample sizes of participants in the study at different steps



For clarity, distributions of participants and samples sizes for particular analyses are shown in Figure 1.

Statistical Analysis

All analyses were conducted using SPSS V.21 and its extension AMOS V.21. Missing data were handled by the Person Mean Substitution method (PMS, (Downey & King, 1998) due to the non-linear scoring of the items. Confirmatory Factor Analysis (CFA) with the 13-item CRIES compared three different measurement models based on previous studies (e.g. Giannopoulou, et al., 2006; Smith et al., 2003; Zhang et al., 2011). The models were: Model 1- single-factor (PTSD) model, Model 2- two inter-correlated latent factors, [(i) intrusion/arousal and (ii) avoidance], Model 3 - three inter-correlated latent factors [(i) intrusion (ii) avoidance and (iii) arousal] and Model 4 - three latent factors [(i) intrusion (ii) avoidance and (iii) arousal] loading onto a single higher-order factor (PTSD). We did not run a separate CFA for the CRIES-8 since the items and subscales are embedded in the CRIES-13.

Maximum Likelihood (ML; Byrne, 2010) tests were used on the whole sample (N=1342) for model identification, and then two separate multiple group confirmatory factor analyses (MCFA) were run on the best fitting model to evaluate model invariance between gender and age-groups (younger/older) by group affiliation (community and at-risk) following Byrne (2004). Standardized parameter estimates are reported. Model fit statistics in the present study were selected from suggestions by Jackson, Gillaspy, and Purc-Stephenson (2009) and cut-offs for model fit indices were selected as per Kline (2005) and Worthington and Whittaker (2006) as best for clinical measures. These included the goodness-of-fit index (GFI), for which values greater than .90 are acceptable (Hu & Bentler, 1999), the comparative fit index (CFI), and the Tucker-Lewis index (TLI) where values equal to or greater than .90 are considered a good fit

(Dumenci & Achenbach, 2008). To observe differences between observed and predicted covariances, the Root Mean Square Error of Approximation (RMSEA) was chosen. RMSEA values less than .06 (Hu & Bentler, 1999) or .08 (Dumenci & Achenbach, 2008) have been proposed as indicating a good-fitting model, though RMSEA values of .06-.08 are often reported as acceptable or reasonable rather than good (Kline, 2005; McDonald & Ho, 2002). To determine the optimal and most parsimonious model, the Akaike Information Criterion (AIC, Akaike, 1973) and Bayes Information Criterion (BIC; Schwarz, 1978) were checked as per suggestions by Bozdogan (1987) that lower values indicate better fit. Factor loadings on items found not to be invariant across groups in MCFA were reported.

Reliability of the measures was evaluated by examining both internal consistency and test-retest reliability. Convergent validity was determined by calculating Pearson's product moment correlation coefficients between the CRIES, SCAS-20 and SMFQ and discriminant validity was determined by comparing scores from at-risk children (from support services) and community children (from schools). Finally, to understand the influence of age and sex on the measure, 2 (gender) X 2 (age group) ANCOVAs were conducted on the CRIES-13 and CRIES-8 total and sub-scale scores controlling for group affiliation (at-risk and community children).

Results

Confirmatory Factor analysis

All hypothesised models for the CRIES were identified in the measurement model specification analyses. Results are reported in Table 3. The χ^2 value was significant at $p < .001$ for all the models which is common for any large sample (Byrne, 2010),

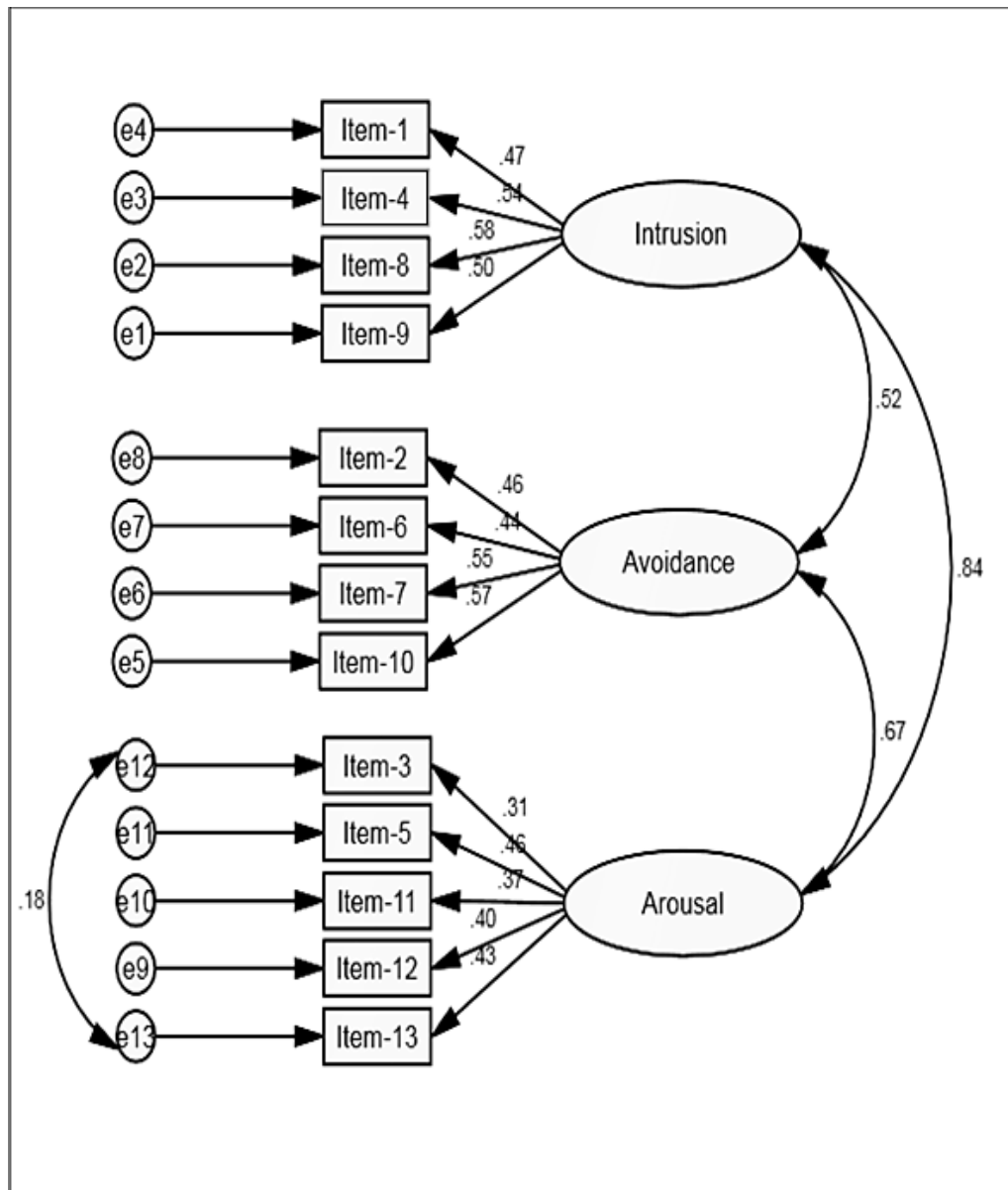
therefore, we considered the other fit indices to decide the best structural model for both the long and short versions of the measure.

As can be seen in Table 3, the modification indices for Models 3 and 4 were identical and these two models for the CRIES-13 produced a better fit than either Model 1 or Model 2. Therefore, based on the “Principle of Parsimony” (Bollen, 1989), we selected Model 3 (see Figure 2), with three correlated factors as the most suitable representation of the factor structure of the CRIES-13. The correlations shown by the double headed arrows between the three factors also represent the correlations between the three sub-scales of the measure. All items were positively correlated and correlation coefficients for the three latent factors were moderate to strong (.52-.81). All items had standardized estimates that ranged from .36-.58. None of the multiple R^2 values were below .02 although Item 3 (*Do you have sleep problems?*), Item 11 (*Do you get easily irritable?*) and Item 12 (*Are you alert and watchful even when there is no obvious need to be?*) did not load strongly on their relevant latent factor (arousal; R^2 = .13-.16). Factor loadings for items on intrusion (.47-.58) and avoidance (.44-.57) were generally higher than for arousal (.36-.47). Based on the covariance matrices, a free parameter was needed between the error terms of Item 3 (*Do you have difficulties paying attention or concentrating?*) and Item 13 (*Do you have sleep problems?*). When these error terms were permitted to vary together (constrained under the same latent variable) improvements were shown in the fit for Model 3: CMIN=132.33, DF=61, GFI=.98, CFI=.96, TLI=.95, RMSEA=.03 (95% CI .02-.04), AIC=192.22, BIC=348.28. Therefore, it was evident that a slightly modified Model 3 provided the best factor structure for the measure.

Consequently we decided to use the modified Model 3 as the hypothesised baseline model to examine model invariance with gender and age-group, within each sample

Figure -2

Three-factor solution for the CRIES-13 with total group (N=1342)



(community/ at-risk). Initially, we tested model invariance with the four different groups of gender (community boy, community girl, at-risk boy and at-risk girl) and then with the age-groups (community-younger, community older, at-risk younger, and at-risk older). The results of the model invariance tests for the baseline model and constrained models are reported in Table 4 with both gender and age-groups. Results failed to

Table-3

Fit indices for the four hypothesised models on the CRIES-13 based on the total sample.

	χ^2	Df	<i>p</i>	GFI	CFI	TLI	RMSEA (95% CI)	AIC	BIC
Model 1	363.04	65	.001	1.00	.84	.81	.06 (.05-.06)	415.04	550.29
Model 2	206.11	64	.001	.98	.91	.92	.04 (.04-.05)	260.10	400.55
Model 3	166.33	62	.001	.98	.94	.93	.04 (.03-.04)	224.33	375.18
Model 4	166.33	62	.001	.98	.94	.93	.04 (.03-.04)	224.33	375.18

Note: CRIES-13=Children's Revised Impact of Events Scale, 13-item version.

Table 4

Multiple group analyses for model invariance for Model 3 of CRIES-13 with four groups of community and at-risk children by gender and age-groups

	χ^2	df	p	RMSEA (95% CI)	$\Delta\chi^2$	Δdf	Statistical significance
<i>Four groups by gender^a</i>							
Model A: Unconstrained	366.13	244	.001	.019 (.015-.023)	-	-	-
Model B: Measurement weights	140.93	274	.001	.019 (.015-.023)	44.80	30	.040
Model C: Structural covariances	432.94	292	.001	.019 (.015-.023)	66.81	48	.038
Model D: Measurement residuals	524.56	334	.001	.021 (.017-.024)	158.43	90	.001
<i>Four groups by age-group^b</i>							
Model A: Unconstrained	348.51	244	.001	.018 (.013-.022)	-	-	-
Model B: Measurement weights	394.54	274	.001	.018 (.014-.022)	46.03	30	.01
Model C: Structural covariances	437.32	292	.001	.019 (.015-.023)	88.82	48	.01
Model D: Measurement residuals	564.31	334	.001	.023 (.019-.026)	215.80	90	.001

Note: ^a = Community-boy, community-girl, at-risk-boy and at-risk girl, ^b = Community-younger, community-older, at-risk-younger

and at-risk older, CRIES= Children Impact of Event Scale.

demonstrate complete structural invariance across gender and age, which is not unusual. Importantly, however, for all models (i.e. unconstrained, constrained with measurement weights, structural covariances and measurement residuals) tests for the modified Model 3 yielded an acceptable range of model fit indices for each subgroup. Factor loadings for individual items on the three factors (Intrusion, Avoidance and Arousal) were reasonable for community boys (.27-.64), community girls (.24-.64), at-risk boys (.22-.59), and at-risk girls (.26-.64) and also for community younger (.29-.55), community older (.11-.67), at-risk younger (.15-.60), and at-risk older (.35-.65) children. Hence these results indicate that the modification of Model 3 provided the best fit for the data consistently across all subgroups.

Reliability

Cronbach's alpha for the total CRIES-13 was $\alpha=.74$ and for the total 8-item version was $\alpha=.70$. Internal consistencies for the three subscales of the two versions of the CRIES were moderate: Intrusion ($\alpha=.60$), Avoidance ($\alpha=.58$) and Arousal ($\alpha=.50$). Cronbach's alphas within the different sub-groups are reported in Table 5.

Pearson product moment correlation coefficients were calculated between questionnaire scores on the two versions of the measure separated by 3.5 weeks within a sub-group of community children ($N=120$). Results showed a significant moderate relationship for the total score on the CRIES-13 ($r=.72, p<.001$), and for the CRIES-8 ($r=.62, p<.01$). Test-retest reliability for each sub-scale was also moderate (Intrusion .67 [$p<.01$], Avoidance .50 [$p<.01$], and Arousal .67 [$p<.01$]).

Table 5

Internal consistency (Cronbach's alpha) of two versions of CRIES and three sub-scales of the scale with different sub-groups of the sample

Sub-groups of sample		CRIES-13	CRIES-8	Intrusion	Avoidance	Arousal
<i>By types of organizations</i>	Community	.70	.62	.53	.60	.47
	At-risk	.72	.67	.63	.55	.49
<i>By gender</i>	Boys	.68	.60	.57	.53	.45
	Girls	.74	.68	.62	.59	.51
<i>By age-groups</i>	Younger	.70	.61	.56	.54	.50
	Older	.75	.69	.65	.62	.50

Note: CRIES-13= Children Impact of Event Scale-13; CRIES-8= Children Impact of Event Scale-8

Validity

Convergent validity

The relationship between scores on the two versions of the CRIES and the SCAS-20 and SMFQ were calculated. All correlations were positive and significant at $p < .01$. Specifically the following correlations were demonstrated with the SCAS-20: CRIES-13 ($r = .58$), CRIES-8 ($r = .48$), Intrusion ($r = .36$), Avoidance, ($r = .20$), Arousal ($r = .41$). Similarly, correlations with the SMFQ were as follows: CRIES-13 ($r = .42$), CRIES-8 ($r = .34$), Intrusion ($r = .44$), Avoidance, ($r = .34$), Arousal ($r = .53$).

Discriminant validity

Scores on the CRIES-13 and CRIES-8 (as well as each subscale) were compared between the two samples of children: community children (selected primarily from schools in the general community) and at-risk children (selected from social support centres). In each case, at-risk children scored significantly higher on the various measures than community children (all p 's $< .01$), see Table 6.

Demographic differences on CRIES

Total scores on the CRIES-13 and CRIES-8 and also each sub-scale were compared between gender and age groups using a series of 2X2 ANCOVAs¹, with the two samples (community and at-risk) included as a covariate. On the CRIES-13, there were significant main effects for gender, $F(4, 1337) = 17.99, p < .001, \eta_p^2 = .01$ and age-group, $F(4, 1337) = 26.65, p < .001, \eta_p^2 = .02$, but the interaction between gender and age group was not significant, $F(4, 1337) = .001, p = .94, \eta_p^2 = .01$. Similarly, for the CRIES-8, there were significant main effects for gender, $F(4, 1337) = 9.37, p < .01, \eta_p^2 = .01$, and

¹ Similar analyses were conducted to examine subgroup differences separately for the two samples, community and at-risk children. Results were very similar to those for the total sample and therefore only the total sample's analyses are reported here.

Table 6

Means, *SDs* of CRIES-13, CRIES-8 and the three sub-scales, first on the total sample and then comparing the two sub-samples

Measure	Total (<i>N</i> =1342)	Community (<i>N</i> =562)	At-risk (<i>N</i> =780)	t-tests comparing community and at-risk samples
	M (<i>SD</i>)	M (<i>SD</i>)	M (<i>SD</i>)	
<i>CRIES-13</i>	25.12 (11.87)	22.08 (10.97)	27.30 (12.02)	<i>t</i> (1340)=-8.15, <i>p</i> <.001
<i>CRIES-8</i>	17.11 (8.35)	15.27 (7.88)	18.43 (8.44)	<i>t</i> (1340)=-6.96, <i>p</i> <.001
Intrusion	8.59 (4.86)	7.61 (4.49)	9.30 (4.99)	<i>t</i> (1340)=-6.39, <i>p</i> <.001
Avoidance	8.51 (5.44)	7.66 (5.37)	9.13 (5.41)	<i>t</i> (1340)=-4.91, <i>p</i> <.001
Arousal	8.00 (5.28)	6.80 (4.78)	8.87 (5.45)	<i>t</i> (1340)=-7.19, <i>p</i> <.001

Note: CRIES-13=13 item Children's Revised Impact of Events Scale, CRIES-8=8-item Children's Revised Impact of Events Scale.

age-group, $F(4, 1337) = 25.48, p < .001, \eta_p^2 = .02$, but no significant interaction between gender and age group, $F(1, 1334) = .08, p = .78, \eta_p^2 = .00$. Means and *SDs* for the groups by gender and age-groups are given in the Table 7. On average, younger males scored lower on the total scales and subscales when adjusting for group affiliation.

Differences on the three sub-scales were tested separately. For Intrusion, there was no significant main effect of gender, $F(4, 1337) = 3.42, p = .065, \eta_p^2 = .01$, but the effect for age-group was significant, $F(4, 1337) = 22.84, p < .001, \eta_p^2 = .02$. The interaction between gender and age group was not significant, $F(4, 1337) = .94, p = .33, \eta_p^2 = .01$. For the Avoidance sub-scale there were significant main effects for both gender, $F(4, 1337) = 9.48, p < .01, \eta_p^2 = .01$, and age-group, $F(4, 1337) = 11.55, p < .001, \eta_p^2 = .01$. However, the interaction between gender and age group was not significant, $F(4, 1337) = .19, p = .66, \eta_p^2 = .01$. Similarly, for the Arousal sub-scale, main effects for both gender, $F(4, 1337) = 12.31, p < .001, \eta_p^2 = .01$ and age-group, $F(4, 1337) = 49.70, p < .001, \eta_p^2 = .04$ were significant, but interaction between gender and age group was not significant, $F(4, 1337) = .38, p = .54, \eta_p^2 = .01$.

Discussion

The current study reported on the psychometric properties of a Bangla language translation of the CRIES (both 13-item and 8-item versions) among a large sample of children and adolescents from community and social support centres in Bangladesh. Overall, the properties of both versions were found to be solid and broadly consistent with data from other translations of this measure.

The factor structure of the Bangla CRIES was consistent with previous findings that have demonstrated both a simple, three inter-correlated factor structure (e.g. with flood affected Chinese children, Chen, Zhang, Liu, Liu, & Dyregrov, 2012) and a higher

Table 7

Means, *SDs* of CRIES-13, CRIES-8 and three sub-scales of the measure by group, gender and age-groups

		Community				At-risk				Total			
		Boys		Girls		Boys		Girls		Boys		Girls	
		N	M (<i>SD</i>)	N	M (<i>SD</i>)	N	M (<i>SD</i>)	N	M (<i>SD</i>)	N	M (<i>SD</i>)	N	M (<i>SD</i>)
<i>CRIES-13</i>	Younger	114	19.14 (11.09)	175	19.81 (10.01)	156	23.53(10.71)	311	27.74 (11.23)	270	21.79(11.04)	486	24.88(11.45)
	Older	114	23.73 (10.44)	159	23.30 (11.29)	83	25.19(10.32)	230	30.04 (13.64)	197	24.35 (10.39)	389	28.10 (12.93)
<i>CRIES-8</i>	Younger	114	13.67 (7.84)	175	13.74 (7.24)	156	16.03 (7.41)	311	18.58 (8.04)	270	15.03 (7.67)	486	24.88 (11.45)
	Older	114	16.46 (7.89)	159	17.25 (8.06)	83	17.83 (7.59)	230	20.09 (9.48)	197	17.04 (7.78)	389	18.93 (9.02)
<i>Intrusion</i>	Younger	114	6.72 (4.16)	175	7.32 (4.43)	156	8.14 (4.82)	311	9.05 (4.84)	270	7.54 (4.59)	486	8.43 (4.76)
	Older	114	8.30 (4.66)	159	8.07 (4.59)	83	9.61 (4.35)	230	10.31 (5.34)	197	8.85 (4.57)	389	9.39 (5.16)
<i>Avoidance</i>	Younger	114	6.95 (5.05)	175	6.42 (4.76)	156	7.89 (5.15)	311	9.52 (5.29)	270	7.49 (5.12)	486	8.41 (5.31)
	Older	114	8.17 (5.58)	159	9.18 (5.17)	83	8.21 (5.16)	230	9.77 (5.68)	197	8.19 (5.39)	389	9.53 (5.69)
<i>Arousal</i>	Younger	114	5.75 (4.80)	175	6.07 (4.55)	156	7.50 (5.11)	311	9.16 (5.24)	270	6.76 (5.05)	486	8.05 (5.21)
	Older	114	7.26 (4.43)	159	8.05 (4.97)	83	7.36 (4.54)	230	9.95 (5.94)	197	7.35 (4.47)	389	9.17 (5.63)

Note: CRIES-13=13 item Children Revised Impact of Event Scale, CRIES-8= 8-item Children Revised Impact of Event Scale

order three-factor structure solution (e.g. with earthquake affected Greek children , Giannopoulou et al., 2006). Given that a simple three-factor structure is the more parsimonious solution, our data are more consistent with the former results, albeit that allowing the error terms of two items to correlate improved the fit even more. Overall, model fit indices were within acceptable ranges, however at the individual item level some items showed relatively low relationships with their respective factor (Items 3, 11, and 12). Nonetheless, we do not recommend removal of these items since the R^2 values are all above .02 (Hooper, Coughlan, & Mullen, 2008) and conceptually they provide a broader coverage of the relevant construct. In general, the arousal factor (.36-.47) did appear to be the weakest of the three subscales, which is consistent with previous research (Giannopoulou et al. , 2006). Therefore, future work may benefit from identification of stronger items reflecting the arousal symptoms of PTSD. However, the overall factor structure suggests that items on the CRIES sufficiently represent symptoms related to post-trauma reactions among children from Bangladesh, further supporting the universality of these symptoms (Goenjian et al., 1995; Smith et al., 2003).

The factor structure of the measure was largely consistent across various subgroups of children, including younger and older as well as girls and boys both within community and at-risk samples, as the model fit indices were within expected ranges. However, tests of model invariance indicated some significant differences between factor structures for particular subgroups suggesting some minor differences in the ways in which younger/ older and boy/girls children verbalize or express PTSD symptoms. The differences between groups may be due to common response patterns, for example young girls with limited literacy might respond more consistently with each other than with the broader population (Gregorich, 2006). These differences may also be reflected

in the differences between subgroups on mean scores. On the other hand, the factor structure for the CRIES appeared largely similar for both community and at-risk children, supporting the universal characteristics of post-trauma symptoms irrespective of the types of traumatic exposure. The breadth of the sample in this study adds to the existing literature, which has mostly been conducted on samples following a specific type of traumatic experience, for instance, war (Smith et al., 2003), earthquake (Giannopoulou et al., 2006), or flood (Zhang et al., 2011).

The data demonstrated that both versions of the CRIES showed good reliability when used with Bangla-speaking children and adolescents. Internal consistencies for the full 13-item and 8-item CRIES and also each sub-scale were acceptable and similar to findings from other cultures (e.g. Dyregrov et al., 1996; Smith et al., 2003; van der Kooij et al., 2013). Test-retest reliability in our study showed acceptable stability of the measures although the modest results were not as strong as stability reported in some previous research (van der Kooij et al., 2013). Obtaining low levels of alpha is common for scales with very few items. Studies using the CRIES across various countries have found similar alpha values for the subscales to those found in the current study. Clearly, results from the sub-scales should be interpreted with caution and should not be used independently for diagnostic purposes.

As expected, the measure correlated highly with measures of anxiety and depression (see, Table 5) which is consistent with the results found by Lau et al., (2013) with Chinese adolescents affected by earthquake. Among the three sub-scales, arousal showed higher correlations with the other measures which is also consistent with findings by Lau et al. The moderate correlations with all total and sub-scales of the CRIES with the SCAS-20 and SMFQ indicate that although PTSD is related to both

anxiety and depression, it can be identified as a construct that is distinct from both (Yule & Williams, 1990). Importantly, the CRIES-13 and CRIES-8 were able to discriminate between children from the general community and those residing in social support centres. Given that the children from support centres are considerably more likely to have experienced a large number of traumatic events (Deeba & Rapee, 2014), these children were also at likely higher risk for PTSD and related difficulties. Therefore, these results indicate that the Bangla version of the CRIES is able to identify children who are at increased risk for PTSD, demonstrating its construct validity. Unfortunately, it was not possible in this study to obtain actual clinical diagnoses on any groups of children and therefore these conclusions about validity are based on at-risk status rather than clinical status necessitating caution in their interpretation. The lack of a clinically diagnosed group with PTSD also means that we were not able to evaluate diagnostic cut-off scores for the CRIES (Children and War Foundation, 2005) among this Bangladeshi group of young people. Examination within other samples (e.g. Australian children (Dow, Kenardy, Brocque, & Long, 2012) has suggested different cut-off scores to those originally suggested by Perrin et al (2005) based on data from children in the UK. Therefore, further research is necessary to determine the best cut-off scores to identify clinical cases among children from Bangla speaking communities.

Among the Bangladeshi sample, girls and older children obtained higher scores on both versions of the CRIES than males, results that are consistent with other studies (Stallard et al., 1999; Voges & Romney, 2003). From factor analysis it seems that our participants' primary responses to trauma are reflective of the three-factor structure of PTSD symptom clusters as represented in DSM-IV (APA, 1994). However, one of our findings is most interesting in the sense that there were gender differences on both avoidance and arousal sub-scales but not on intrusion. It is possible that these results

show the universality of intrusion as a characteristic of PTSD (Green et al., 1991) given that girls scored higher on the other two symptom clusters but not on intrusion. As the higher scores from females on avoidance and arousal are more consistent with typical findings that females tend to report higher levels of psychological reactions to - traumatic events (Giaconia et al., 1995), as well as more generally higher levels of anxiety and depression (Davis, 2000). Moreover, in a patriarchal culture like Bangladesh it is also likely boys will report less avoidance and arousal symptoms due to the influence of social roles.

These gender and age differences are consistent with broader findings relating to gender and age differences in the experience of traumatic events and reporting of stress reactions. Many studies have shown that although males experience a greater number of traumatic events, girls and older children report higher levels of classic symptoms of PTSD as reactions to these events (Dyregrov et al., 1996; Giannopoulou et al., 2006; Yule, 1999). Other authors have suggested that the three main criteria of PTSD better represent older children's post-traumatic stress reactions than younger (Broman-Fulks et al., 2009). This indicates the need for extensive studies on stress reactions in younger children in future studies. However, before administering the scale with any children, researchers should take care to familiarize themselves with the symptoms of PTSD in children and adolescents as per diagnostic criteria. Given the large and diverse sample of Bangladeshi children included in this study, the scores obtained by various subgroups (such as different ages, genders or risk status) will allow mental health professionals or researchers in Bangladesh to compare their samples with the relevant subgroup.

One of the main limitations of this study was the lack of diagnostic data. Diagnoses provide the gold standard against which to evaluate the validity of a measure of

psychopathology (Jaeschke, Guyatt, & Sackett, 1994) and the lack of this standard means that it was not possible to determine the ability of the CRIES to identify likely cases. This limits the conclusions we can draw regarding the use of the Bangla CRIES for population screening (Dow et al., 2012; Kenardy et al., 2006).

Nevertheless, the current data suggest that the Bangla CRIES is a potentially useful instrument to assess post-trauma reactions among young Bangladeshi people. Given the impact on functioning of experiences with severe trauma among children (Abdel-Mawgoud & al-Haddad, 1997; Almqvist & Brandell-Forsberg, 1997; Caffo, Forresi, & Lievers, 2005; Laor et al., 1996; Terr, 1983), identification of distress in response to these experiences as early as possible is important in a developing country like Bangladesh. These measures should be of value in both clinical settings and at a community level to assess the need for services. The short CRIES-8 is likely to be especially useful in acute crisis situations. The particular strengths of the CRIES, including brevity, simplicity, and low cost, means that this measure will be of tremendous value for identification, assessment, and appropriate intervention for young people in Bangladesh. Such a tool will be useful for professional mental health workers as well as semi-skilled professionals who work with emergencies or in crisis-affected areas.

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CHAPTER 3

Psychometric properties of two measures of childhood internalising problems in a Bangladeshi sample

Farah Deeba¹, Ronald M. Rapee^{1*} and Tania Prvan²

¹ Centre for Emotional Health, Department of Psychology, Faculty of Human Sciences, Macquarie University, NSW 2109, Australia

² Department of Statistics, Faculty of Science, Macquarie University, NSW 2109, Australia

*Requests for reprints should be addressed to Ronald M. Rapee, Centre for Emotional Health, Department of Psychology, Macquarie University, NSW 2109, Australia, (Email: ron.rapee@mq.edu.au)

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Abstract

Objectives: In order to assist mental health services in developing countries, a key issue is the availability of psychometrically sound, brief and cost effective measures that have been tested within the relevant context. The present study was designed to evaluate within a young Bangladeshi population, the psychometric properties of two widely used Western measures of internalising distress in young people: the short form of the Spence Children's Anxiety Scale (SCAS) and the Short Mood and Feelings Questionnaire (SMFQ).

Method: The sample included 1360 children and adolescents aged 9-17 years ($M=12.3$ years, $SD=2.12$) recruited from six districts of Bangladesh, including both community and emotionally at-risk participants. A total of 135 children were re-tested on the measures within 3 to 4 weeks.

Results: Confirmatory factor analyses showed single-factor structures for both scales in the total sample and in both community and at-risk participants separately. Multiple group analyses across gender and age-group within the at-risk and community samples showed that the single factor structure was suitable regardless of subgroup. Analyses also indicated acceptable internal consistency, test-retest reliability and construct validity for both scales.

Conclusion: The two measures show promise as brief, reliable and valid instruments for the assessment of internalising distress among young people from Bangla-speaking communities.

Practitioner Points:

Positive Clinical implications

- These two measures of internalising distress in young people showed solid psychometric properties within samples collected from various parts of Bangladesh. The measures can therefore be used to assess anxiety and depression in Bangla speaking youth.
- These measures should be of value in both clinical settings and at a community level to assess the need for services.

Cautions and limitations

- Resource limitations did not allow comparison against diagnostic criteria and therefore cutoff scores to indicate clinical status among Bangladeshi youth will require further research.

Key words: Internalising problems, anxiety, depression, SCAS, SMFQ, children, adolescents, Bangla, Bangladesh

Internalising problems such as anxiety and depression are not only the most common psychiatric problems in childhood (Costello, Mustillo, Erkanli, Keeler, & Angold, 2003) but are also difficult to identify and treat (Costello & Angold, 2006). Around 5-15% of children and adolescents have been found to suffer from both anxiety and mood disorders (Merikangas, Nakamura, & Kessler, 2009). Untreated anxiety and depression tend to persist over time and predict increased risk for future disorders (Moffitt, Harrington, et al., 2007; van Lang, Ferdinand, & Verhulst, 2007). Moreover, evidence suggests that children who have internalising problems at a sub-threshold level also remain at risk of developing psychological disorders in later life (Clark, Rodgers, Caldwell, Power, & Stansfeld, 2007; Jaffee et al., 2002). Accurate identification and early detection of potential cases is important to ensure not only appropriate services but also for prevention of later disorders (Moffitt, Caspi, et al., 2007). Unfortunately, despite their high prevalence, only 30% of children suffering from internalising disorders in developed countries receive appropriate intervention (Chavira, Stein, Bailey, & Stein, 2004). Similar or even higher prevalence and lower levels of help-seeking have been found in developing countries (Paula, Duarte, & Bordin, 2007), given their greater population and reduced resources for mental health services (Funk, Drew, Freeman, & Faydi, 2010; Patel, Flisher, Nikapota, & Malhotra, 2008).

Bangladesh has a population of more than 150 million people among whom over 51 million are under the age of 18 years (Government of People's Republic of Bangladesh, 2012). A similar percentage of children suffer anxiety and depression in Bangladesh as those from developed countries (Mullick & Goodman, 2005). Given the large number of stressful events (such as annual flooding or cyclones, frequent road and water transport accidents, domestic violence) that occur in a country like Bangladesh, the identification and treatment of common psychopathological cases is urgently needed. Due to their ease of administration, questionnaire measures provide invaluable tools to screen for distress in community settings,

to track improvement throughout treatment, and to save time for professionals by screening a problem prior to more intensive and in-depth interviews (Silverman & Ollendick, 2005; Stallings & March, 1995). Therefore, in the context of limited mental health resources in a highly populated and developing nation like Bangladesh, validating cost-effective, brief, self-report assessment tools to identify symptoms of childhood psychological problems early can be highly valuable.

Several well-validated self-report instruments have been developed for use in Western countries to assess anxiety and depression among children and adolescents (e.g., Beck, 1961; Kovacs, 1992; Spielberger, 1973). Among the measures of childhood internalising, two scales, the Spence Children's Anxiety Scale (SCAS; Spence, 1998) and the Short Mood and Feelings Questionnaire (SMFQ, Angold et al., 1995) were selected for use in the current study based on several positive features. Both contain items that reflect key features of diagnostic classification systems (e.g., DSM-IV-TR, American Psychiatric Association., 2000) and both measures were developed directly from child samples rather than being modified from similar adult measures. These scales are also provided free of charge by their developers, which is an important consideration when working in a developing country. Finally, they are relatively brief and have shown strong psychometric properties in both clinical and community samples. For the above reasons it seemed that validating the shortened form of the SCAS (20-items; S. H. Spence, personal communication, July 26, 2010) and SMFQ (Angold et al., 1995) would be useful for clinical assessment, intervention, and research purposes in the context of Bangladesh.

The main version of the SCAS (Spence, 1998) is a 38-item self-report questionnaire, which measures six anxiety dimensions including generalised anxiety, separation anxiety, social phobia, panic attacks and agoraphobia, physical injury fears and obsessive-compulsive symptoms. These dimensions parallel several categories of childhood anxiety disorders

described in the DSM-IV-TR. In support of the measure's validity, a clinical sample of children diagnosed with various types of anxiety disorders was found to score high on particular subscales corresponding to their specific anxiety disorder (Nauta et al., 2004). The full version of the SCAS has demonstrated high internal consistency and its psychometric properties have been established across various populations, for instance, Australian (Spence, 1998), Dutch (Muris, Schmidt, & Merckelbach, 2000), Spanish (Tortella-Feliu, Balle, Servera, & García De La Banda, 2005), Hellenic (Mellon & Moutavelis, 2007), German and Japanese (Essau, Sakano, Ishikawa, & Sasagawa, 2004), including a few developing countries, e.g. Iran (Essau, Olaya, Pasha, O'Callaghan, & Bray, 2012) and South Africa (Muris, Schmidt, Engelbrecht, & Perold, 2002). Factor analyses across different studies replicated the six factors in the full measure. Cronbach's alpha for the full scale ranges from .90 to .93 (Muris et al., 2000; Spence, 1998; Spence, Barrett, & Turner, 2003) and test-retest reliability ranges from .60-.63 (Spence, 1998; Spence, Barrett & Turner, 2003). Different types of validity have also been shown to be suitable in different studies conducted across more than 15 countries.

A shorter version of the SCAS (20 items) was recently developed by its author based on the highest loading items from five of the six subscales: Generalised Anxiety, Social Phobia, Separation Anxiety, Obsessive-compulsive, and Panic. To date, the short form of the SCAS has received little psychometric evaluation. In an unpublished evaluation of the SCAS-20 the scale was found to have an overall reliability of .89 and Cronbach's alpha for each of the subscales were as follows: .73 for Obsessive Compulsive (OC); .70 for Social Phobia (SP); .70 for Panic (PA); .69 for Generalised Anxiety (GA) and .52 Separation Anxiety (SA) (Coysh, 2011).

The SMFQ (Angold et al., 1995) provides a 13-item brief scale that was derived from the original 33-item Mood and Feelings Questionnaire (MFQ; Angold & Costello, 1987). The

measure was developed to detect DSM-IV-based signs and symptoms of depressive disorders in children and adolescents aged 6-17 years and used to quickly assess core depressive symptoms, primarily for epidemiological studies (Angold et al., 1995; Kent, Vostanis, & Feehan, 1997). The SMFQ has been shown to comprise a single factor and shows good criterion-related validity and discriminant validity to identify clinical levels of depression in children and adolescents at risk for the development of depression (McKenzie et al., 2011; Rhew et al., 2010; Thapar & McGuffin, 1998). Cronbach's alpha for the SMFQ has ranged from .87 to .90 (Angold et al., 1995; Costello, Benjamin, Angold, & Silver, 1991; Kuo, Stoep, & Stewart, 2005) and reasonable levels of sensitivity (60%) and specificity (85%) to detect diagnoses of depression have been reported at a score of 8 or more (Angold et al., 1995; Rhew et al., 2010). Unlike the SCAS, the SMFQ has rarely been evaluated in developing countries, although one study has demonstrated high internal consistency (Cronbach's alpha=.85) within South Africa (Rothon et al., 2011).

Given their clear strengths and the fact that both measures have been used across a variety of countries, these measures indicate promise for use within developing countries such as Bangladesh. Nevertheless, further investigation is needed before utilising measures in any population with a culturally and linguistically different background from their original place of development. Therefore, the main aim of the current study was to determine the psychometric properties of the SCAS-20 and SMFQ in a sample of children and adolescents from Bangladesh.

Methods

Participants

A total of 1383 children and adolescents were initially recruited for the study. The sample was recruited from 10 schools (primary, secondary and high) from rural and urban (slum and non-slum) areas and 39 social support centres. A convenience sampling method

was pursued to recruit participants through the use of flyers and by word of mouth to professionals and care workers and also by sending invitations to relevant institutions. Only institutions that gave consent to the research were included. For the analysis those children and adolescents who did not respond to all items on each questionnaire were excluded ($N = 23$, $< 2\%$). This left a total of 1360 participants (Boys=473, 34.71% and Girls=891, 65.29%) who were aged from 9 to 17 years with a mean age of 12.3 years ($SD=2.12$). The sample comprised two subgroups: 1) community children ($N=583$, Boys=234, 40.13% and Girls=349, 59.86%) who were collected through urban schools (both government and private schools) and non-Government organizations (NGOs) running educational programs with rural and slum school children living with their families, and 2) at-risk children ($N=777$, Boys= 238, 30.63% and Girls=539, 69.37%) who had experienced a serious traumatic event(s) in their life and were recruited from social support centres (both residential and out-reach programmes) run by various Government (GOs) and NGOs of the country. At-risk children in most cases lived in slum areas or shelter homes in the country. Details of the sample are given in Table 1.

Children were included in the study if they were capable of following simple age-appropriate instructions to complete the questions. Cases were excluded if they had a psychotic, developmental or intellectual disability or attention deficit hyperactivity disorder diagnosed previously by a professional mental health worker. The at-risk children were selected by staff in the institutions following given inclusion and exclusion criteria. Participation for at-risk children was higher (90%) than the community sample (75%).

A subsample of 135 community children (Boys=41, 30.37% and Girls=94, 69.63%) from four schools in Dhaka was collected for assessment of test-retest reliability and they completed the same measures 3-4 weeks (average 3.5 weeks) following initial assessment. Their mean age was 12.92 years ($SD=1.96$).

Table 1

Numbers of children in the various subgroups in the total sample and community and at-risk sub-samples

	<u>Community children</u>			<u>At-risk children</u>			<u>Total</u>		
	Boys (N, %) ^a	Girls (N, %) ^a	Total (N, %) ^b	Boys (N, %) ^a	Girls (N, %) ^a	Total (N, %) ^b	Boys (N, %) ^a	Girls (N, %) ^a	Total (N, %) ^b
<i>Age-groups</i>									
Younger (9-12 years)	114, 39.45%	175, 60.55%	289, 21.25%	155, 33.33%	310, 66.67%	465, 34.19%	269, 35.68%	485, 64.32%	754, 55.44%
Older (13-17 years)	120, 40.82%	174, 59.18%	294, 21.62%	83, 26.60%	229, 73.40%	312, 22.94%	203, 33.50%	403, 66.50%	606, 44.56%
<i>Education/work status</i>									
Education	187, 35.42%	341, 64.58%	528, 39.00%	91, 30.23%	210, 69.77%	301, 22.23%	278, 33.53%	551, 67.47%	829, 61.23%
Work	0, 0%	1, 100.00%	1, 0.07%	19, 31.67%	41, 68.33%	60, 4.43%	19, 31.15%	42, 68.85%	61, 4.51%
Education and work	14, 100.00%	0, 0%	14, 1.03%	69, 33.50%	137, 66.50%	206, 15.21%	83, 37.73%	137, 62.27%	220, 16.25%
Other	0, 0.00%	0, 0.00%	0, 0.00%	2, 28.57%	5, 71.43%	7, 0.52%	2, 28.57%	5, 71.43%	7, 0.52%

Note: ^a = Row percentage, ^b = Percentage with total sample

Another sub-sample of 114 children (Boys=50, 43.86% and Girls=64, 56.14%; mean age=12.6, $SD=2.13$) were used to determine convergent, divergent and discriminant validity of the measures. Half of these children had experienced severe traumatic events and indicated likely post-traumatic stress difficulties on the CRIES-13 (see below). This group was matched with another 57 children who had not experienced a severe traumatic event. The groups were matched on several demographic variables, including age, gender, religion, and educational and work status and pairs were taken from within similar institutions. Thus 27 pairs (N=54, 47.36%; 12 pairs of Boy and 15 pairs of Girls) were selected from community schools and 30 pairs (N= 60, 52.64 %; 13 pairs of Boys and 17 pairs of Girls) were selected from social service organisations.

Measures

The Spence Children's Anxiety Scale-20 (SCAS-20)

As mentioned above, the SCAS-20 is a simple, brief self-report questionnaire to assess symptoms of anxiety. Items are rated on a 4-point Likert-type scale (never, sometimes, often, and always) with scores ranging from 0 (Never) to 3 (Always). Items are summed to obtain a total score with higher scores indicating higher levels of anxiety and there are also five subscales.

The Short Mood and Feelings Questionnaire (SMFQ)

The SMFQ is a simple, brief self-report questionnaire to assess symptoms of depression. Items are rated on a 3-point Likert-type response scale (0= never; 1= sometimes true; 2=always true). The total score is the sum of all responses with higher scores reflecting lower mood and risk of depression.

Children's Revised Impact of Events Scale-13 (CRIES-13)

The CRIES-13 is a well-known screening tool for post-traumatic stress disorder which has been used across a number of countries to identify PTSD in young populations. It was derived from the original 33-item Impact of Events Scale (IES; Horowitz, Wilner, & Alvarez, 1979) to identify DSM-IV-described PTSD in children 7 years and over (Dyregrov & Yule, 1995) and eventually adapted with revised wording for children (Perrin, Meiser-Stedman, & Smith, 2005; Smith, Perrin, Dyregrov, & Yule, 2003). The CRIES-13 is comprised of three separate but highly inter-correlated factors relevant to the DSM-IV criteria for PTSD (Giannopoulou et al., 2006) and also shows satisfactory convergent validity. Items are scored on a non-linear scale as follows: 0 (Not at all), 1 (rarely), 3 (sometimes) and 5 (often). Scores range from 0-65 and higher scores indicate greater PTSD symptoms. A cut-off of 30 was found to derive the best balance between sensitivity (.91) and specificity (.65) (Perrin et al., 2005) and was used in the current study to identify the subsample of children with possible PTSD. Cronbach's alpha for the total scale is high (.80) and is acceptable for the subscales of intrusion (.70), avoidance (.73) and arousal (.60) (Smith et al., 2003). Cronbach's alpha for the scale was .75 within the current sample (see, Deeba, Rapee, & Prvan, 2014).

Translation of Measures

The English versions of the SCAS-20, SMFQ and CRIES-13 were translated to Bangla following accepted guidelines for the translation of instruments (Brislin, 1986). The bilingual investigator translated the original English versions of the measures to Bangla and then another bilingual professional psychologist (who had not seen the original English versions of the scales) translated those back to English. Differences in the original and the back-translated versions were checked by the second author whose native language is

English. Any differences were resolved by discussion and agreement between the two Bangla-speaking translators.

Procedure

Macquarie University's Human Research Ethics Committee granted approval for the study (Ref no. 5201001017 dated 5/11/2010, Appendix C). Written permission was sought from every organization and school in which the study was to be conducted. Descriptive letters with flyers about the study were sent to professionals and teachers in the organizations and children were invited to take part in the study. Informed consent from parents or caregivers of the institution was obtained before administering the measures to the children. Children's participation was completely voluntary and those who participated, irrespective of completion, received a gift.

Children completed the assessment tasks within class time or at a time specified by the authorities. Assessment sessions were conducted in groups of 20 to 30 unless children were aged 11-years or less and/or were illiterate in which case maximum groups for assessing children comprised groups of 10. For both groups instruction was given with the help of visual assistance (e.g. with drawings on white/black boards). School children were capable of doing the rating scales on their own after receiving instruction. However for younger groups and illiterate groups each item was read aloud. A Clinical Psychology post-graduate student was always with the investigator to assist in conducting the sessions effectively. Test-retest reliability was checked after 3-4 (mean 3.5) weeks following the same procedure.

Statistical Analyses:

IBM SPSS and its extension AMOS (version 21) were used for all analyses. Initially data were screened using descriptive statistics in SPSS to check issues such as normality,

skewness and kurtosis. Given that these were existing measures, confirmatory factor analyses (CFA) were used to evaluate the factor structure of both measures based on models from the original papers. Reporting of the CFA model tests were done following the suggestions of DiStefano and Hess (2005). Model fit was conducted using the maximum likelihood method (ML) with Bollen-Stein bootstrapping which is robust for ordinal scale items with less than 5-categories, large sample size, most multivariate non-normal distributions and produces parameter estimates, and corrects standard errors (Byrne, 2010; Hox, 2010). Standardized estimates for all factor loadings were examined.

Model parameters were estimated from the sample covariance matrix. Based on predicted vs. observed covariance matrices (absolute fit indices), Chi-square (CMIN), commonly expressed as a chi-square (χ^2) statistic, was used for Goodness-of-fit tests for the models. To compare the given model against the null or an alternative model, RMSEA, CFI and TLI fit-indices were checked. Finally AIC and BIC were used to compare models and to identify the most parsimonious model (Burnham & Anderson, 1998). Values for RMSEA less than .08 (Dumenci & Achenbach, 2008) have been proposed as criteria for a good – fitting model, though RMSEA values of within .06-.08 are often reported as “acceptable” rather than “good” (McDonald & Ho, 2002). Values of close to .90 or greater for CFI (Bentler, 1990) and .90 or greater for TLI (Bentler & Bonett, 1980) are often indicative of good model fit. For AIC and BIC lower values of the model denote better fit corresponding to the same sample (Rayk & Marcoulides, 2006).

Analyses were run on the whole sample ($N=1360$) for initial model identification and then separate multiple group confirmatory factor analyses (MCFA) were conducted to test model invariance across gender and age-group (younger from 9 – 12 years and older 13 – 17 years) across community and at-risk samples for each measure following Byrne (2004). The

baseline model used for the multiple group analysis in AMOS was the hypothesised model that had the best goodness-of-fit statistics for the total sample.

Cronbach's alpha and test-retest reliability were determined for each total scale.. Discriminant validity was determined by comparing scores between participants in the matched "possible" PTSD and no PTSD subsamples.

Results

Confirmatory Factor analysis

Following the literature on the factor structures of the full scale SCAS and SMFQ, four models were specified for examination in the CFA for the SCAS-20 and a one-factor model was specified for the SMFQ (Spence, 1998; Spence et al., 2003; Thapar, 1998). Results are shown in Table 2. The χ^2 value was significant at $p < .001$, which is not uncommon for large sample sizes, so the other model fit indices were examined as described above. The best fitting models for SCAS-20 and SMFQ are shown in Figures 1 and 2 respectively.

SCAS-20

For the 20-item SCAS², the following four CFA models were fitted: single factor (Model 1), five uncorrelated factors (Model 2), five correlated factors (Model 3), five correlated factors loading onto one higher order factor (Model 4). Initially, the hypothesised models were tested with the complete dataset (N=1360). The fit indices were as follows: Model 1 - CMIN=997.41, DF=170, RMSEA=.06 (95% CI, .06-.07), TLI=.80, CFI=.82, AIC=1077.41, BIC=1286.02; Model 2 - CMIN=2902.70, DF=170, RMSEA=.11 (95% CI, .10-.11), TLI=.34, CFI=.41, AIC=2982.69, BIC=3191.31; Model 4 - CMIN=972.95, DF=165, RMSEA=.06 (95% CI, .05-.06), TLI=.80, CFI=.83, AIC=1062.95, BIC=1297.63).

² Item numbers as per original scale of SCAS are used for all reporting purposes.

Model 3 was inappropriate as the model covariance matrix was not positive definite as required. Therefore, based on the fit indices for the total sample, the only workable models were Model 1 and Model 4. Comparison of the chi-squares indicated that Model 4 provided a better fit for the sample than Model 1 ($\Delta\chi^2=24.46$, $df=5$, $p<.001$) and also had lower values of AIC. But the BIC value appeared better for Model 1 than Model 4. However, none of the models provided a strong fit according to the TLI and CFI indices. To further explore this limitation, we then examined the response characteristics for all items as well as the modification indices (MI) suggested within the CFA. Based on response characteristics (distribution, skew, kurtosis, and inter-item correlations), the first two items of the measure (Item 1 *I worry about things* and Item 2 *When I have a problem, I get a funny feeling in my stomach*) appeared to be answered very differently than the other items of the measures. Inter-item correlations indicated some overlap between items. However, whereas most of the inter-item correlations were low, ranging from .02-.36, items 1 and 2 correlated with each other at .57. These two items also showed the highest kurtotic distributions and the lowest variance. The modification indices obtained through the CFA, also suggested that the associated residual-terms for items 1 and 2 were highly correlated. These characteristics all suggested some unique characteristics for these two items and we therefore re-ran the two best models (Model 1 and Model 4) while allowing the associated errors for the two items to be correlated or specified as free parameters in the model for each group (community and at-risk). This improved Model 1 considerably, CMIN=675.18, DF=169, RMSEA=.04 (95% CI, .04-.05), TLI=.90, CFI=.91, AIC=1062.95, BIC=1297.63. However, Model 4 yielded a solution that included negative error variance and an unacceptable higher regression value (1.22) from anxiety to generalised anxiety (GA), and was therefore not admissible. We tried to rectify the problem initially by changing the number of iterations to 550 and 1000, yet the

results remained the same. We then tried fixing the value of the error term (e21 with GA) to three different values (0, -.5, 1), respectively. Within each case, regression weights greater

Figure 1

A single factor structure of anxiety for SCAS 20 with total sample (N=1360)

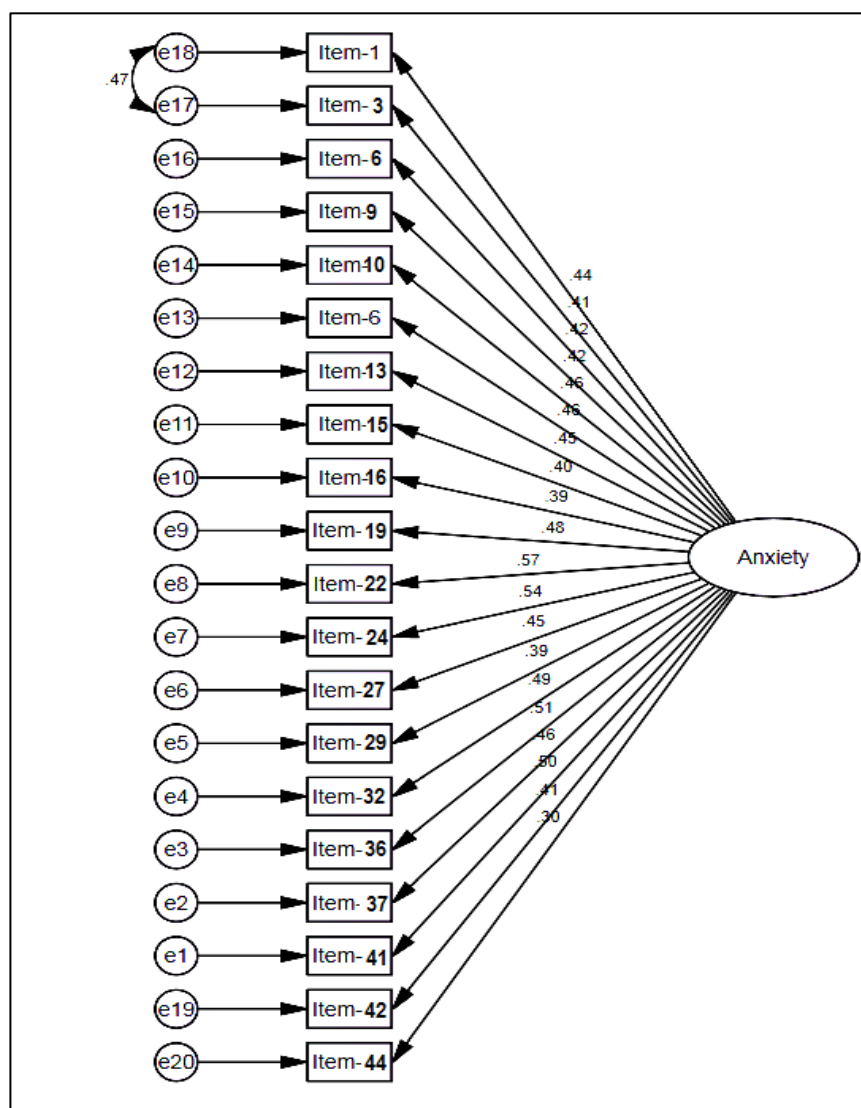


Table 2

Multiple group analyses for model invariance for single factor SCAS-20 with four groups of community (N=583) and at-risk (N=777) children by gender and age-groups

	χ^2	p	RMSEA (90% CI)	$\Delta \chi^2$	Δdf	Significance difference
<i>Four groups by gender^a</i>						
Model A: Unconstrained	1367.90	.001	.028 (.027-.030)	-	-	-
Model B: Measurement weights	1480.22	.001	.028 (.027-.033)	112.32	57	.001
Model C: Structural covariances	1512.68	.001	.028 (.026-.030)	144.78	60	.001
Model D: Measurement residuals	1938.33	.001	.032 (.031-.034)	570.43	123	.001
<i>Four groups by age-group^b</i>						
Model A: Unconstrained	1421.44	.001	.029 (.026-.031)	-	-	-
Model B: Measurement weights	1535.05	.001	.028 (.026-.03)	113.61	57	.001
Model C: Structural covariances	1570.53	.001	.029 (.027-.031)	149.09	60	.001
Model D: Measurement residuals	2002.58	.001	.033 (.032-.035)	581.13	123	.001

Note: ^a = Community-boy, community-girl, at-risk-boy and at-risk girl, ^b = Community-younger, community-older, at-risk-younger and at-risk older, SCAS 20= 20-item Spence Children Anxiety Scale;

than 1 and negative variance remained indicating that a five-factor higher-order solution did not provide a suitable model for these data. In sum, a modified single-factor model appeared to provide the best reflection of the factor structure for the Bangla SCAS-20 (Figure 1).

The next step was to examine model invariance across gender and age-group and we based these analyses on the modified single-factor model described above. Initially, we tested model invariance across four different groups of gender (community boy, community girl, at-risk boy and at-risk girl) and then similarly, within four age-groups (community-younger, community older, at-risk younger, and at-risk older). The results of the model invariance tests for the baseline model and constrained models are shown in Table 2. The single-factor model allowing the associated error terms for Items 1 and 2 to correlate provided a good fit but showed significant structural variation for both for community and at-risk groups according to the modification indices for gender (RMSEA=.04, CFI=.92, TLI=.91) and age-group (RMSEA=.04, CFI=.92, TLI=.91). However, examination of the loadings for items on their respective factors within each subgroup was all above .20 (community boys - .30-.58, community girls - .25-.62, at-risk boys - .35-.54 and at-risk girls - .25-.56). Hooper, Coughlan, & Mullen (2008) argued that factor loadings greater than .02 indicate acceptable association of an item on its factor and therefore, it appeared that the same one-factor model showed acceptable fit for each subgroup.

SMFQ

Based on the factor structure identified in previous literature, we ran a CFA on the SMFQ testing a one-factor model (Model 1, shown in Figure 2³). The model showed a good fit for the whole sample with CMIN=269.32, DF=65, RMSEA=.04 (95% CI, .04-.05), TLI=.91, CFI=.93. We next evaluated model invariance across gender and age-groups for the

³ Interested readers are referred to Appendix A for the outputs of factor loadings of SMFQ found in MCFA.

two major sub-samples. The results are reported in Tables 3 and show good fit for all subsamples.

Reliability

To determine the reliability of the measures, internal consistency and test-retest reliability were evaluated. Cronbach's alphas for the SCAS-20 and SMFQ were computed for the community and at-risk subgroups as well for the total sample. Based on the CFA findings we based all following analyses on the SCAS-20 total scale, given that the hypothesised subscales were not supported. Details on individual means, SDs and Cronbach's alphas of the main scales are shown in Table 4. As can be seen, internal consistencies for both total scales were in the moderate to strong range for both sub-samples.

Pearson Product-Moment Correlation Coefficients were calculated between questionnaire scores separated by an average of 3.5 weeks within the sub-group of children who repeated the test. Results showed a significant retest relationships for both the SCAS-20, $r=.80$, and SMFQ $.72$.

Validity

Convergent validity

The relationships between scores on the CRIES-13, SCAS-20 and SMFQ were calculated across the whole sample. Scores on both the SCAS-20 and SMFQ were moderately positively correlated with scores on the CRIES-13 (SCAS-20, $r=.60$, $p<.001$; SMFQ, $r=.44$, $p<.001$). The correlation between the CRIES-13 and the SCAS-20 was significantly stronger than with the SMFQ, Hotelling's $t(111) = 2.55$, $p<.05$.

Figure 2

Single factor model of SMFQ with total sample ($N=1360$).

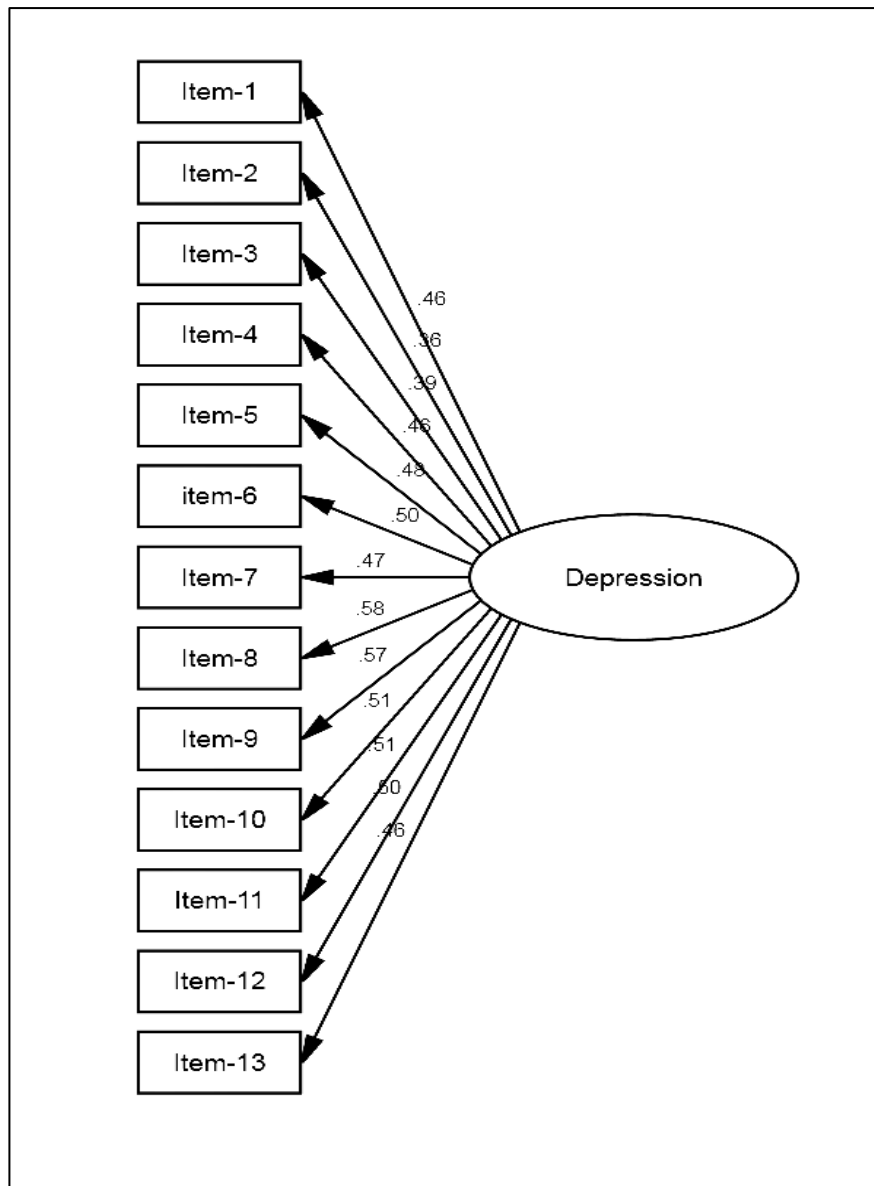


Table 3

.Multiple group analyses for model invariance for single factor SMFQ with four groups of community (N=583) and at-risk (N=777) children by gender and age-groups

	χ^2	p	RMSEA (90% CI)	$\Delta \chi^2$	Δdf	Significance difference
<i>Four groups by gender^a</i>						
Model A: Unconstrained	552.02	.001	.029 (.025-.032)	-		-
Model B: Measurement weights	576.68	.001	.026 (.023-.030)	24.67	36	.92
Model C: Structural covariances	583.22	.001	.026 (.023-.030)	31.21	39	.81
Model D: Measurement residuals	642.41	.001	.026 (.023-.029)	90.39	78	.16
<i>Four groups by age-group^b</i>						
Model A: Unconstrained	513.17	.001	.027 (.023-.030)	-		-
Model B: Measurement weights	543.43	.001	.025 (.022-.028)	30.27	36	.74
Model C: Structural covariances	553.05	.001	.025 (.022-.028)	39.89	39	.43
Model D: Measurement residuals	615.04	.001	.025 (.021-.028)	101.88	78	.04

Note: ^a = Community-boy, community-girl, at-risk-boy and at-risk girl, ^b = Community-younger, community-older, at-risk-younger and at-risk older, SMFQ=Short Mood and Feeling Questionnaire

Discriminant validity

As described in the method, two groups of children were selected representing possible PTSD and no PTSD samples. The two groups were compared on their questionnaire scores using analysis of variance (ANOVA), and the results indicated significant differences between the groups on the SCAS-20 as well as the SMFQ (see Table 5).

Descriptive and demographic differences

Mean scores on the measures were compared between girls and boys as well as across age-groups using two-way ANCOVAs⁴ controlled for group affiliation (community and at-risk). The means and *SDs* of the SCAS-20 and SMFQ by gender and three age-groups are reported in Table 6. Girls scored significantly higher than boys on the SCAS-20. There were no significant interactions between gender and age-group on any of the scales.

Discussion

Like many developing countries Bangladesh lacks not only an appropriate mental health support system for young people but also convenient tools to identify common psychiatric problems among them. To assist professionals, clinicians or researchers working closely with vulnerable groups of youth, the present study explored the psychometric properties of two potentially valuable screening instruments, the SCAS-20 and SMFQ in a sample of young people from Bangladesh. The psychometric properties of the measures were

⁴ Similar analyses were conducted to examine subgroup differences separately for the two samples, community and at-risk children. Results were very similar to those for the total sample and therefore only the total group's analyses are reported here.

Table 4

Reliability of SCAS-20 total scale and SMFQ for whole sample, community and at-risk children participants

Groups	Total sample (N=1360)		Community Children (N=583)		At-risk Children (N=777)	
Scales	<i>M (SD)</i>	Cronbach's alpha	<i>M (SD)</i>	Cronbach's alpha	<i>M (SD)</i>	Cronbach's alpha
<i>SCAS-20</i>	18.78 (9.51)	0.84	15.98 (7.93)	0.80	20.89 (10.04)	0.86
<i>SMFQ</i>	9.68 (5.42)	0.80	8.67 (5.16)	0.80	10.39 (5.48)	0.80

Note: SCAS-20= 20-item Spence Children Anxiety Scale; SMFQ=Short Mood and Feeling Questionnaire

determined and found to be broadly acceptable and consistent with those reported in other populations for the SCAS (Coysh, 2011; Muris et al., 2000; Spence, 1998) and the SMFQ (Angold, Erkanli, Silberg, Eaves, & Costello, 2002).

The factor structure of the measures provided evidence of a relatively consistent pattern for symptoms of children's anxiety and depression across cultures, although there were some interesting differences from previous research on the SCAS. For the 20-item SCAS we found that a single-factor structure loading onto the individual items provided the best fit for the data, which is not fully consistent with the expected factor structure based on the original full version of the measure (Spence, 1998). It should be pointed out that although previous research has consistently supported six distinct factors related to a single higher-order factor (Hernández-Guzmán et al., 2010; Mellon & Moutavelis, 2007; Whiteside & Brown, 2008), this research has been conducted with the full (38-item) version of the instrument. To date, there has been almost no evaluation of the factor structure of the shortened version. In fact, the current results are not very different to those from previous research. Given that the original version of the SCAS has shown that all subscales are related through a single higher-order factor, it is not necessarily surprising that a shortened version has shown a stronger single-factor solution. Similarly, the current results did indicate that a five-factor structure loading onto a single higher-order factor (Model 4) provided a reasonable fit for the sample, however a more parsimonious single-factor solution provided a slightly better fit, once two items were allowed to co-vary. At a conceptual level, these strong similarities point to the relatively consistent expression of anxiety across many varied cultures.

At least one previous study using the full scale SCAS showed very high inter-factor correlations in UK children indicating a strong single dimension underlying the measure (Essau, Sasagawa, Anastassiou-Hadjicharalambous, Guzmán, & Ollendick, 2011). Given the

Table 5

Mean scores on the SCAS-20 and SMFQ for children with possible PTSD and no PTSD

	<i>M (SD)</i> of Possible- PTSD group	<i>M (SD)</i> of No-PTSD group	<i>F</i> (1,112)	<i>p</i>
<i>SCAS-20</i>	23.00 (9.95)	14.75 (6.98)	26.20	.001
<i>SMFQ</i>	11.91 (6.09)	9.63 (5.27)	4.56	.035

Note: SCAS 20= 20-item Spence Children's Anxiety Scale; SMFQ=Short Mood and Feelings Questionnaire

lack of research to date using the short version of the SCAS, it is not clear whether the minor difference in emphasis on the underlying factor structure is due to the use of a shortened version of the measure or whether it reflects a different factor structure among Bangladeshi youth. Importantly, multiple group analyses indicated that the factor structure was broadly consistent across both boys and girls and also for both younger and older samples and for community and at-risk youth. Therefore, the measure appears to provide consistent assessment of symptoms of anxiety across various samples. Our current suggestion based on these results is that the SCAS-20 should be used to provide a single total score at this stage. Future work will be needed to determine whether the separate subscales for this brief measure are meaningful.

The demonstration of a single factor structure underlying the SMFQ is consistent with findings from other studies in developed countries (Messer et al., 1995; Sharp, Goodyer, & Croudace, 2006). The hypothesised single-factorial model for the SMFQ demonstrated a good fit for boys or girls and younger or older groups of community and at-risk young people. The consistent findings across various sub-populations and between the current results and previous research from Western countries points to broadly similar features of depression across cultures and sub-groups and supports the cross-cultural validity of classification systems such as the DSM. The SMFQ clearly appears to be useable within a Bangladeshi population.

The effects of demographic factors on the measures were consistent with typical patterns observed for anxiety (Rapee, Schniering, & Hudson, 2009) and depressive problems in children and adolescents (Hankin et al., 1998; Roza, Hofstra, van der Ende, & Verhulst, 2003; Twenge & Nolen-Hoeksema, 2002) and provide indirect support for the validity of the scales. For instance, there were obvious gender differences found on both measures. Girls,

Table 6

Means and SDs of the SCAS-20 total scale and SMFQ by gender and age-group

Scale	Gender ^a		Age groups ^b		ANCOVA Effects ^c
	Boys (<i>M, SD</i>)	Girls (<i>M, SD</i>)	Younger (<i>M,SD</i>)	Older(<i>M, SD</i>)	
<i>SCAS-20</i>	16.97, 8.91	19.38,9.54	17.84, 9.69	19.41, 8.94	Gender: $F(1, 1341)=21.59, p<.001, \eta_p^2=.02$ Age: $F(8, 1341)= 3.05, p<.01, \eta_p^2=.02$ Gender \times Age: $F(8, 1341)=1.19, p=.29, \eta_p^2=.01$
<i>SMFQ</i>	8.92,5.06	10.04,5.55	9.21, 5.18	10.20, 5.65	Gender: $F(1, 1341)= 13.73, p<.001, \eta_p^2=.01$ Age: $F(8, 1341)=3.54, p<.001, \eta_p^2=.02$ Gender \times Age: $F(8, 1341)=1.74, p=.09, \eta_p^2=.01$

Note: a= Number of total boys is 459 and total girls is 895, b= Analysis done controlling for type of organizations, SCAS 20= 20-item

Spence Children Anxiety Scale; SMFQ=Short Mood and Feeling Questionnaire.

and especially older girls, scored higher on both anxiety and depression symptoms, which is consistent, not only with the typical patterns of internalising seen across the world, but more specifically with research showing higher rates of several mental health problems among girls in Bangladesh (Islam, Khan, Ahsan, & Saifuddin, 2010). Similarly the higher scores on the SCAS-20 total and SMFQ among older children were consistent with the broader literature (Hankin, Mermelstein, & Roesch, 2007; Roza et al., 2003).

The study utilised a convenience sampling procedure and therefore may not reflect the true population of Bangladesh. Future replications using population-relevant stratification would be useful. Assessment of validity was also limited. Well conducted clinical diagnoses were not able to be made with this very large sample, and this limited the assessment of discriminant validity. The lack of additional measures meant that convergent and divergent validity need to be more extensively assessed in future studies. However, the fact that a large proportion of the sample came from highly vulnerable, rural, and low educational groups, was a strength of the study, increasing the utility of results to the specific population of vulnerable children from Bangladesh who are most likely to use the measures.

Overall, it seems that the two measures evaluated in this study to assess internalising problems are able to tap the possible existence of these problems among young people in Bangladesh. The psychometric properties indicate that the measures are good enough to be used with children from all backgrounds in Bangladesh. Further work may be needed on the factor structure of the SCAS-20 and the possibility that subscales can be assessed reliably, although on current results, it appears that a single, total score may be the best solution. The brevity and ease of administration of the SCAS-20 and SMFQ make them valuable instruments to assess common internalising

problems among young populations in Bangladesh or any Bangla speaking community, and results are likely to reflect translations to other developing countries. The results reported here will allow health professionals in Bangladesh to use these measures to plan and execute available interventions as early as possible.

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CHAPTER 4

Prevalence of traumatic events and risk for psychological symptoms among community and at-risk children and adolescents from Bangladesh

Farah Deeba and Ronald M. Rapee*

Centre for Emotional Health, Department of Psychology, Faculty of Human Sciences,
Macquarie University, NSW 2109, Australia

*Requests for reprints should be addressed to Ronald M. Rapee, Centre for Emotional
Health, Department of Psychology, Macquarie University, NSW 2109, Australia,
(Email: ron.rapee@mq.edu.au)

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Abstract

Epidemiologic literature indicates that children from developing countries are more vulnerable to experiencing traumatic events and more likely to suffer a range of psychological problems than children from developed countries. Due to a lack of reliable information about the nature of traumatic events and levels of distress in children from developing countries, it is difficult to plan for and provide necessary mental health services. The current paper describes a survey of 1360 children and adolescents from Bangladesh who were recruited either from the general community or through a range of social service organisations. Children completed a checklist of traumatic events and questionnaires to assess symptoms of PTSD, anxiety and depression. Children from both samples reported high levels of exposure to traumatic events, both via direct experience and indirectly. Direct experience with intentional, man-made events was more frequently reported by children from support services while trauma from natural disasters was more common among community children. Psychological symptoms were significantly higher within children from social support services. The strongest predictors of psychological symptoms were age, gender, sample source, and exposure to man-made direct traumas. The results support the common occurrence of traumatic events among children and adolescents from Bangladesh, pointing to the need to reduce the incidence of extreme events and also to develop effective and accessible mental health services for Bangladeshi children and adolescents.

Key words: Children, developing countries, traumatic events, PTSD, anxiety, depression, Bangladesh.

Experiencing traumatic events directly or indirectly can contribute to a wide variety of psychological distress in children (Burke, Borus, Burns, Millstein, & Beasley, 1982; Lee & Hoaken, 2007; Putnam, 2003; Puttre, 2011; Pynoos, Frederick, Nader, & et al., 1987; Saigh, 1991). Fortunately most children recover prior to the development of clinical levels of distress, but a significant number develop several forms of psychopathology including post-traumatic stress disorder (PTSD), anxiety and depression (Kilpatrick et al., 2003; Stein & Kendall, 2004; Yule, 1997). Symptoms of these post-traumatic stress reactions (PTSR) follow a range of traumatic experiences, including natural disasters (Bulut & Yule, 2000; Greca et al., 2013; Li et al., 2010; Pynoos et al., 1993), terminal illness (Butler, Rizzi, & Handwerger, 1996), accidents (B. Bryant, Mayou, Wiggs, Ehlers, & Stores, 2004; Yule et al., 2000), interpersonal conflict (Arseneault, Bowes, & Shakoor, 2010; Kitzmann, Gaylord, Holt, & Kenny, 2003; Olaya, Ezpeleta, de la Osa, Granero, & Doménech, 2010; Pynoos et al., 1987), and physical or sexual abuse (Wolfe, Gentile, & Wolfe, 1989). Within developed countries, between 14-43% of children will experience a traumatic event over a 12-month period (Costello, Erkanli, Fairbank, & Angold, 2002), although less than 1% will develop clinical levels of PTSD and around 2% will develop PTSR (Nader, Pynoos, Fairbanks, & Frederick, 1990). In addition to clinical symptoms, traumatized children can develop a number of serious long-term consequences involving physical, psychological, familial and social health problems that take a heavy toll on caregivers and other family members (Bender, 2009; Bolton et al., 2004; Briere & Elliott, 2003; Felitti et al., 1998; Kessler et al., 2010; Kilpatrick et al., 2003; Lanius, Vermetten, & Pain, 2010; McDermott & Cobham, 2012; McEwen, 2003; Morgan, Scourfield, Williams, Jasper, & Lewis, 2003; Norman et al., 2012; Yule et al., 2000; T. Zhang & Chow, 2011).

Research has demonstrated a number of social and demographic factors that influence the likelihood that children will be exposed to one or more traumatic experiences. Several child-centred factors, such as age, gender, pre-trauma emotional and cognitive conditions, as well as trauma-related factors, such as type of trauma, frequency of exposure, intensity, proximity, and whether the trauma is directed to self or others, influence the later development and severity of PTSD (Ackerman, Newton, McPherson, Jones, & Dykman, 1998; Alisic, van der Schoot, van Ginkel, & Kleber, 2008; Aziz, Gunay, Mustafa, & Meliksah, 2009; Bradburn, 1991; Bryant, 2003; Cohen & Mannarino, 1998; Ehlers, Mayou, & Bryant, 2003; Fletcher, 1996; Groome & Soureti, 2004). The presence of additional social factors such as poverty, living in slum or crowded areas, experiencing parental neglect, family discord, or having a single parent who is working, also heighten children's vulnerability to experience multiple traumas (Grantham-McGregor et al., 2007; Green et al., 2010). Subsequently, children who are exposed to multiple traumatic events are at greater risk for PTSD (Jarvis, Gordon, & Novaco, 2005; Mueser & Taub, 2008; Suliman et al., 2009).

To date, the majority of information about traumatized children has come from developed countries and relatively little is known about non-war traumas in developing countries. Developing countries are especially likely to demonstrate socio-economic conditions that increase risk for child trauma experiences, including poverty, overcrowding, lack of social safety and security, and poor and under developed mental health services (Benjet, 2010; Walker et al., 2007). Around 40% of children from developing countries have been estimated to suffer deprivations in basic human rights that mostly include lack of food, shelter, and education (Gordon, Nandy, Pantazis, Pemberton, & Townsend, 2003). Therefore, it is highly likely that the prevalence of

emotional distress in children will be higher in less developed countries than in developed countries (Kessler et al., 2010; Patel, 2007; Patel, Flisher, Hetrick, & McGorry, 2007; Patel & Kleinman, 2003). However, studies that have investigated PTSD among younger populations in developing countries have typically done so following certain specific traumas, such as war (de Jong, Komproe, Van Ommeren & et al., 2001; Sack, Him, & Dickason, 1999; Smith, Perrin, Yule, & Rabe-Hesketh, 2001; Thabet, Abed, & Vostanis, 2004) hurricanes (Felix et al., 2011), earthquake (Eksi & Braun, 2009; Pynoos et al., 1993), or tsunami (Baddam John, Russell, & Russell, 2007; Bhushan & Sathya Kumar, 2007; Neuner, Schauer, Catani, Ruf, & Elbert, 2006; Thienkrua et al., 2006). Few studies have surveyed exposure to traumas and related symptomatology among young people from the general populations of developing countries and especially ones that are not under or affected by any recent war.

Reports from the United Nations and its extended organizations urge governments to give greater priority to improving children's quality of life by taking care of their mental health through practicing the conventions of children's rights and developing proper mental health services. But very few governments or policy makers from developing countries have taken notice of this suggestion (Remschmidt & Belfer, 2005). Establishing child mental health services in any community is a great challenge (Patel, 2007), especially when children and adolescents come from poor communities (Yoshikawa, Aber, & Beardslee, 2012). Information on the extent of trauma exposure and subsequent mental health conditions both among community children and those in particular need is required to establish child-sensitive support services and policies (Costello, Burns, Angold, & Leaf, 1993). Therefore, increasing knowledge about traumatic experiences and the experience of emotional distress among children from

such countries is clearly a priority. The present study describes an attempt to determine epidemiologic information about exposure to traumatic events and levels of psychological symptoms among children and adolescents from a non-war-affected developing country.

The research focussed on children and adolescents from Bangladesh, a country that is affected by high numbers of traumatic incidents, including natural disasters (Biswas, Rahman, Mashreky, Rahman, & Dalal, 2010), accidents and injuries (Aminur Rahman, 2005), or intentional harmful events, such as, physical violence (UNICEF, 2009), sexual abuse (Al-Azad et al., 2012), human trafficking (Hoque, 2010; Shamim, 2001) or acid violence (Zafreen, Wahab, Islam, & Rahman, 2010). The prevalence of specific traumatic events have been assessed in a few large (e.g. Aminur Rahman, 2005) or small-scale studies (e.g. (Anjuman & Siddiqui, 2007) and mostly reports from international aid organizations' programs (e.g. ILO Country Office Bangladesh, UNICEF Bangladesh, & Human Development World Bank, 2011). The country is one of the most densely populated developing countries in the world; with a population of 155 million people living within an area of less than 150,000 square km. More than thirty percent of the population survive on less than \$US2 per day. Of the total population, over 40% are under the age of 18 (Government of People's Republic of Bangladesh, 2012) and a significant proportion of these children are found among the poorer sectors of the society (Barkat, 2009). Most of these poor children are highly vulnerable to traumatic experiences due to a lack of adult protection and numerous violations of children's rights (BIDS, 2005). They also have limited or no access to appropriate physical or psychological health care (S. M. Ahmed, Tomson, Petzold, & Kabir, 2005; Amin, Chowdhury, Kamal, & Chowdhury, 1989).

Considering the need for childhood care, Bangladesh signed the United Nations (UN) millennium goals charter and initiated several projects and programmes through government, or non-government (both local and international) organizations in the country (Barkat, 2009). There are many residential (shelter-homes) and non-residential (community based informal health and education system) support services for children and adolescents who are disconnected or destitute from families or living in at-risk situations were established. Although few studies with young children from shelter homes have been conducted, most have shown them to have significantly higher levels of problem behaviours than the general population (Parveen & Begum, 2002; W. Rahman et al., 2012). Unfortunately, no appropriate mental health service for traumatized cases has been established in the country, let alone for child victims (Pathan & d'Ardenne, 2010).

The current study included evaluation of a large sample of children and adolescents recruited through either shelter homes or from general schools in Bangladesh, to examine self-reported exposure (both direct and indirect experiences) to a variety of traumatic events along with demographic factors, and a range of psychological symptoms of emotional distress including PTSD, anxiety and depression. Prevalence of these experiences as well as relationships with child-centred (age, gender, education and work status, and religion) and some trauma-centred (type and nature of trauma exposure) factors were evaluated.

Methods

Participants

A total of 1383 children and adolescents were recruited from six different divisions of Bangladesh (Dhaka, Chittagong, Shitakunda, Gazipur, Habiganj and Rajshahi). Those who completed less than 25% of items on the psychometric measures utilized in the study, were excluded from analysis ($N = 19, 1.4\%$). Thus a total of 1360 children and adolescents (Boys=472, 40.12%; $M = 12.31$ years; $SD = 2.13$) were included in the study. Participants were recruited from two broad subsamples; 1) a community sample and 2) an at-risk sample. There were 583 community children and 777 at-risk children. The community sample comprised children recruited from primary, secondary and high schools while the at-risk sample comprised children recruited through a variety of social support services including “shelter homes”. Convenience sampling was used to recruit participants through the use of letters and word of mouth to professionals and care workers. Community children were obtained by sending invitations to government and non-government organization supported schools in urban (slum and non-slum) and rural areas of five districts. This led to engagement of four schools in Dhaka city and an additional six schools from rural areas. Among the four schools from Dhaka city, three schools were from middle to upper socio-economic areas while the remaining school was from a lower economic and slum area.

An at-risk sample was also obtained by inviting various government and non-government supported organisations that ran support services, such as food, finance, education and shelters for disadvantaged youth to participate. The at-risk children came predominantly from lower class or slum areas, and they were selected for participation by staff within the institutions who were given prior information about inclusion and

exclusion criteria by the investigators. At-risk children were included in the study if they were capable of following simple age-appropriate instructions to respond to the questions. They were excluded if they had a diagnosed psychotic, developmental or intellectual disability or attention deficit hyperactivity disorder or had serious problems settling in class and following instructions. Thus, approximately 90% of the at-risk children and adolescents participated in the study. School children's selection was initially made by teachers, and then forms were distributed to the selected children to obtain parents' consent. 75% of the children who received forms finally returned signed consent forms to participate in assessment sessions. The sample was collected from December 2010 to September 2011.

Measures

Demographic data

Socio-demographic data were collected by a brief bio-data form completed by children that included age, gender, religion, educational level, and work status.

Traumatic Events checklist

Based on the available literature on traumatic events among children and adolescents in Bangladesh, (e.g. Report on children's injuries by Rahman, et al., 2005, World Health Organization and UNICEF, 2005; Save the children Sweden, 2006), a self-report checklist was formulated for the current study. The list included 29 specific events based on several broad areas including natural disasters, accidents (unintentional events) and abusive acts (intentional events, mentioned as man-made trauma in this paper) and also included five open-ended responses. One item ("eve teasing", referring to a form of sexual harassment of a girl in a public place by bullying or teasing) was

gender specific. The checklist was sent to 35 mental health professionals who were asked to place each trauma into one of three broad categories: natural disaster, accidents or man-made disaster. All items had greater than 80% agreement. Six items were categorised as natural disasters (flood, cyclone, tornado, avalanche, arsenic exposure, terminal diseases), 8 items were categorised as accidents (hit by a road transport vehicle, boat or launch accidents, train/plane accidents, building collapse, fire, fall from height, drowning, explosions) and 15 items were categorised as man-made events (physical attack without using any object, armed hits, attempted killing, attempted drowning, acid attack, bombing, verbal abuse, bullying, threat to hurt, being stalked, eve teased, penetrative sexual abuse (rape), been touched for sexual purpose (non-penetrative), trafficked and mugged (robbed). Children reported whether they had been distressed by the occurrence of any of these events, either directly occurring to them or whether they witnessed the event occurring to and distressing others (excluding events witnessed through television or other news media).

Children's Revised Impact of Event Scale-13 (CRIES-13)

The CRIES-13 (Children and War Foundation, 1998) was used to assess symptoms of PTSD. The CRIES-13 is a well-known screening tool that has been used across a number of countries to identify PTSD in young populations. It was derived from the original 33-item Impact of Events Scale (IES; Horowitz, Wilner, & Alvarez, 1979) to identify DSM-IV described PTSD symptoms in children 7 years and over (Dyregrov & Yule, 1995) and eventually adapted with revised wording for children (Perrin, Meiser-Stedman, & Smith, 2005; Smith, Perrin, Dyregrov, & Yule, 2003). The CRIES-13 is comprised of three separate but highly inter-correlated factors relevant to the DSM-IV criteria for PTSD (Giannopoulou et al., 2006; N. Zhang, Zhang, Wu, Zhu,

& Dyregrov, 2011) and also shows satisfactory convergent validity. Items are scored on a non-linear scale as follows: 0 (not at all), 1 (rarely), 3 (sometimes) and 5 (often). Scores range from 0-65 and higher scores indicate greater PTSD symptoms Cronbach's alpha for the total scale is high (.80) and is acceptable for the subscales of intrusion (.70), avoidance (.73) and arousal (.60) (Smith et al., 2003). The psychometric properties of the CRIES-13 among Bangladeshi children and adolescents has shown good internal consistency and construct validity for the total scale (Cronbach's alpha .74) and each sub-scale (Cronbach's alpha = .50 to .62) (Deeba, Rapee, & Prvan, 2014a).

Spence Children's Anxiety Scale - 20 (SCAS-20; S. H. Spence, personal communication, July 26, 2010)

The SCAS-20 is a simple, brief self-report questionnaire to assess symptoms of anxiety following DSM-IV criteria. It is a short form of the more commonly used 38-item SCAS (Spence, 1997). Items are rated on a 4-point Likert-type scale as 0 (never), 1 (sometimes), 2 (often) and 3 (always) and summed to obtain a total score where higher scores indicate higher levels of anxiety. Items for the short version SCAS-20 were selected on the basis of factor analyses of the full version (Spence, 1998; Muris, 2000; Spence, Barrett & Turner, 2003; Murris, 2003). Although the psychometric properties of the short version have not yet been published, an unpublished evaluation of the SCAS-20 demonstrated strong overall reliability of .89 (Coysh, 2011). We also evaluated the psychometric properties of the SCAS-20 among an overlapping group of Bangladeshi children and adolescents and showed good internal consistency (Cronbach's alpha .84) and construct validity for the total scale (Deeba, Rapee, & Prvan, 2014b).

The Short Mood and Feelings Questionnaire (SMFQ; Angold et al., 1995)

The SMFQ was developed to identify DSM-IV based signs and symptoms of depressive disorders in children and adolescents aged 6-17 years. The scale is scored on a 3- point Likert-type response scale 0 (never), 1 (sometimes true) and 2 (always true). The total score is the sum of all items providing possible scores ranging from 0 to 26 and higher scores reflecting lower mood and risk of clinical depression. The SMFQ has been shown to comprise a single factor and has good criterion-related validity and discriminant validity to identify clinical levels of depression in children and adolescents (Angold et al., 1995; Thapar & McGuffin, 1998; Rhew, Simpson, et al., 2010). Angold et al., (1995) found Cronbach's alpha for the SMFQ of .87 and a cut-off score of 12, showed good sensitivity and specificity to identify cases. In another study (Deeba et al., 2014b) Cronbach's alpha was found .80 for the SMFQ within a Bangladeshi sample.

Translation of measures

Standard guidelines (e.g. Brislin, 1986) for the translation of instruments for research purposes were used. The bilingual investigator translated the English version of the measures to Bangla. Then another bilingual professional psychologist not familiar with the measures translated them back from Bangla to English. Back translation was checked by the second author of the study, who is a native English speaker. Differences between the two versions were resolved by joint agreement between both translators.

Procedure

Ethical permission was provided by the Macquarie University Human Research Ethics Committee (Ref no. 5201001017 dated 5/11/2010, Appendix C). Written permission was sought from every relevant institution and organization. Organizations

that had multiple service centres in several districts of the country were approached. Written consent to participate in the research voluntarily was provided for each child either from their parent or professional caregivers if no parent was available and verbal assent to participate was sought from children directly. Parents or care-givers and participants who were unable to read or write had the information on the consent form read to them. If necessary, thumb prints were used in lieu of signatures. Children were assessed in groups of 20 to 30 in schools where children were able to read and complete the questionnaires by themselves. A maximum of 10 cases was allowed in a group where the children and adolescents were completely or partially illiterate or at age 11 and below and for these children questionnaires were read aloud and explained with visual aids (e.g. white-boards or black-boards). An assistant (clinical psychology graduate) was trained in administering the measures and assisted the first author in conducting the sessions.

Data Analysis

All statistical analyses were performed using SPSS version 21.0. All data were checked and edited before being analysed. Assumptions of normality were visually checked through frequency histogram and normal Q-Q plots for continuous measures. Descriptive statistics were expressed as estimated marginal means and standard errors for continuous measures, whereas percentages were reported for categorical variables. To explore differences between the two main samples, chi-square tests for categorical variables (and Relative Risks, RR) and Analyses of Variance (ANOVA) for numerical variables were used. Wilk's Lambda was reported for multivariate factorial analysis. Post-hoc group comparisons were calculated for ANOVA tests. All tests were two-tailed and *p*-values less than .05 were considered statistically significant. Finally a

separate multiple logistic regression was conducted to explore the risk for a combined standardized outcome variable of emotional distress comprised of three measures: CRIES-13, SCAS-20, and SMFQ, by age, gender, type of trauma exposure (natural, accidental and man-made), direct trauma (to self) and indirect trauma (to others).

Results

Differences between community and at-risk samples

Demographic Variables

Demographic characteristics for the two samples are reported in Table 1. As can be seen, the samples differed on most demographic variables aside from age.

Prevalence of traumatic events and pattern of psychological symptoms

Differences in trauma exposure

The groups were compared on their exposure to traumatic events. Overall, a very large proportion of children had been exposed to at least one trauma of any kind (direct and/or indirect) and the two groups did not differ substantially, (564, 96.74% for community and 753, 96.91% for at-risk group) $\chi^2 (1, N = 1360) = .03, p = .88$. However, there was a significant difference between the samples in the number of events experienced (both direct and indirect experiences combined), $\chi^2 (4, N = 1360) = 29.02, p < .05$. A single event was reported by 24 (4.12%) of the community children and 39 (5.02%) of the at-risk children; 2-3 traumas were experienced by 109 (18.70%) community children and 133 (17.12%) at-risk children; 4-6 traumas were experienced by 226 (38.77%) community children and 206 (26.51%) at-risk children; and finally

seven or more traumas were reported by 220 (37.74%) community children and 393, (50.58%) at-risk children.

Table 1

Demographic characteristics of community and at-risk children

Variable	Community (N= 583)	At-risk (N=777)	Statistics
Age (<i>M, SD</i>)	12.35, 1.91	12.27, 2.26	$t(1338.17) = .73, p = .47$
Sex (<i>N, % of group total</i>)			$\chi^2(1, N = 1360) = 13.28, p < .001$
Boys	234, 40.14%	238, 30.63%	
Girls	349, 59.86%	539, 69.37%	
Education and work status (<i>N, % of group total</i>)			$\chi^2(3, N = 1360) = 292.95, p < .001$
Education only	567, 97.26%	435, 55.98%	
Work and education	14, 2.40%	240, 30.89%	
Work only	1, 0.17%	57, 7.34%	
Others (never been in school, discontinuation of education, not in work, etc.)	1, 0.17%	45, 5.79%	
Religion (<i>N, % of group total</i>)			$\chi^2(2, N = 1360) = 48.58, p < .001$
Muslim	490, 84.05%	733, 94.34%	
Hindu	91, 15.61%	37, 4.76%	
Others (Christian & Buddhist)	2, 0.34%	7, 0.90%	

A very large number of specific traumas were reported by both groups of children. To reduce inflation of the type 1 error, these were not analysed individually. However, to provide detailed information, the results are shown in Appendix B. To simplify the main analyses, specific traumatic events were combined into the three broader types of trauma described in the method. Exposure to the broad trauma categories (natural, accidental and man-made) were compared between the two groups separately for direct and indirect experience with the trauma using chi-square (see Table 2). Estimated relative risks (RRs) are reported which indicate the risk of a trauma occurring to an at-risk child relative to a community child. As can be seen, community children reported more natural traumas while at-risk children reported more direct exposure to accident and man-made traumas.

Collapsing across types of trauma, a similar proportion of children from the community sample reported direct exposure to one or more traumatic events (511, 87.65%) as at-risk children (700, 90.09%), $\chi^2 (1, N = 1360) = 2.03, p = .16, RR = 1.15, 95\% CI = .96-1.37$. In contrast, a greater proportion of community children reported indirect exposure to one or more traumas (488, 83.70%) than at-risk children (602, 77.48%), $\chi^2 (1, N = 1360) = 8.12, p < .01, RR = 0.79, 95\% CI = 0.66-0.94$.

Differences in post-traumatic stress reactions

The two groups were compared on their levels of the three main emotional reactions, PTSD, anxiety and depression (see Table 2), using separate, one-way ANCOVAs. Covariates included in the model were the types of trauma (natural, accidental, man-made) by nature of exposure (direct, indirect) together with the demographic variables that differed significantly between samples (gender, education,

Table 2

Differences in direct and indirect trauma experiences between community and at-risk children

<i>Types of trauma by type of exposure</i>	Community (N=583) (N, %)	At-risk (N= 777) (N, %)	Statistics	Relative risks (95% CI)
<i>Natural</i>	460, 78.91%	535, 68.90%	χ^2 (1, N=1360) =17.13, p <.001	.87 ¹ (.82-.93)
Direct	368, 63.12%	444, 57.14%	χ^2 (1, N=1360) =.03, p <.05	.91 (.83-.99)
Indirect	421, 72.24%	480, 61.79%	χ^2 (1, N=1360) =16.23, p <.001	.86 (.79-.92)
<i>Accidental</i>	512, 87.82%	663, 85.33%	χ^2 (1, N=1360) =1.76, p =.18	.97 (.93-1.01)
Direct	271, 46.48%	404, 52.01%	χ^2 (1, N=1360) =4.05, p <.05	1.15 (1.00-1.25)
Indirect	448, 76.84%	579, 74.52%	χ^2 (1, N=1360) =.97, p =.33	.97 (.91-1.03)
<i>Man-made</i>	523, 89.71%	690, 88.80%	χ^2 (1, N=1360) =.28, p=.60	1.00 (.95-1.30)
Direct	349, 59.86%	551, 70.91%	χ^2 (1, N=1360) =18.17, p<.001	1.19 (1.09-1.28)
Indirect	442, 75.81%	582, 74.90%	χ^2 (1, N=1360) =.15, p =.70	.99 (.93-1.05)

Note: ¹ Relative risk - community sample is the referent group

religion). The two groups differed significantly on their scores on the CRIES-13, $F(6, 1353) = 24.29, p < .001, \eta_p^2 = .03$, with children in the community group scoring lower than at-risk children. Similarly, on both the measures of anxiety, $F(6, 1353) = 25.40, p < .001, \eta_p^2 = .02$, and depression, $F(6, 1353) = 4.89, p < .05, \eta_p^2 = .01$, children in the community group scored lower than the at-risk children.

Table 3

Means and SDs of three measures of PTSD, anxiety and depression obtained by two groups of children

	Community	At-risk
	Mean (<i>SD</i>)	Mean (<i>SD</i>)
PTSD	20.61 (10.13)	24.97 (11.22)
Anxiety	16.03 (7.86)	20.41 (10.00)
Depression	8.63 (5.19)	10.41 (5.46)

Predictors of emotional distress

Finally we examined predictors of children's emotional distress. In order to create a single estimate of distress, we standardized scores on the CRIES-13, SCAS-20 and SMFQ and summed the standard scores into a single dependent variable (Means and SDs of three measures of PTSD, anxiety and depression obtained by two groups of children are given in Table 3). We then conducted stepwise multiple regression to predict distress as the dependent variable. Type of trauma exposure (natural, accidental,

man-made) by nature of exposure (direct, indirect), as well as children's age and gender and children's sample (community and at-risk) were entered as predictors along with educational status and religion. The correlations of the variables are shown in Table 4.

Our model was statistically significant, $F(6, 1344)=46.28$ $p<.001$. Overall, the predictors accounted for 14% of the variance in distress ($R^2=.147$, Adjusted $R^2=.144$). Children's age, gender of the child, group affiliation, and experiencing direct, man-made trauma were all significant predictors. The raw and standardized regression coefficients of the predictors are given in the Table 5. Religion, $B=.17$, $t(1344)=.66$, $p=.51$, natural-direct, $B= -.03$, $t(1344)= -1.15$, $p=.25$, natural-indirect, $B= -.04$, $t(1344)= -1.43$, $p=.15$, accident-direct, $B=.03$, $t(1344)=1.01$, $p=.31$, accident-indirect, $B=.44$, $t(1344)=1.78$, $p=.08$, and man-made-indirect, $B= -.01$, $t(1344)= -.07$, $p=.94$, were excluded from the model.

Table 4.

Correlations of the variables in step-wise regression analysis (N=1350)

Variables	2	3	4	5	6	7	8	9	10	11	12
Total distress	.16***	.14***	.25***	-.01	.26***	-.03	.06*	.05*	.03	.17***	.03
Age	-	.07	.02	.12***	-.02	-.06**	-.04	-.01	-.01	.12***	.20***
Gender		-	-.04*	-.01	.10***	-.10***	-.08***	-.10***	-.06**	-.06**	-.04
Education-work status			-	-.05*	.44***	.12***	.06***	.06***	.05*	.13***	.02
Religion				-	-.14***	-.02	.02	-.04	.01	-.05*	-.02
Group affiliation (at-risk/ community)					-	-.06*	-.11***	.06*	-.03	.12***	-.02
Natural-direct						-	.55***	.20***	.23***	.09***	.10***
Natural indirect							-	.15***	.33***	.01	.17***
Accident-direct								-	.09***	.15***	-.01
Accident-indirect									-	-.10***	.25***
Man-made direct										-	.16***
Man-made indirect											-

Note: *= $p>.05$, **= $p>.01$, ***= $p>.001$

Table 5

Step-wise regression results for the significant predictors

Variables	<i>B</i>	<i>se</i>	<i>B</i>	95% Confidence interval	<i>T</i>	Significance level
Age	.16	.03	.15	.10-.21	5.72	.001
Gender	.66	.12	.14	.42-.90	5.38	.001
Education-work status	.42	.07	.17	.28-.56	5.91	.001
Group affiliation (at-risk/community)	.76	.13	.16	.50-1.02	5.77	.001
Manmade-direct trauma	.56	.12	.12	.32-.81	4.51	.001

Discussion

Traumatic events in the lives of children and adolescents from developing countries are very common (Kessler, 2000; Walker et al., 2007). However, most current data come from countries affected by war and there is considerably less knowledge of the prevalence of traumatic events and experience of common post-traumatic stress reactions and related psychological phenomena among children from non-war affected countries in the developing world. There is also little quantitative knowledge about trauma and psychological symptoms in children who reside in social support services, a relatively large group in developing countries. Following these gaps, the current study explored the occurrence of traumatic events and the experience of psychological symptoms within a large sample of children and adolescents from Bangladesh who were selected from both social support services and the general community.

The two groups of children differed significantly on several demographic factors. Children from support services were more likely to be female, working and Muslim. In many ways these differences are not surprising. There are various pathways that lead children into the care of a social support service. Young people who are affiliated with a support services, such as shelter homes, commonly come from very disadvantaged backgrounds with high levels of poverty (UNICEF, 2010b). Of the total poor children of the country 41% live without shelter (Barkat, 2009). A consequence of many traumatic events such as accidents and gender-based violence is that children become orphaned and abandoned by their families (UNICEF, 2009a), leading many into the care of support organisations. Many other children from poor families who still live with their family have to leave school and work to help the family with food and shelter (ILO Country Office Bangladesh et al., 2011). So it is not surprising that almost of half of the children

from our sample of support services were involved in work. Many of these children, especially females, would have been exposed to various forms of abuse from their employers and eventually excluded and made homeless. Finally the slightly lower number of Muslim children in the community sample may simply reflect a sampling error due to the small numbers involved. Alternately, it may reflect the slightly higher socio-economic status of people with religions other than Islam in Bangladesh.

As expected, the sample overall reported exposure to a large number of traumatic events. Sadly, these figures were high even when considering only directly experienced traumas. Across the sample, almost 85% of the children had directly experienced at least one traumatic event. These data are similar to the results from some other developing countries, e.g. 80-100% of children from various parts of South Africa reporting exposure to traumas (Kaminer, du Plessis, Hardy, & Benjamin, 2013; Kleintjes, Lund, Flisher, & Consortium, 2010) and points to the markedly greater traumatic risk that these children have relative to young people from developed countries (e.g. 40% (Copeland, Keeler, Angold, & Costello, 2007)). A high risk for trauma exposure was shown among all children, even those from the general community. What was perhaps surprising is that children from social support services did not report markedly higher exposure to trauma overall. Interestingly however, differences were found in the pattern of trauma exposure between children in the two samples. Children from social support services were less likely to directly experience natural traumatic events, but were somewhat more likely to directly experience accidents, and were considerably more likely to experience traumas due to human activity. The higher reports of man-made traumas among children from service organisations is consistent with the fact that they are more likely to come from disadvantaged backgrounds and are more likely to be female and working. In a

patriarchal country like Bangladesh gender-based discrimination is high towards females and female children are commonly victims of traumatic events (Chowdhury, 2003). Females are also more likely to obtain work that is away from public scrutiny (such as domestic help) and are therefore especially vulnerable to intentional, man-made types of abuse (UNICEF, 2009a). Poverty and child work can also increase the likelihood of trauma since such children are highly vulnerable to accidents in the workplace and both physical and sexual abuse (ILO Country Office Bangladesh, UNICEF Bangladesh, & Human Development World Bank, 2011; UNICEF, 2009b). These suggestions are consistent with the findings in this study that being female and living in a support service were strong predictors of psychological distress. Although the current results are not able to demonstrate that psychological distress in this sample is a result of the traumatic events they experienced, these associations are certainly consistent with this notion.

The fact that children from the general community reported higher levels of exposure to natural traumas compared with children from support services is to somewhat more surprising. Reasons for this difference are not clear but one possibility is that the results simply reflect a reporting bias. Since children living in social support services live in areas of the country that are more vulnerable to natural disasters (Kilpatrick et al., 2003), these natural events may appear more normal to these children and may elicit fewer traumatic reactions (Dood, Munck, & Organization, 2001; Zaman, 1999). From the reverse, given their relatively less disadvantaged lives, children in the community sample may have placed greater emphasis on these natural disasters.

Children in the two samples did not differ on overall exposure to accidental and man-made traumas (direct and indirect experience combined). Road traffic accidents and other accidental injuries with children are common in many communities especially in

developing countries (Odero, Garner, & Zwi, 1997; Zwi, Forjuoh, Murugusampillay, Odero, & Watts, 1996) not only in Bangladesh (Rahman, 2005). However, children from the at-risk sample reported a significantly higher frequency of direct exposure to the accidental and man-made traumas than the community children. Children from poor families usually live in more vulnerable and risky environments that expose them to various accidents or violence (BIDS, 2005). Further, engagement in low-level work and being female, particularly increase risk for both accidents and abuse (UNICEF, 2010a, 2012). Overall, it seems that children from all social and economic levels within Bangladesh are vulnerable to multiple traumatic events, a finding that is consistent with previous reports written following several specific events accidents, injuries, and sexual abuse (M. K. Ahmed, Rahman, & van Ginneken, 1999; Al-Azad et al., 2012; Anjuman & Siddiqui, 2007; Hadi, 2000; Hoque, 2010; Mashreky et al., 2008) as well as from other developing countries (Caffo, Forresi, & Lievers, 2005; Seedat, Nyamai, Njenga, Vythilingum, & Stein, 2004; Wolchik, Tein, Sandler, & Ayers, 2006).

Finally the results identified several factors that were related to the experience of distress among traumatized children. Being older, female, affiliation to a support service, level of education and work, and experiencing direct exposure to man-made traumatic events independently and significantly predicted higher levels of psychological symptoms in children. Age, gender and lower level of cognitive development of a child have been identified as strong predictors of development of psychological symptoms in various studies (Trickey, Siddaway, Meiser-Stedman, Serpell, & Field, 2012). These predictors have also been reported in other studies conducted with females in Bangladesh (Chowdhury, 2003; Gwatkin, Rustein, Johnson, Pande, & Wagstaff, 2000; Islam, Khan, Ahsan, & Saifuddin, 2010) as well as in other developing and developed countries

(Tsutsumi, Izutsu, Poudyal, Kato, & Marui, 2008; UNICEF, 2009b). Several studies have also reported a stronger relationship between man-made traumatic events and subsequent psychological distress than with other types of trauma (Bruskas, 2008; Giovanni de Girolamo & Psychother, 1996). In turn, these predictors underscore the higher levels of emotional distress reported by children from social support services. This in no way implies that Bangladeshi children from the general community do not experience high levels of distress, but the correlates of being a child in a support centre, including being female, poor, in work, and being especially vulnerable to man-made traumas, makes these children at particular risk for mental health problems.

Limitations of the study

There were several limitations to the current study. First, it was not possible to collect a completely random sample that was stratified to reflect the general population. Therefore, the results cannot be interpreted to represent population norms or prevalence, but rather should be interpreted as an indication of trauma levels in two sub-samples. Further the data were collected by self-report and without independent confirmation. Hence it is possible that children may have over or under-rated some events. Similarly, the broad descriptions of various events mean that it is not possible to determine for certain whether all reports met full criteria for a trauma. For instance, when reporting about being hit, one child might have referred to a brutal beating, while another might have been referring to a slap from a parent. Other reporting biases may have followed from the use of self-report including memory limitations, interpretation biases, and stigma. Additional issues that may also be relevant to the development of mental health services in Bangladesh but could not be assessed in this study include comorbid

problems, suicidal thoughts or attempts, cognitive or memory deficits, or coping strategies. These factors could be addressed in future studies.

The results of this survey clearly indicated that children of Bangladesh are exposed to wide variety and high levels of traumatic events along with high levels of emotional symptoms. When children suffer from such internal turmoil for a long time, there is high probability that many of them will develop pathological levels of psychological problems at some stage of their life (Kleim, Ehlers, & Glucksman, 2007). Many will not only suffer themselves but will create additional burden for family members and the broader society. These findings highlight the need for major improvements in the social environment to change the quality of childhood and ensure a healthy nation. Hence, development and accessibility of effective mental health support for children in Bangladesh is a highly anticipated goal.

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CHAPTER 5

Evaluation of an Innovative Intervention for Traumatized Children in a Low Resourced Country

Farah Deeba and Ronald M. Rapee*

Centre for Emotional Health, Department of Psychology, Faculty of Human Sciences,
Macquarie University, NSW 2109, Australia

*Requests for reprints should be addressed to Ronald M. Rapee, Centre for Emotional
Health, Department of Psychology, Macquarie University, NSW 2109, Australia, (Email:
ron.rapee@mq.edu.au)

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Abstract

Objective: Providing children with a toy animal to care for following a severe trauma has shown some promise in previous research. The current study tested a method where children were encouraged to rehearse positive statements about self, others and the future during interaction with a toy animal.

Participants and Methods: A total of 129 children aged 5-9 years (Mean age= 7.6, $SD=1.29$) who had experienced a major traumatic event and currently lived in one of two shelter-homes in Bangladesh, took part in the study. The two long-term shelter homes were randomly allocated to receive the toy plus cognitive intervention or no intervention and were re-assessed after three weeks. After three weeks those receiving no intervention received the toy only and were reassessed three weeks later.

Results: Following intervention children who received the toy plus cognitive intervention demonstrated lower levels of post-traumatic stress, anxiety and depression symptoms, than children receiving treatment as usual. When provided with the toy only, children who had previously received treatment as usual also showed reductions in symptom levels; however these reductions were slightly less than among children who received the toy plus cognitive intervention at both post-intervention and follow-up assessment.

Conclusion: Providing traumatized children with an object to care for can reduce symptoms of distress and incorporating positive statements into the interaction might increase this effect. Mechanisms by which this procedure might work remain to be explored but the procedure indicates a very brief and inexpensive method to produce small improvements among children from countries with few resources.

Clinical Trial Registration: Registry name: Australian New Zealand Clinical Trials

Registry (ANZCTR) and Registration number ACTRN 12611000683932

Abbreviations: PTSR=Post-traumatic stress reactions; HPI=Huggy-puppy intervention

Keywords: PTSD, anxiety, depression, trauma, children, developing countries.

Introduction

Background

Traumatized children are at high risk for developing PTSD and other post-traumatic stress reactions (PTSR), including anxiety, depression, suicidal ideation, and substance abuse (Cloitre et al., 2009; Colman, Ploubidis, Wadsworth, Jones, & Croudace, 2007; De Bellis, 2002; Derek et al., 2004; Devries et al., 2011). Many children suffer high levels and long periods of PTSR following the experience of a trauma, although some will experience high levels of symptoms without meeting full diagnostic criteria for a disorder (Cohen, Goodman, Brown, & Mannarino, 2004). Traumatic events can have both short-term (La Greca, Silverman, Vernberg, & Prinstein, 1996) and long-term impact (Yule et al., 2000) on mental health in children and can produce lifelong changes at neuro-anatomical (Michael S Scheeringa, Zeanah, Myers, & Putnam, 2004) and physiological levels (Delahanty, Nugent, Christopher, & Walsh, 2005) that negatively impact on level of functioning. Regrettably many traumatic events, such as violent assault, abuse, injuries, and natural disasters are especially common in developing countries (Coleman, Cole, & Wuest, 2010; Pynoos, Steinberg, & Piacentini, 1999). In a study with adult participants from the Philippines 75% had been exposed to a traumatic event in childhood and such experiences had strong relationships with various health-risk behaviours, and poor health in adulthood (Ramiro, Madrid, & Brown, 2010). Unquestionably such experiences create a cumulative social and economic burden for such disadvantaged communities due to the life impairment associated with these psychological reactions.

On the positive side, studies have found that intervention provided to treat post-traumatic reactions at an early age can reduce the probability of developing later psychological problems (Goodwin, Pacey, & Grace, 2003; Van der Kolk, 2006). A

number of evidence based interventions to reduce PTSR in young people have been demonstrated. These include, cognitive behavioural therapy (CBT; Smith et al., 2007), trauma-focused cognitive behavioural therapy (TF-CBT; Cohen, Deblinger, Mannarino, & Steer, 2004; Cohen, Goodman, et al., 2004; Pine, Cohen, Gurley, Brook, & Ma, 1998), child-parent psychotherapy (CPP) (Ellis, Nixon, & Williamson, 2009; Merikangas et al., 2010), and attachment, self-regulation and competency (ARC, Kinniburgh, Blaustein, Spinazzola, & van der Kolk, 2005). CBT-based interventions have been found effective relative to supportive group counselling even for children as young as three years (Scheeringa, Weems, Cohen, Amaya-Jackson, & Guthrie, 2011). In a meta-analysis of psychological interventions for traumatized children between 1997 to 2007, TF-CBT was described as a well-established intervention for 8-15 year old individual child clients (Wethington et al., 2008) and school-based or group CBT as a probably efficacious treatment for children exposed to traumatic events (Silverman et al., 2008). TF-CBT is effective for treating children exposed to sexual abuse, domestic violence and various single or multiple-exposures to traumatic events (Cohen, Mannarino, & Knudsen, 2005; Cohen, Mannarino, & Staron, 2006; Gateway, 2012).

Unfortunately, demonstrations of efficacy do not necessarily translate to effective service delivery. Many barriers can limit effective delivery of efficacious treatments in the real world including lack of knowledge, attitudes to psychological problems and practice-oriented barriers (Higa & Chorpita, 2008; Weisz, Weiss, & Donenberg, 1992). Practically it is not possible to train sufficient numbers of mental health professionals to deliver empirically-validated interventions. Further, most current, validated interventions are highly resource-intensive. For example, TF-CBT typically involves around 10, 60-minute sessions from an experienced therapist to achieve positive outcomes. Newer methods to increase access to empirically-validated interventions such as bibliotherapy

(Rapee, Abbott, & Lyneham, 2006), or internet-based interventions (Holmes, March, & Spence, 2009) also have limited utility in many developing countries due to low levels of literacy, poor technological and telecommunication facilities, and limited access to such facilities. Many of these barriers are especially salient in developing countries where mental health expertise and psychological support systems are often scarce (Patel, Flisher, Nikapota, & Malhotra, 2008). For such countries, the development of easily administered and inexpensive interventions is especially important.

One particularly simple intervention that has strong promise for use in developing countries was recently reported by Sadeh and his colleagues (Sadeh, Hen-Gal, & Tikotzky, 2008) in a study of children affected by war. The intervention, known as the Huggy-Puppy Intervention (HPI) involved providing children who had been displaced by an intense conflict with a stuffed toy dog (called 'huggy-puppy') and instructing them, through a simple story that assimilated the life events of the child, to care for the toy animal. The brief intervention showed promising outcomes in reducing levels of distress among young children aged between 2 and 7 years. Relative to a waitlist comparison, HPI yielded a large effect size reduction in symptoms of war related stress reactions (Cohen's $d > .80$). Sadeh et al. (2008) postulated that providing children under traumatic conditions with a toy animal to take care of invoked three key therapeutic mechanisms: 1) utilisation of the child's sense of responsibility assisted the child to distract from their personal stress and project their own fear and anxiety onto the toy and promote self-esteem; 2) the use of pretend play helped to enhance fundamental developmental milestones (Bornstein, Haynes, O'Reilly, & Painter, 1996; Haight, Wang, Fung, Williams, & Mintz, 1999; Lewis & Ramsay, 2004) and 3) age appropriate play and playful activities helped to create a safe and engaging procedure for children (Briggs, Runyon, & Deblinger, 2011), which helped them to facilitate insight and divergent

thinking (Russ & Niec, 2011). Consistent with this latter suggestion, a review of 76 clinical trials found that interventions incorporating play are especially valuable in low and middle income countries (Maulik & Darmstadt, 2009). Given its very low cost, ease of administration, and conceptual underpinnings, HPI appears to be a very promising intervention for possible application with traumatized children in low-resourced communities.

Enhancement of the Huggy Puppy Intervention

An extensive literature has demonstrated that following trauma young people develop negative beliefs about themselves and the world around them (Kliewer, Lepore, Oskin, & Johnson, 1998; Salmon, Sinclair, & Bryant, 2007; Udwin & Boyle, 2000) similar to that shown by adults (Boelen, van den Bout, & van den Hout, 2003; Dunmore, Clark, & Ehlers, 1999). Clinical observations on the remission of post-traumatic reactions in children in both natural and therapeutic settings have shown that negative beliefs in children following trauma gradually change if they are allowed to discuss or express their related beliefs. For instance, discussing the experiences and thoughts related to a traumatic event with supportive adults helped young children make meaning or sense of their experience, develop coping strategies and learn to control negative emotions (Dowd & McGuire, 2011; Kliewer et al., 1998). Similarly, successful TF-CBT interventions with children also require modification of negative thoughts related to the traumatic event by discussing, challenging and practicing positive alternative thoughts (Cohen, 2008; Cohen, Goodman, et al., 2004; Gateway, 2012). Given the involvement of cognitive factors in the onset and maintenance of PTSR (Dunmore et al., 1999), some authors have pointed to the need to directly address cognitive components within treatments for PTSR (Dunmore, Clark, and Ehlers (2001).

Cognitive interventions are easier to conduct with older children (above ten-years) who are more capable of verbalizing or articulating their personal ideas, concepts, and beliefs than younger children. However, children as young as five are able to understand thought–affect relationships and with the assistance of adults can learn to focus on positive thoughts over negative thoughts (Bamford, 2012). Age-appropriate play has been found to assist younger children to debrief from traumatic events and modify associated distorted cognitions (Briggs, Runyon, & Deblinger, 2011; Haight, Black, Ostler, & Sheridan, 2006; Russ & Niec, 2011). Hence the inclusion of supportive adults can result in better outcomes for children through modification of negative beliefs through play and effective parent-child interaction (as suggested by Patterson, 2005; Runyon, Deblinger, & Schroeder, 2009 and Kotchick & Rex, 2002).

Unfortunately many poorly-resourced communities are located within cultures where discussion about previous traumatic events, especially with children, is discouraged. In contrast, the importance of child play and encouragement of children to think positively are widely accepted. Hence a focus on increased play and positive self-statements can provide broadly acceptable methods to intervene with distressed children across a wide range of cultures.

Objectives

Based on the importance of developing positive perspectives of self, others, and the future to reduce the experience of negative emotional reactions, combined with the promising potential of the huggy puppy procedure to assist children affected by traumatic experiences, we decided to examine the efficacy of a combination of these strategies with traumatized children, from a low-resourced non-war affected community. The present study involved two primary objectives: 1) to explore the efficacy of a modified version of

the HPI that incorporated rehearsal of positive statements (referred to as “enhanced HPI” in this article) and 2) to replicate the efficacy of the basic HPI (referred to as standard HPI). The study was conducted in two stages. Stage 1 involved a comparison of enhanced HPI against children in a treatment-as-usual group. In Stage 2, the children in treatment as usual were provided with the standard HPI, which allowed a quasi-experimental comparison of the enhanced HPI against the standard HPI.

Methods

Context: Bangladesh

Bangladesh is a poor and overpopulated country with 38% living below the poverty line (World Bank, 2013). Natural and man-made disasters are common. Young people are often exposed to traumatic events (Deeba & Rapee, 2014) and are especially vulnerable to mental health problems (Izutsu et al., 2006; Rahman et al., 2012). The country has only limited resources to provide mental health support to its inhabitants due to a small mental health workforce, poor understanding of mental health needs, and limited access due to the costs of service provision (Ahmed, 2011; Bruckner et al., 2011). Although the median health expenditure on a Bangladeshi child can be less than \$US0.20, especially among poor and rural communities (Patel & Kleinman, 2003) few caregivers have the income to afford professional fees or even travel to service centres. Added to this, mental health stigma and disbelief about the effectiveness of *talking therapies* further restrict the access of children to the limited available help (Deeba & Rahman, 2012).

Participants

The directors of two shelter homes, which provided support and safe accommodation for traumatized young people agreed to participate in the present study. The homes were matched as much as possible on several factors. Both were run by non-government international charity organizations, both were situated in semi-urban areas, one within and another outside the capital city of Dhaka, both housed large numbers (approximately, 500) of children of all ages and provided similar services for health, education, and vocational choices in their large premises. Children could live in either institution up to the age of 18 years. Children were accepted to both institutions following loss or abandonment by their parents and an absence of relatives able or willing to care for them. Most of the children had lost one or both parents following natural disasters or accidents or due to domestic violence and witnessed direct or indirect violence against a parent (mostly towards the mother). All children had witnessed or experienced at least one severe DSM-IV (APA, 2000) defined traumatic event and were therefore vulnerable to symptoms of PTSD.

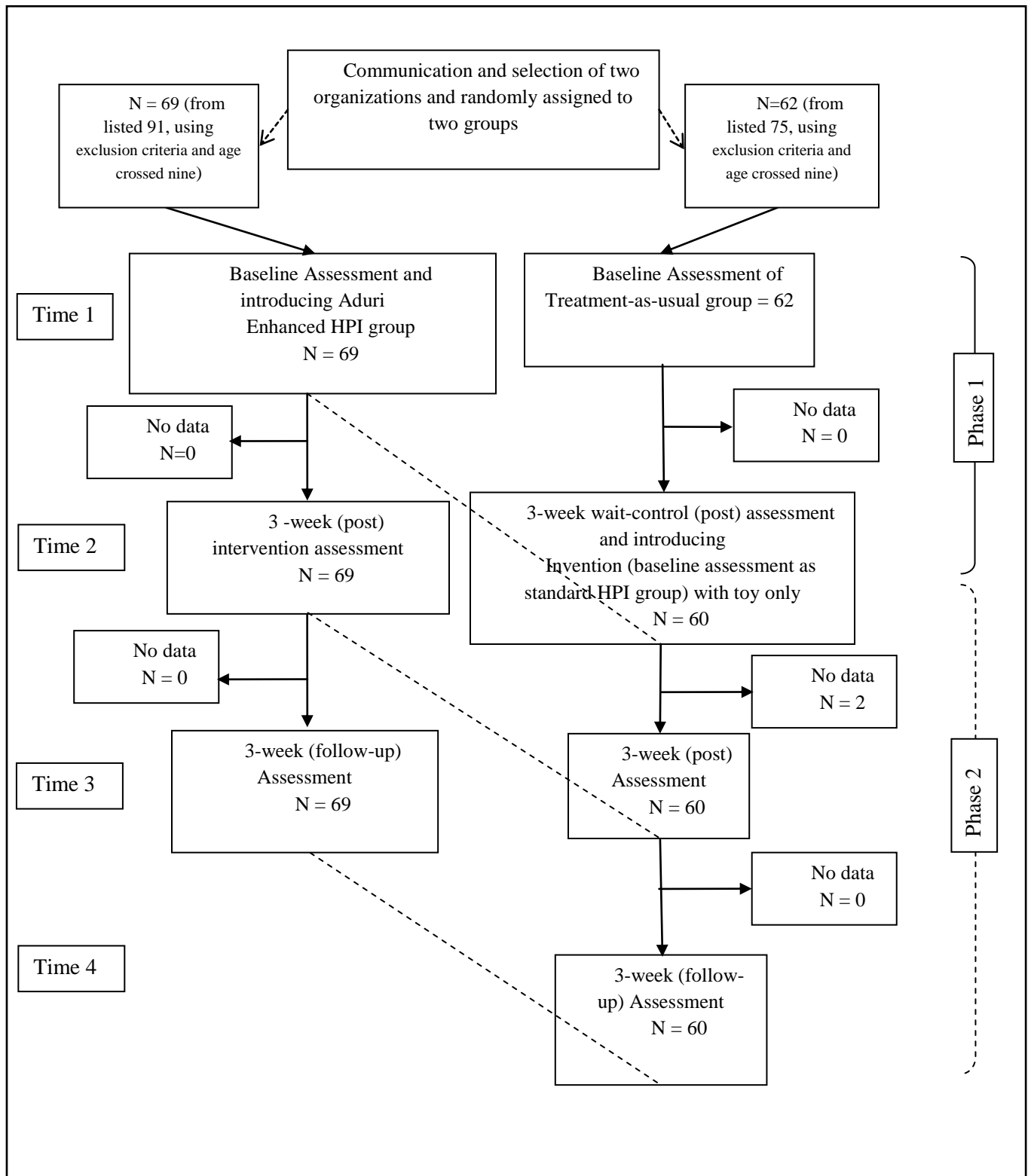
Table 1

Gender, Age, and differences in the scores of the measures used at the baseline level

	Enhanced HPI group(N=69)	Treatment as usual/Standard HPI(N=60)	Statistics
Child's Age in years(Mean, <i>SD</i>)	7.42 (1.30)	7.82 (1.27)	$t(127) = -1.75, p = .08$
Gender (Boy, % in total)	35 (27.55)	43 (33.85)	$\chi^2(1, N=127) = 3.78, p = .05$
Education (N, % in total)	65(52.42)	59(47.58)	$\chi^2(1, N=127) = 1.47, p = .26$
Duration of stay in the centre in months (Mean, <i>SD</i>)	29.28(20.26)	52.98(29.98)	$t(127) = -5.32, p = .001$
Caregiver-child orientation time in months (Mean, <i>SD</i>)	7.91(13.07)	50.08(27.78)	$t(127) = 10.77, p < .001$
Age of caregivers in years (Mean, <i>SD</i>)	35.62(6.78)	35.62(6.34)	$t(31) = 1.55, p = .28$
Educational qualifications of caregivers, SSC and above(N, % in total)	18 (13.95)	28.68(37)	$\chi^2(1, N=31) = 5.042, p = .025$

Figure 1

Participants flow through the study timeline.



All children in each home who were aged between five and nine years and who provided assent to participate were included in the study. Children with serious health conditions, psychotic features, severe ADHD, or any developmental disorders or an inability to comprehend simple instructions were excluded. Exclusions from participation were made by the caregivers of the children, based on the child's medical and psychiatric history. A group discussion including inclusion and exclusion criteria was conducted with the caregivers before the study and they selected children for the intervention. Both institutions employed caregivers as the primary carer for the children and they were resident in each home. Caregivers were not professionally qualified, but were often selected following their own experience of negative life events. The educational qualifications (completion of primary, secondary/SSC, higher secondary/HSC and higher degree) of the caregivers differed significantly between the two shelter homes (see, Table 1).

A total of 152 children aged between 5 and 9 in the two organizations (90 from the organization outside Dhaka and 62 from the organization inside Dhaka) were initially selected for the study. Following exclusion criteria, 129 children were finally engaged in the study. Of the 23 children who were excluded, 20 had left the shelter home during the period of the study, two were excluded due to excessive symptoms of hyperactivity, and one was hospitalized during the study. Allocation to condition was conducted at an institution level with one institution randomly allocated to the enhanced HPI group condition and the other allocated to the remaining treatment as usual group. Thus, 69 children (35 boys, 52%; Mean age = 7.40, $SD = 2.10$) were in the enhanced HPI group and 60 (43 boys, 71%; Mean age = 7.01, $SD = 2.71$) were in the treatment as usual group (later standard HPI group). Figure 1 describes the full design, participant flow and time-line for the study. Two children from treatment-as-usual discontinued before the post-wait

assessment: one was hospitalized and the other refused to complete questionnaires. As can be seen in Table-1, there were significant differences between the groups on children's gender, duration of stay at the shelter home, length of relation with the caregiver, age of the caregiver and the level of educational qualification of the caregivers.

Measures

Children and caregivers were administered the assessment tools (see flow chart in Figure 1) at 3-time points in the enhanced HPI group and 4-time points for the standard HPI group, (see Figure 1). There was a 3-week interval between each assessment.

Translation

After receiving permission from the original authors of the English versions of the measures, they were translated according to accepted guidelines for the translation of instruments (Widenfelt, Treffers, Beurs, Siebelink, & Koudijs, 2005). Translation was done by the bilingual investigator of the study and then another bilingual professional psychologist (who did not see the original English versions of the scales) translated them back to English. Differences in the original and back translated versions were checked by the second author of the study, a native English speaker. Identified differences were discussed and resolved by the Bangla-speaking translators.

Child-report measures

Children's Revised Impact of Events Scale-8 (CRIES-8; Dyregrov & Yule, 1995)

To measure symptoms of post-traumatic stress reactions, children completed the CRIES-8. The measure has high internal consistency for the total scale (Cronbach's $\alpha=.90$) as well as each sub-scale (Cronbach's α of Intrusion=.84 and Avoidance=.83) (Dyregrov & Yule, 1995) and has satisfactory validity, factor structure, and discriminant validity (Perrin, Meiser-Stedman, & Smith, 2005). Higher scores reflect

more severe symptomatology. The measure has been translated and validated in a variety of cultures (for example, (Giannopoulou et al., 2006; Zhao et al., 2009)). For the present study, the Bangla translation of the CRIES-8 was used, which has also shown satisfactory psychometric properties (Deeba, Rapee, & Prvan, 2014). Cronbach's alpha was satisfactory (.85) within the current sample.

Cognitive Triad Inventory for Children (CTI-C; Kaslow, Stark, Printz, Livingston, & Ling Tsai, 1992)

The 36-item CTI-C aims to assess both positive and negative cognitions covering three subscales: view of self, world, and the future. Higher scores on the measure reflect more positive beliefs. Internal consistency has been found to be moderate to strong for all subscales (Chronbach's alpha, Self = .83, World = .69, and Future = .85) and for the total score ($\alpha = .92$). In the present study, the Cronbach's alpha for the total scale was satisfactory ($\alpha = .83$).

Questionnaires used with caregivers

Spence Children's Anxiety Scale for parents (SCASp; Nauta et al., 2004)

To measure symptoms of anxiety in children as observed by the caregivers, the 38-item SCASp was used. Items are rated on a 4-point Likert-type scale ranging from 0 (never) to 3 (always) and higher scores reflect stronger symptoms of anxiety. The parent version of the SCASp shows satisfactory to good psychometric properties with high internal consistency (0.89) and satisfactory convergent and discriminant validity (Nauta et al., 2004). In the present study, Cronbach's alpha was .87 for the caregivers.

Short Mood and Feelings Questionnaire-parent (SMFQp; Angold et al., 1995)

The SMFQp comprises 13 items to assess depression in children as reported by caregivers. Items are rated on a 3-point scale, with higher scores indicating more symptomatology. The unifactorial measure has high internal consistency (Cronbach's $\alpha=.87$) and test retest reliability with satisfactory construct validity (Rhew et al., 2010). In the present study, Cronbach's α for the sample was .70.

Mechanisms questionnaire

In order to assess implementation of the intervention, a 10-item measure was developed to monitor potential mechanisms of change following questions in the original HPI study (Sadeh et al., 2008). Six questions assessed the child's engagement with the toy and three questions assessed use of positive statements with the toy as evidence of performing the cognitive tasks. These items were rated on a 5-point Likert scale ranging from 0 (no change) to 4 (a great deal of change). A final question asked caregivers to indicate how often they reminded children to play with the over the preceding three weeks on a 0-100 scale, where 0=*not at all* and 100=*regularly reminded*. The questions were completed by caregivers based on their observations and were administered immediately following each intervention period.

Intervention

The intervention for both conditions in the present study closely followed that described by Sadeh and colleagues (Sadeh et al., 2008). Children in both conditions received a small stuffed animal as a gift and were told a short story describing the animal's background that was relevant to the child's life and experiences. Because dogs are not typically kept as pets in Bangladesh for religious reasons, the current trial used a toy teddy bear named *Aduri*, a Bangla word, meaning, someone fond of being hugged and caressed.

In two separate group training sessions after baseline assessment both groups were given the following standard story when they received Aduri: *"This is my friend "Aduri". She has come from a faraway land. She can't tell where, as she is lost and young. Aduri is usually a very happy teddy. However, she is very sad and a little frightened now. Do you have any idea why she might be sad? Let us discuss."* After children's replies, the story continued, *"Yes, you all are very right. She is sad because she has been separated from her home and family and does not know anyone here. She likes to be hugged a lot but she has no one to take care of her, here. What feelings might she have about being separated from her family? Do you think she has some of the same feelings that you might have? Can you name some of her feelings?"* After their reply, the instructions continued, *"Thanks. It seems you all are feeling for Aduri very much. Now, do you think you can be her friend who will take care of her, give her love and lots of cuddles, and take her to bed with you?"* They were instructed to keep the toy with them all the time except bath and school time and to care for the toy at least twice every day, before going to school and at bed before sleep.

For the enhanced HPI group a series of positive statements were included in addition to the standard instructions. Children were asked to use these statements or make up various statements related to self, others and future, (for instance, using I, you and any positive things that can happen in future) with the toy while taking care of it. The statements reflected positive views of the self, (e.g., *you are a strong teddy, you can cope with all difficulties, you are nice and good, you are lovable, you are capable of doing nice things, you make me feel good, you are a happy doll, etc.*), world (e.g. *people around you like you a lot, others are helpful and friendly, people around you praise you when you do something good, most of the people around us are nice and good, others help when you are in need, etc.*) and future (e.g. *you will always be loved, your future is bright, many nice*

things will happen in coming years in your life, your good qualities surely will make your future bright, you will be successful one-day, etc.).

Caregivers also attended the group sessions as observers to learn the tasks children had to perform, so that they could remind the children to do their task each day. In the standard HPI, caregivers were to remind children to take care of the toy animal only, whereas in the enhanced HPI group caregivers were to remind children both to take care of the toy and to encourage talking to the toy using the given positive statements or similar. A leaflet listing examples of positive statements was provided to assist caregivers.

Procedure

The procedures were approved by an Australian University Human Research Ethics Committee (Ref no. 520100595 dated 3/10/2011, Appendix D). Institutions were searched from different available sources e.g. government registry, web-based lists of institutions in Bangladesh working with children, professionals' suggestions, etc. Only three institutions were identified that appeared moderately matched and therefore were asked for permission to execute the study. Two institutions showed interest in participating and their directors met with the first author to discuss procedures and ethical principles and provide written permission. Both institutions gave consent on the condition that no discussion would occur with the children directly reflecting their previous traumatic experiences. The organizations were randomly assigned to either the enhanced HPI group or treatment-as-usual group (which later received the standard HPI) by using a lottery method. Children in the treatment-as-usual group completed measures initially and again three weeks later with no intervention, following which they were introduced to the standard HPI. At the initial session, the closest caregivers of the children attended a group discussion session to be introduced to the research team (the first author and a research assistant, a graduate in clinical psychology, who were present at all sessions), to discuss

problem behaviours demonstrated by the children, to describe children's exposure to traumatic events and their impact on children, symptoms of emotional and behavioral problems, selection of participants and the assessments and tasks required during the research. Information on available services for children's emotional and behavioral problems were also discussed. Caregivers were then asked to complete baseline questionnaires. Children were tested in small groups ranging from 3-10 (younger children in smaller groups) after obtaining their assent. Following assessment of all children, they were taken to a group session where they received the instructions on how to take care of the toy. As described above, children in the enhanced HPI group received the toy and instructions immediately, while children in the waitlist received no toy or instructions initially, but received the standard HPI three weeks later. Thus, the treatment-as-usual group which was later introduced to standard HPI was assessed four times and the enhanced HPI group was assessed three times (see, Figure 1).

Data Analysis

As mentioned, the study involved two stages. The first stage comprised a randomized control trial comparing the enhanced HPI group against waitlist while the second stage comprised a quasi-experimental design comparing the two active interventions (enhanced HPI group and standard HPI). Such studies have been referred to as either *experimentally staged introduction trials*, or a *stepped wedge design* Cook, Campbell, and Day (1979); (Group, 1987). Since the main purpose of the study was to evaluate the intervention and thereby improve distress levels, analyses were made on participants who had completed all assessments and intervention initially (completers) and then with all the participants who enrolled in the study (intent to treat). Multiple imputation was used to handle missing data. Continuous measures were analysed using mixed model ANOVAs (Hussey & Hughes, 2007). Results of analyses of data based on these two methods were almost identical, hence

only intent-to-treat analyses are reported here. We have reported averaged results of imputed results for all *F*s, degrees of freedom, partial eta squared estimates for the results. Reported results of Means and *SD*s are based on original data. Then we calculated the *p*-values from *F* and *t* values. All the demographic variables that differed significantly between groups (child gender, duration of stay at the shelter home, length of relation with the caregiver, age of the caregiver and the level of educational qualifications of the caregivers) were included as covariates. In the models, group was a fixed factor, time was included as a repeated measure and covariates were unstructured. Therefore, in Phase 1, results on intervention (enhanced HPI X treatment-as-usual), time (Time 1 X Time 2) and interaction of intervention and time (Group X Time) were checked. For the Phase 2 or quasi-experimental test, results on intervention (enhanced HPI X standard HPI), time [baseline assessment (Time 1 for enhanced HPI group and Time 2 for standard HPI) X post-intervention (Time 2 for enhanced HPI and Time 3 for standard HPI) and follow-up assessment (Time 3 for enhanced HPI and Time 4 for standard HPI)] and interaction of intervention and time (Group X Time) were examined. All post-hoc analyses were done using simple comparison tests. To denote the variances between groups within each time point, effect sizes are presented as partial η^2 . In order to measure the extent to which change in PTSD symptoms was associated with the three process mechanisms assessed in the study, we combined the groups and ran separate stepwise multiple regressions (controlling for demographic covariates and prior scores on PTSD symptoms measure and institution at step 1) with the differences of the outcome measures at pre-intervention to post-intervention and post-intervention to follow-up assessment points as the dependent variables.

Results

Baseline comparison between groups

Descriptive information across the two groups is presented in Table 1. As can be seen, the groups differed significantly on several factors. Compared with the enhanced HPI group, the treatment-as-usual group contained significantly more boys, a longer stay in the institution, longer child-caregiver relationship, and higher levels of caregivers' educational qualification. These variables were entered as covariates in all following analyses. A series of t-tests comparing the two institutions on the standard measures revealed that the enhanced HPI group scored significantly higher on the CRIES 8, $t(127)=4.23, p<.001$, SCASp, $t(127)=9.69, p<.001$, and SMFQp, $t(127)=5.44, p<.001$, and lower on the CTI-C, $t(127)=-8.31, p<.001$, compared to the treatment as usual group.

Comparison of Enhanced HPI and Treatment-as-Usual group (Phase-1)

Mixed model ANOVA was used to compare the two groups across baseline (Time 1) and post intervention (Time 2) assessments after 3-weeks on measures used in the study. Estimated marginal means and standard errors are presented in Table 2.

Symptoms of PTSD

When comparing the groups on symptoms of PTSD measured with the CRIES-8 at baseline and post-intervention, there was no significant main effect for intervention, $F(1, 123)=2.64, p=.11, \eta_p^2=.02$, or time, $F(1, 123)=2.18, p=.14, \eta_p^2=.02$, however there was a significant time by group interaction, $F(1, 123)=10.81, p=.001, \eta_p^2=.08$. Post-hoc analyses showed that children in the treatment-as-usual group failed to change significantly, $t(123)=.93, p=.33$, between Time 1 and Time 2, but mean scores on the CRIES-8 decreased significantly, $t(123)=4.70, p<.001$, among children in the enhanced HPI group from Time 1

to Time 2. Comparison between the groups at Time 1 showed a significant difference, $t(123)=2.82, p<.01$. However at Time 2 (post intervention) the groups did not differ significantly, $t(123)=.71, p=.33$.

Symptoms of internalising problems

Anxiety

On the SCASp there was a significant main effect difference found for intervention, $F(1, 123)=31.63, p<.001, \eta_p^2=.20$ and a significant main effect reduction in symptoms of anxiety over time, $F(1, 123)=32.15, p<.001, \eta_p^2=.21$, which were qualified with a significant interaction between time and group, $F(1, 123)=25.10, p<.001, \eta_p^2=.20$. Post-hoc analyses showed that mean scores on the SCASp reduced for both the treatment-as-usual group, $t(123)=2.39, p<.05$, and the enhanced HPI, $t(123)=12.41, p<.001$, from Time 1 to Time 2. Mean scores on the SCASp obtained by children in the enhanced HPI group were higher than the treatment-as-usual group at both Time 1, $t(123)=6.19, p<.001$, and Time 2, $t(123)=2.61, p<.01$ assessment.

Depression

According to scores on the SMFQp, there was no significant main effect difference found for intervention, $F(1, 123)=3.38, p=.07, \eta_p^2=.03$ but a significant main effect reduction in symptoms of depression over time, $F(1, 123)=39.53, p<.001, \eta_p^2=.02$. However there was a significant interaction between time and group, $F(1, 123)=16.50, p<.001, \eta_p^2=.12$. Post-hoc analyses found that level of depressive symptoms in children in the treatment-as-usual group did not change significantly from Time 1 to Time 2, $t(123)=1.53, p=.13$, but there was a significant reduction from Time 1 to Time 2 in the enhanced HPI group, $t(123)=1.64, p<.001$. Children's mean scores on the SMFQp in the

enhanced HPI group were significantly higher than the treatment-as-usual group at Time 1, $t(123)=3.13, p<.01$, but there was no significant difference at Time 2 $t(123)=1.70, p=.09$.

Changes in cognitions

There was a significant main effect difference in negative cognitions as measured by the CTI-C between groups, $F(1, 123)=17.24, p<.001, \eta_p^2=.12$, but no significant main effect reduction over time, $F(1, 123)=.77, p=.38, \eta_p^2=.01$. There was a significant interaction between time and group, $F(1, 123)=39.19, p<.001, \eta_p^2=.24$. Post-hoc analyses showed a significant change in cognition from Time 1 to Time 2 in both the treatment-as-usual group, $t(123)=5.24, p<.001$, and the enhanced HPI group, $t(123)=5.19, p<.001$. The mean scores on the CTI-C obtained by children in the enhanced HPI group were significantly lower (higher negative cognition) than those in the treatment-as-usual group at Time 1, $t(123)=-6.96, p<.001$, but there was no significant difference at Time 2, $t(123)=-.44, p=.66$.

Quasi-experimental comparison of enhanced HPI and standard HPI (Phase-2)

As described above, a quasi-experimental analysis was conducted by comparing scores on the various measures in the enhanced HPI group condition at assessment times 1, 2 and 3 with scores in the standard HPI condition at assessment times 2, 3, and 4. Estimated marginal means and standard errors, of the two groups are presented in Table 2.

Symptoms of PTSD

There was no significant main effect difference between interventions, $F(1, 123)=.09$, $p=.77$, $\eta_p^2=.01$ but there was a significant main effect reduction in symptoms of PTSD measured with the CRIES-8 over time, $F(2, 122)=5.03$, $p=.01$, $\eta_p^2=.08$. This was qualified by a significant interaction between time and group, $F(2, 122)=15.64$, $p<.001$, $\eta_p^2=.20$. Post-hoc analyses showed no significant change in PTSD symptoms from pre-intervention (Time 2) to post-intervention (Time 3) in the standard HPI group, $t(123)=1.48$, $p=.14$, or post-intervention (Time 3) to follow-up (Time 4), $t(123)= -1.23$, $p=.22$, or from pre-intervention (Time 2) to follow-up (Time 4), $t(123)=.25$, $p=.80$. On the other hand PTSD symptoms decreased significantly among children in the enhanced HPI group from pre-intervention (Time 1) to post-intervention (Time 2) $t(123)=5.72$, $p<.001$, post-intervention (Time 2) to follow-up (Time 3) , $t(123)=5.01$, $p<.001$, and from pre-intervention (Time 1) to follow-up (Time 3) $t(123)=10.73$, $p<.001$. At baseline symptoms were higher in the enhanced HPI group than standard HPI, $t(123)=3.18$, $p<.01$, but there was no significant difference between groups at post-intervention (Time 2 for enhanced HPI and Time 3 for standard HPI), $t(123)=.64$, $p=.52$, and the enhanced HPI groups scored significantly lower on PTSD symptoms at follow-up , $t(123)=2.55$, $p=.01$.

Table 2

Statistics for Mixed Model ANOVAs for treatment-as-usual/Standard HPI(N=60) and enhanced HPI group (N=69)

		<u>Time 1</u>	<u>Time 2</u>	<u>Time 3</u>	<u>Time 4</u>
		Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)
CRIES-8	Treatment-as-usual/Standard HPI	16.11 (9.06)	16.88 (6.53)	14.85 (7.51)	16.31 (6.69)
	Enhanced HPI	22.19 (7.21)	16.99(7.35)	11.83 (6.73)	-
SCAS-P	Treatment-as-usual/Standard HPI	8.31 (8.54)	5.18 (5.61)	5.41 (6.12)	6.17 (7.91)
	Enhanced HPI	23.82 (9.50)	8.80 (4.50)	5.49 (4.22)	-
SMFQ-P	Treatment-as-usual/Standard HPI	1.75 (2.68)	.95(1.88)	1.25(1.99)	.87 (1.70)
	Enhanced HPI	4.82(3.58)	.81 (1.20)	.39(1.20)	-
CTI-C	Treatment-as-usual/Standard HPI	63.55(7.68)	57.50 (10.08)	62.05 (8.29)	61.13(9.34)
	Enhanced HPI	50.71(9.58)	56.55 (8.32)	64.29(7.14)	-

Note: CRIES-8=Children's Impact and Event Scale-8; SCASp=Spence Children Anxiety Scale for parents; SMFQp= Short Mood and Feelings

Questionnaire for Parents; CTI-C= Cognitive Triad Inventory for Children

Symptoms of internalising problems

Anxiety

On the SCASp there was a significant main effect difference between groups, $F(1, 123)=27.58, p<.001, \eta_p^2=.183$, and a significant main effect reduction over time, $F(2, 122)=14.02.50, p<.001, \eta_p^2=.19$. These were qualified by a significant interaction between time and group, $F(2, 122)=30.75, p<.001, \eta_p^2=.34$. Post-hoc analyses showed a significant reduction in anxiety symptoms for the enhanced HPI group from pre-intervention to post-intervention, $t(123)=13.83, p<.001$, post-intervention to follow-up, $t(123)=3.91, p<.001$, and pre-intervention to follow-up $t(123)=17.74, p<.001$. There was no significant reduction for the standard HPI group between any time points (Time 2 to Time 3, $t(123)=1.87, p=.14$, Time 3 to time 4, $t(123)= -1.64, p=.10$ and Time 2 to Time 4, $t(123)= -.38, p=.70$). Children in the enhanced HPI group scored significantly higher on the SCASp than those in the standard HPI group at baseline, $t(123)=8.14, p<.001$, and at post-intervention $t(123)=3.48, p<.001$ but there was no significant difference between the two groups at follow-up, $t(123)=-1.03, p=.30$.

Depression

On symptoms of depression assessed by the SMFQp, there was no significant main effect found for intervention, $F(1, 123)=1.20, p=.27, \eta_p^2=.01$, but significant main effect reduction over time, $F(2, 122)=17.48, p<.001, \eta_p^2=.12$. However there was a significant interaction between time and intervention, $F(2, 122)=18.20, p<.001, \eta_p^2=.23$. Within the standard HPI group, there was no significant difference in depressive symptoms from baseline to post-intervention, $t(123)= -.32, p=.75$, or from baseline assessment to follow-up, $t(123)=.29, p=.77$, or from from post-intervention to follow-up assessment, $t(123)=.61, p=.54$. Within the enhanced HPI group there were significant symptom reductions from baseline to post-intervention, $t(123)=4.03, p<.001$, and from pre-intervention to follow-up

assessment, $t(123)=4.26, p<.001$, but no significant change was observed from post-intervention to follow-up assessment, $t(123)=1.03, p=.30$. Group-wise comparison showed that mean scores on SMFQp in the enhanced HPI group were significantly higher than that of the standard HPI group only at pre-intervention, $t(123)=4.3, p<.001$. Symptoms of depression were significantly lower among children in the enhanced HPI group compared to the standard HPI group at both post-intervention, $t(123)=2.67, p<.01$, but no difference at follow-up assessment, $t(123)=-2.00, p=.06$.

Changes in cognitions

There was a significant main effect of intervention on scores on the CTI-C, $F(1, 123)=5.15, p<.05, \eta_p^2=.04$, and a significant main effect of time, $F(2, 122)=12.20, p<.001, \eta_p^2=.16$, however this was qualified by a significant interaction between time and group, $F(2, 122)=11.17, p<.001, \eta_p^2=.15$. Follow-up analyses showed significant reductions in negative cognitions in both the standard HPI group, $t(123)=-3.53, p<.01$, and the enhanced HPI group, $t(123)=-6.77, p<.001$, from pre-intervention to post-intervention. However there was no significant difference from post-intervention to follow-up in the standard HPI group, $t(123)=-.08, p=.93$. Overall, there was a significant increase in positive cognition from pre-intervention to follow-up in the standard HPI group, $t(123)=-3.46, p<.001$. On the other hand, enhanced HPI group children showed increased positive cognition from post-intervention to follow-up, $t(123)=-6.98, p<.001$, and overall the level significantly increased from pre-intervention to follow-up assessment, $t(123)=-13.76, p<.001$. Group comparisons revealed that children in the standard HPI had higher positive cognition at both pre-intervention $t(123)=3.50, p<.001$ and post-intervention, $t(123)=2.66, p<.01$, than those in the enhanced HPI group, however there was no significant difference at follow-up, $t(123)=-.57, p=.56$.

Process factors predicting symptom reduction

Three process mechanisms were used in our study, caregivers' reminders, engagement with the toy and use of positive statements, which were assessed by ratings from caregivers following the two active interventions. To examine differences in utilisation of these processes within each intervention, scores were compared between the two groups using t-tests. Utilisation of all three process mechanisms was significantly higher in the enhanced HPI than the standard HPI: use of caregiver's reminders, $t(127)=17.1, p<.001, M=78.62, SD=13.17$ for enhanced HPI and $M=39.00, SD=13.77$ for standard HPI; utilisation of engagement with toy, $t(127)=6.30, p<.001, M=13.84, SD=4.31$ for enhanced HPI and $M=5.40, SD=5.42$ for standard HPI; and use of positive statements, $t(113.31)=13.52, p<.001, M=11.67, SD=2.78$ for enhanced HPI and $M=4.13, SD=3.45$ for standard HPI.

In order to measure how much the change in PTSD symptoms was associated with the three process mechanisms assessed in the study, we ran separate hierarchical multiple regressions (controlling for demographic covariates). We had also controlled prior PTSD symptom assessment scores for the analyses, that is, baseline symptoms level at first analysis and post-intervention symptom levels for later analysis. As there was no *a priori* hypothesis regarding the order of entry for the predictor variables, the three process mechanisms were entered into the model simultaneously.

The first model predicted change on the CRIES-8 from pre-intervention to post-intervention. Entering the demographic covariates and process variables as a single block resulted in a significant model with an adjusted R^2 of .23, $F(9, 128)=4.96, p<.001$. The only significant predictor was the educational level of the caregivers, $\beta=-2.51, t=-2.72, p<.01$ along with baseline PTSD symptoms, $\beta=.40, t=4.64, p<.001$. None of the process variables contributed additional significant variance to the model: caregivers' reminders, $\beta=-.01, t=-$

.11, $p=.91$, engagement with the toy, $\beta=-.26$ $t=-1.12$, $p=.26$, and use of positive statements, $\beta=.18$, $t=.74$, $p=.46$.

The second model predicted change on the CRIES-8 from post intervention to follow-up. The overall model was significant with an adjusted R^2 of .43, $F(9, 128)=11.92$, $p<.001$. The strongest significant predictor was the duration of the child's relationship with the caregiver, $\beta=-.07$, $t=-2.31$, $p<.05$ along with the post intervention PTSD symptoms, $\beta=.47$, $t=2.28$, $p<.05$. Among the three predictors, the use of positive statements added significant additional variance to the model, $\beta=.47$, $t=2.28$, $p<.05$, while the other two predictors did not account for significant unique variance, caregivers' reminders, $\beta=-.02$, $t=-.58$, $p=.56$, for engagement with the toy, $\beta=-.18$, $t=-1.19$, $p=.24$.

Discussion

An innovative, low-cost, and easy to administer intervention, originally developed by Sadeh and colleagues (Sadeh et al., 2008) and referred to as the Huggy Puppy Intervention (HPI), was modified in the current study through the addition of a simple enhancement and evaluated with traumatized young children from a low-resourced non-war affected community. The original HPI involved responsibility and care for a stuffed toy and our modified version included the additional use of simple positive statements. The current study tested the efficacy of these two interventions in a two staged partially randomized quasi experimental trial. Results supported the efficacy of the enhanced HPI in reducing symptoms of PTSD, anxiety, and depression, and increasing positive thoughts among children who had experienced a variety of severe traumas. Further, the quasi-experimental evaluation that compared the two forms of the intervention, suggested that for this chronic sample, the enhanced HPI resulted in slightly better results than the standard intervention.

These outcomes suggest that the modified version of the HPI is a promising intervention that can be delivered to a number of children using minimum resources, expertise and costs.

One potential limitation of the research was the small number of shelter homes that were included in the sample. A limitation that this introduced was a difference between the two groups on several baseline measures. It is possible that the changes demonstrated in the enhanced HPI condition reflected regression to the mean effects rather than intervention-produced reductions. However, the fact that children in the enhanced HPI condition continued to show improvements from post-intervention to follow-up and reached levels on most measures that were better than those in the standard HPI condition, mitigates this possibility. Nonetheless, future studies would benefit from inclusion of a broader and more representative cross-section of homes and hopefully this initial positive demonstration will stimulate larger replications.

The mechanisms by which this simple intervention can reduce distress among children reporting such extreme events is not clear, although several possibilities can be speculated. Three possible mechanisms (attachment with the toy, caregiver's reminders, use of positive statements) were evaluated in this study. Interestingly, all variables were higher in the enhanced HPI condition, reflecting its stronger outcomes, but only the use of positive statements accounted for unique variance in changes on symptoms of PTSR. Previous research has shown that exposure to an inanimate pleasant object (such as a stuffed animal) can create nurturing motivations in children (Hinde & Barden, 1985; Morris, Reddy, & Bunting, 1995) and Tai, Zheng, and Narayanan (2011) have shown that holding toy teddy bears can increase both prosocial behaviors and positive mood in adults. In their original paper, Sadeh and colleagues (2008) suggested that reductions in distress may have followed the attachment the children developed to the toy combined with subsequent distraction from their circumstances under war conditions. The greater change on attachment produced by the

enhanced HPI provides some support for this suggestion, although the regression analysis did not provide evidence indicating attachment with the toy as a core mechanism underlying change. The similar effect of the enhanced HPI on enhancing caregivers' reminders is consistent with research showing that adults' attention towards children can reduce children's distressing symptoms (Luborsky, Barber, & Beutler, 1993; Taylor, 2004; Westen, Novotny, & Thompson-Brenner, 2004). Again, the fact that this variable did not account for unique variance in reduction of PTSD, limits conclusions that can be drawn. In contrast, our results pointed to the importance of the use of positive statements in predicting outcome, a finding that is consistent with other research (Cohen & Mannarino, 1996, 1997; Cohen, Mannarino, Berliner, & Deblinger, 2000; Deblinger, Lippmann, & Steer, 1996). This possibility is also consistent with the overall finding that the enhanced HPI appeared to produce improvements that were somewhat stronger than use of the toy animal alone. Encouraging children to consciously verbalise positive statements appears to have increased the effects of engagement with the toy.

Our findings support the findings of other studies that suggest the effectiveness of cognitive tasks with very young children with help from adults (e.g. Bamford & Hansen, 2012; Lagattuta, Sayfan, & Bamford, 2012; Runyon, Deblinger, & Schroeder, 2009). The use of positive cognition is especially possible for very young children. Unlike adults children's attitudes are more flexible and amenable to change by assisting them to practice thinking differently. With repeated rehearsal the habit of thinking positively or negatively can be strengthened (or weakened) within therapeutic work. Children's attitudes are flexible and amenable to change by assisting them to practice thinking differently. With repeated rehearsal the habit of thinking positively or negatively can be strengthened (or weakened) during therapeutic work. In our study caregiver's educational level predicted improvements in trauma symptoms. It is likely that educated care-givers would be more engaged and

involved with children's activities, allowing them to provide a more nurturing positive development. More educated caregivers may also better understand the purpose of the intervention and be better able to adapt application to each child's situation. Interactions with adults help children to learn and develop cognitively. It would generally be expected that adults with higher levels of education would provide better support for very young children to learn various cognitive concepts. However, a study conducted in Bangladesh showed that even with illiterate mothers children can be assisted to develop cognitively, if the parent is provided with suitable and effective interaction procedures (Aboud, 2006).

The fact that the standard HPI appeared to be associated with little improvement in our study was somewhat surprising but might reflect fundamental differences between the original study (Sadeh et al., 2008) and ours. In the original study, Sadeh and colleagues provided a toy animal to children who were under current threat through dislocation and possible bombing. In this context responsibility and care for the toy may have provided a much-needed distraction from intense fear and uncertainty. Although children in the current study had been through severe trauma, they were currently largely beyond threat and lived in a safe and secure environment. The toy animal in this case may have served more of a focus for positivity rather than distraction and this focus may have been especially amenable to enhancement by positive statements.

Sadeh et al., (2008) conceptualized the use of pretend play to create an innovative, low-cost intervention. As argued by Stein and Kendall (2004), effective interventions for childhood traumatic cases that use play allow children to learn about themselves, their world and how to adapt. Pretend play provides children with the opportunity to integrate emotions with cognitions by expressing their positive and negative feelings (Jent, Niec, & Baker, 2011; Seja & Russ, 1999). When children perform pretend play in a group or their social context it enhances linguistic development and social functioning (Fisher, 1992),

consequently improves empathetic interactions (Ashiabi, 2007) and appropriate emotion regulation (Haight, Black, Ostler, & Sheridan, 2006). When children use pretend play in a group context, representation of others' perspectives helps to develop empathy and appreciation for social norms (Jenkins & Astington, 2000; Kavanaugh & Harris, 1999; Nourrot, 2006; Rubin & Howe, 1986).

Clinical Implications

The simplicity of the current intervention has several benefits for application in low-resourced, developing communities. First, the enhanced HPI seems to be an effective intervention that may provide value for children who experience trauma within a disadvantaged community like Bangladesh. Second, even poorly qualified and in some cases illiterate caregivers were able to be trained to motivate and engage children to create positive changes. Whereas more traditional, empirically validated interventions require high levels of expertise and training, the current intervention was able to deliver some basic components using adults with very limited training. In turn, this is likely to have powerful benefits for communities with very limited resources. Finally and most importantly, this intervention has the flexibility to accommodate large numbers of children simultaneously thereby reducing costs and facilitating extensive accessibility. The flexibility of the enhanced HPI is especially valuable, allowing easy modification for different ages, genders, cultures, or communities of children. It has particular value for cultures where the expression of private feelings and use of psychological concepts is not well accepted.

Study Limitations

The primary limitation of the study was the lack of randomization to the two active conditions, thereby limiting the extent to which comparisons can be drawn between these

conditions (quasi-experimental design). It was also very difficult to select institutions that were fully matched on all relevant variables and this, combined with the small number of institutions means that the results need to be accepted with some caution. In particular, the fact that the two groups differed on baseline symptom severity is a potentially serious limitation that needs to be taken into account in interpretation of the results. An additional problem was that the researchers were involved in both administering and evaluating the measures, which might have influenced the results. However, the quasi-experimental analyses showed a difference between the two active treatments (standard and enhanced intervention), both of which were subject to the same potential bias. Therefore, it is unlikely that this limitation greatly affected the results.

The use of extremely positive statements with children in highly adverse circumstances raises some possible moral questions. It is important to point out that children were asked to use these statements or make up various statements related to self, others and future, (for instance, using I, you and any positive things that can happen in future) in a way that individualised the statements to their own circumstances. All children, even those in adverse conditions, can find something positive to focus on. In addition, these children from support services were now being looked after and supported, providing them with several additional positive experiences. By focusing on these positives, we were able to improve mental health, hence leading to a valuable outcome. On the positive side, a strength of this research is the use of a highly relevant, real world population who have urgent needs. The use of carefully controlled and fully randomized designs with such populations is difficult and there is an extensive literature that demonstrates the value of real-world applications using quasi-experimental or non-randomized designs (Bonell et al., 2009; Goenjian et al., 1997; Handley, Schillinger, & Shiboski, 2011; McClatchey, Vonk, & Palardy, 2009;

Sherman, 1998). However, before adopting the intervention more widely, replication and understanding of the mechanisms of effectiveness are warranted.

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CHAPTER 6

Summary and Conclusion

“For a poor person everything is terrible, illness, humiliation, shame. We are cripples; we are afraid of everything; we depend on everyone. No one needs us.”

-Blind woman, Tiraspol, Moldova, 1997
(in Dood, Munck, & Organization, 2001, p-9.)

Eighty five percent of the world’s population are the inhabitants of poor and underdeveloped countries. Health, human rights, and social integration are all affected by poverty. Reductions in illness and poverty, and improvements in global security and equality, are all possible through the contributions of health research (Commission for Health Research for Development, COHRED, 1990). Unfortunately in developing countries scientific investigation to address these needs is almost non-existent (Bloom, Michaud, La Montagne, & Simonsen, 2006; Ranson, Law, & Bennett, 2010). Among the least addressed and most neglected sectors of health research in these countries are mental health needs and relevant service development (Alem & Kebede, 2003; Harpham, 1994; Patel, 2007; Patel, Araya, et al., 2007; Razzouk et al., 2010; White, Patel, & Herrman, 2005). Further, within the broader scope of mental health, child mental health (CMH) is the sector that is least developed (Patel, Flisher, Hetrick, & McGorry, 2007; Patel, Flisher, Nikapota, & Malhotra, 2008). As a result, several researchers from developing countries have suggested that research into children and adolescents must be a priority (Sharan et al., 2009). In addition, the particular burden attributable to trauma and injury within developing countries indicates this area as one that requires urgent attention (Das, Do, Friedman, McKenzie, & Scott, 2007; Hofman, 2005; Sharan et al., 2009).

Childhood trauma has been identified as a major social health problem for all nations of the world and many empirical studies have shown its impact on both short and long-term consequences (Spates, Samaraweera, Plaisier, Souza, & Otsui, 2007;

Stein & Kendall, 2004; Stoddard et al., 2006; Stuber, Shemesh, & Saxe, 2003; Teicher et al., 2003). The consequences of traumatic exposure are more complicated for those children who live in vulnerable and disadvantaged circumstances, for instance, children from the streets, broken families or shelter homes (Becker-Blease, Turner, & Finkelhor, 2010; Bruskas, 2008; Stewart et al., 2004; Whetten, 2011). The earlier and more frequently that a child experiences traumatic events and the longer the time without intervention or support, the more complicated are the symptoms they experience (Briere, Kaltman, & Green, 2008; Cloitre et al., 2009; Hageraars, Fisch, & Van Minnen, 2011; Hickman et al., 2013; Hodges et al., 2013; Macdonald, Danielson, Resnick, Saunders, & Kilpatrick, 2010). Early identification of vulnerable cases and efficient access to mental health services can prevent considerable burden on individuals, families and society as a whole (Ben-Ezra, 2004; Ghosh Ippen, Harris, Van Horn, & Lieberman, 2011). Unfortunately, children from developing countries experience considerably more exposure to trauma than those in the developed world (Galea, Nandi, & Vlahov, 2005; Kessler, 2000; Liu et al.; Nantulya, 2003), which makes the development of mental health support in these countries especially salient (Hofman, 2005). The current research aimed to provide some first steps toward addressing these needs within the context of a developing country.

We chose Bangladesh for our work because it has been more than 10 years since the millennium developmental goals were taken into account with few resultant changes to mental health (Miranda & Patel, 2005). Whereas researchers in the developed world have created empirically validated and highly efficacious treatments (Berliner, 2005) and improved the access to such interventions for example, through internet-based services (Amstadter, Broman-Fulks, Zinzow, Ruggiero, & Cercone,

2009), many people and even professionals in Bangladesh still lack basic knowledge about mental health, let alone scientifically based interventions for PTSR (Saraceno et al., 2007). On a positive note, two bigger problems of the country (poverty and disaster) are now beginning to be managed better than before. Models of poverty management and disaster management from Bangladesh are recognized as effective by other countries (Mallick et al., 2005; Yunus, Moingeon, & Lehmann-Ortega, 2010). Innovative and cost-effective physical health management is also now receiving greater research attention (e.g. through microfinance, Pronyk, Hargreaves, & Morduch, 2007). Health indicators are showing improvement, for example, mortality rates in childbirth have been significantly reduced over the last twenty years and the number and quality of support service centres for destitute and abandoned children are improving (Government of People's Republic of Bangladesh, 2012). However, mental health services still lag behind these areas.

Appropriate mental health services for child trauma survivors are desperately needed for the country (Deeba & Mozumder, 2006; Pathan & d'Ardenne, 2010). This is especially the case when the required awareness and motivation to accept and engage in standard long-term interventions are neither practical nor feasible for many families due to poor education and poverty (Syed Masud Ahmed, 2005; Rabbani, 2009). More than 30 million children in Bangladesh come from families living in poverty, most of whose parents are not aware of issues such as child protection and effective parenting. Hence, in addition to the large number of unavoidable natural disasters that occur in Bangladesh, many children from disadvantaged families face additional abuse and maltreatment or fail to be protected by adult supervision (UNICEF, 2009). The research in the current thesis aimed to evaluate some micro-

resources that would potentially be of value for existing child mental health services in the country as well as assisting pathways to building future services. The research included the participation of almost 1400 children and adolescents from different government and non-government support services and schools (rural and urban) in Bangladesh and covered three main components:

- a. The translation and evaluation of psychometrically sound self-report measures to assess children's post-traumatic stress reactions and common internalising problems that can be used in both crises (mass or small –scale) and regular clinical or research work.
- b. Building a knowledge-base of the nature and extent of traumatic events and eventual post-traumatic stress reactions in children from both the general community and support homes in Bangladesh that will be beneficial to better understand children's mental health needs
- c. Evaluation of a cheap, simple and novel treatment program for young children with high levels of psychological symptoms who had experienced severe traumatic events.

Ethical approvals were obtained from each organization and school that participated in our studies. Since there is no central body for granting approval for administering research in Bangladesh, obtaining ethical approval was a difficult task. Invitations to each organisation to participate in the study were both emailed and surface mailed after making phone contact with the organizations. For each organization that expressed interest, an application seeking permission was submitted through proper channels (examples of some permission letters are provided in Appendices S-V). After evaluation of the application the governing bodies of the

schools or boards of directors of the support service organizations commonly asked for face to face meetings with the researcher to obtain more information about the studies, potential harms caused by running the study, information collection methods to be followed, whether detailed discussion will take place to an abusive or traumatic event experienced by a child, if high levels of symptoms are identified in the assessment tasks of the study how researcher will help children to receive appropriate services and similar relevant questions. For the urban schools, each child's participation was consented by a parent. For rural schools consent for a child was given by the class teacher. Children for both rural and urban schools were given an invitation to participate in the study to discuss with their parents. However, before conducting assessment each child's assent was also required.

Summary of Research Results

Assessment of internalising symptoms in children and adolescents

Post-traumatic Stress Disorder (PTSD), anxiety and depression are common psychological reactions among children and adolescents following a traumatic event in both the immediate and longer term. Two studies in this thesis examined the psychometric properties of three widely used measures to assess PTSD, anxiety and depression: the Children's Revised Impact of Events Scale (8 and 13-item Children and War Foundation, 2005)⁵, the Spence Children's Anxiety Scale -20 item (SCAS-20, S. H. Spence, personal communication, July 26, 2010), and the Short Mood and

⁵ The measures used in the current thesis are all free of cost and available via internet from the original copyright holders. For instance, All the versions of CRIES (English and Bangla) used in the study are freely available through the Children and War Foundation's website (<http://www.childrenandwar.org/>). Copies of the measures (both English and Bangla) are added in Appendix E-R.

Feelings Questionnaire, (SMFQ; Angold et al., 1995). We chose these measures because research, primarily from developed countries, has shown them to be brief, reliable and valid and most importantly they are available free of charge. Self-report measures are especially useful to elicit internalising symptoms due to the "hidden" nature of these experiences, as long as children are capable of verbalising their feelings (Lagattuta, Sayfan, & Bamford, 2012).

Importantly, the factor structures of all three measures within the Bangla-speaking sample were almost identical to that shown by children from other cultures (Banh & Banh, 2012; Sharp, Goodyer, & Croudace, 2006; Chen, Zhang, Liu, Liu, & Dyregrov, 2012; Giannopoulou et al., 2006). The 20-item SCAS that we used in this research showed a slightly different factor structure to the full SCAS that has been used in most previous research (38 items; Spence, 1998). Because there has been little prior research using the short version, it is not known whether the inconsistent factor structure was due to differences between cultures or to the different items in the two versions. Despite this technical difference, the higher-order structure found in previous research for the full measure was very similar to the single factor structure that was best supported in the current research, suggesting that the differences were more apparent than real. Overall the largely consistent factor structures between different countries on all measures indicate the universal experience of internalising symptoms and the minimal cultural differences in the children's reports of emotional distress.

Despite the similar factor structure, internal consistencies for the three scales appeared to be slightly lower than that shown in most other studies, although they were still mostly acceptable. Cronbach's alpha in the current study for the CRIES-13

was .74 and for the CRIES-8 it was .60. Studies across several other cultures have shown somewhat higher reliability with alphas on the CRIES-13 ranging from .75-.87 and on the CRIES-8 from .75- .84 (Giannopoulou et al., 2006; Smith, Perrin, Dyregrov, & Yule, 2003; van der Kooij et al., 2013; Zhang, Zhang, Wu, Zhu, & Dyregrov, 2011). Similarly, previous research with the SMFQ reported internal consistencies ranging from .87 to .90 (Angold et al., 1995; Costello, Benjamin, Angold, & Silver, 1991; Kuo, Stoep, & Stewart, 2005) and the only previous evaluation of the SCAS-20 reported an alpha of .89 (Coysh, 2011). These reliabilities were slightly stronger than those in the current study: SMFQ - .80; SCAS-20 - .84. It is important to reiterate that, aside from the CRIES-8, the measures in the current research showed internal consistencies that were within acceptable limits for a psychometrically solid measure and even the CRIES-8 showed a reasonable internal consistency for such a brief measure. Reasons for the slightly lower reliability of the measures are not clear but may reflect the relatively low educational standards of the children or their lack of mental health knowledge and language. On the other hand, it is possible that direct translation of a measure into a different language is not the best method to convert instruments and a slight modification of items to be more culturally relevant may be valuable.

Validity tests for the three measures overall showed good performance to predict the psychological constructs of PTSD, anxiety and depression that we wanted to measure with our sample. Both *construct* and *discriminant validity* of the measures were similar to those reported in other studies. Relationships with demographic factors were consistent with expectations from empirical research. For example, girls reported higher score than boys on all of the scales, consistent with research showing

higher anxiety (Schniering, Hudson, & Rapee, 2000), depression (Angold & Costello, 2006; Angold et al., 1996) and PTSD (Bulut & Yule, 2000; Davis, 2000) among females. All three measures were able to clearly distinguish extreme groups within the larger sample demonstrating *discriminant validity*. Hence the measures will be valuable within Bangla-speaking communities not only for the purpose of screening for psychological problems in children, but also to assess and monitor relevant psychological symptoms during regular interventions or crisis management.

Mental health problems are a matter of weak personalities” is one of the many common stigmatized ideas towards mental illness among people worldwide. Studies conducted in the developed world showed that such stigmatising attitudes are held not only by the general population (Bhugra, 1989; Brockington, Hall, Levings, & Murphy, 1993; Greenley, 1984; Hamre, Dahl, & Malt, 1994; Link, 1987; Madianos, Madianou, Vlachonikolis, & Stefanis, 1987; Phelan, Link, Stueve, & Pescosolido, 2000; Rabkin, 1974; Roman & Floyd, 1981) but also among the most highly trained health professionals (Lyons & Ziviani, 1995; Mary Keane, 1990; Mirabi, Weinman, & Magnetti). The existence of such stigmatising attitudes in the developed world limits individual’s support-seeking behaviour (Jorm, 2000; Vogel, Wade, & Hackler, 2007). In developing countries where understanding of many physical health conditions is not well-understood by the population, it is likely attitudes towards mental health problems are especially negative and unhelpful to produce change (Saraceno et al., 2007; World Health Organization, 2005). Due to stigma people with mental health illness experience discrimination in various aspects of life (Corrigan & Watson, 2002). Young people have been found to develop stigmatizing attitude and behave differently with peers with mental disorders (Jorm

& Wright, 2008). Since negative views towards mental health problems are deeply rooted in the acceptance or rejection of expressions of disorder, it is possible that these attitudes may influence the way people (both youth and adults) respond to psychometric measures. In our psychometric papers there were no obvious differences in the response patterns of the Bangladeshi children compared with other countries. In particular the patterns of responses seemed especially similar to those found in other developing countries. Therefore any influence from stigma, or other attitudinal factors is likely to be similar across developing countries

Prevalence of traumatic experiences and psychological symptoms in Bangladeshi children

Chapter 4 reported a study that examined the nature and extent of trauma exposure and mental health symptoms among children and adolescents from Bangladesh. To simplify outcomes, common traumatic events were categorised into three main types; natural, accidental and man-made. These events differed in terms of the degree of involvement of human acts and by their intention (intentional and unintentional). Sadly, the results indicated that almost all children in the sample had experienced at least one traumatic event (either directly or witnessed) and there was little difference between children from the community and those from social service centres in overall reporting of trauma. The high level of reported trauma paralleled findings from disadvantaged communities in South Africa indicating exposure to traumatic events among children ranging from 80-100% for both rural and urban areas (Fincham, Korthals, Stein, & Seedat, 2009; Kaminer, du Plessis, Hardy, & Benjamin, 2013). However, when the specific types of traumatic events were examined, some interesting differences between the two sub-samples emerged.

Community children were more likely to directly experience a natural traumatic event than at-risk children, whereas at-risk children were more likely to directly experience both human-generated traumatic events, accidents and man-made. The geological location of Bangladesh makes it vulnerable to different natural disasters including flood, cyclone, tornado, river erosion, earthquake, or drought (Khan, 2008). Injuries due to transportation accidents, drowning and burns, as well as intentional traumas such as violence, rape, and acid attacks are also all-too common in the lives of Bangladeshi children (Linnan et al., 2007; Mashreky et al., 2008; Mueser & Taub, 2008; Aminur Rahman, 2005). The different reports by the two sub-groups of children about the types of traumatic experiences may reflect a combination of reporting biases and demographic factors. Children who reside in social support centres were more likely to be female and uneducated and to come from broken homes. These demographic characteristics are likely to have increased their risk of exposure to human-created traumas, especially those of intent. On the other hand, the especially difficult lives of these children may have reduced the impact of natural events such as floods or drought making them somewhat less likely to report these events as "traumas".

The findings from this study also indicated poor mental health, particularly of the children living in support services. Given the high disadvantage of this group and the high number of intentional human-created traumas they experienced, their reports of high symptom levels are not surprising (Izutsu et al., 2006; Suliman et al., 2009). Consistent with this suggestion, age, gender, group affiliation, education and work status and direct exposure to man-made traumatic events proved to significantly

predict levels of emotional distress. Similar predictors have been reported in other studies (Trickey, Siddaway, Meiser-Stedman, Serpell, & Field, 2012).

A brief, inexpensive intervention for traumatized children in Bangladesh

Psychological interventions for post-trauma reactions in young people have been shown to be both efficacious and cost-effective in a large number of randomised controlled trials (Gospodarevskaya & Segal, 2012). Unfortunately, randomized controlled trials are difficult to organize and fund in developing countries. In a country like Bangladesh, that makes use of many non-government organisations to care for children at risk, quasi-experimental designs can offer a viable alternative to fit within the mandates of these organizations (Handley, Schillinger, & Shiboski, 2011). Further, the majority of empirically validated interventions for post-trauma reactions currently require considerable resources, including large numbers of sessions, highly trained workforce, or significant investment in infrastructure (such as internet program development). Given the lack of resources and motivation to deal with mental health issues, developing countries need very affordable interventions to redress paediatric trauma (Mock, Denno, & Adzotor, 1993). Therefore, the final empirical study in this thesis evaluated an innovative intervention that incorporated many qualities that showed “goodness of fit” for the needs of poorly resourced Bangladesh. The intervention was based on an earlier procedure implemented by Sadeh, Hen-Gal, and Tikotzky (2008) with children under war and involved encouraging children to engage with a small stuffed toy. Importantly, this procedure was inexpensive, easy to administer, brief, and could be delivered within the structures of a service organisation by minimally trained staff.

The program used in this study was slightly modified from the intervention delivered by Sadeh and colleagues for two reasons: 1. The context for the current intervention was quite different from the original that was conducted under the imminent threat of war. The high level fear and displacement experienced by the children in that context would likely have given them a stronger incentive to engage with the toy than in the current, more settled situation. 2. A wealth of research has shown that negative psychological symptoms following trauma are especially predicted by negative beliefs related to the world, self, and future (Bücker et al., 2012; Dalgleish, Meiser-Stedman, & Smith, 2005). Therefore it was predicted that specifically targeting and reversing these beliefs may increase the efficacy of the intervention. Overall, the results showed that the combined intervention was efficacious and reduced reported symptoms to a modest degree ($\eta_p^2=.04$). In addition, there was some indication (within the limitations of a quasi-experimental design) that the addition of the positive beliefs increased the efficacy slightly over the original (toy only) intervention.

Allhusen et al., (2005) mentioned that poverty impedes the normal development of children and the family. Stress associated with poverty creates competing difficulties for parents that can lead to marital problems, less positive parenting and poor parent-child interaction (Sobolewski & Amato, 2005). The techniques incorporated in the modified intervention allow activation of two important components of optimal caregiving. First, they provide the scope to involve *proactive education interactions* (Olson, Bates and Kaskie, 1992) and second, age appropriate *parental responsiveness* (Heermann, Jones & Wikoff, 1994) towards the feelings and needs of the child. Although this study did not include a randomised

controlled design and involved only two organisations, the results show some promise that interventions such as this may provide future benefits for distressed young children from impoverished backgrounds in poor nations.

Implications of the research

The studies conducted through this project hold a number of potentially useful theoretical and practical implications for progression of the understanding and management of trauma-related mental health issues among young people in Bangladesh.

Until now, there have been no reliable and brief self-report measures to assess clinical symptoms of post-traumatic stress reactions and related emotional distress in Bangladesh for children and adolescents. In April 2013 workers from two garment factories were severely traumatised following a building collapse in one and fire in another (Reuters, 2013). As is typical in these events, the majority of workers were below 18 years of age. Although news reports have not followed, it is very unlikely that the traumatised survivors received any assessment or evaluation of their mental health. The measures that were translated and evaluated in the current research will be of value in future crises to allow careful assessment of emotional distress and to identify potential cases of disorder (I. S. Shermin, personal communication, 2013). Assessment and identification of anxiety, depression and post-traumatic symptoms will be the first step in getting appropriate services to these young workers.

Apart from the use of these measures in crisis situations, they will also be helpful for clinicians to assess symptoms in regular treatment seeking populations or by researchers for use in cross-sectional or epidemiological studies. An additional advantage of the use of standardised and reliable self-report measures is that they can

be administered by semi-skilled professionals. Such flexibility is especially valuable in a developing country like Bangladesh where high level, psychological training is still in transition and in many areas, especially poor rural regions, psychological expertise does not exist. The ability to deliver these measures without high level psychological training also facilitates the interaction of multidisciplinary networks. The measures allow local professionals with lower expertise to identify cases and refer to more specialised professionals as appropriate. For instance, introducing the psychometric measures into paediatric injury and emergency health services, even in remote rural areas may assist with identifying potential cases as early as possible.

Our prevalence study in Chapter 4 indicates that the children and adolescents of Bangladesh are highly vulnerable to experience traumatic events and to experience psychological symptoms. They are therefore, in great need of effective mental health support. After working with various post-disaster populations from various communities for many years, McFarlane and Williams (2012) strongly suggested that psychosocial support services should be an integrated part of management initiatives not only immediately around the disaster but also on a long-term basis for survivors. Our study therefore highlights the need for government, non-government or international aid agencies to care for the mental health of future citizens of the country. Moreover, building a professional workforce to provide management of psychological stress is clearly an urgent priority. Professional skills desperately need to be enhanced, given evidence that current health professionals in the country are not all capable of management of populations affected by trauma (S. M. Ahmed, 2011; Pathan & d'Ardenne, 2010; Welfare, 2006).

The findings on the prevalence of traumatic events in the lives of Bangladeshi children warrant immediate action to raise awareness among both the general

population and health professionals. Scaling up awareness development programs on the impact of trauma on child and adolescent mental health along with specialised training for professionals, educators and policy makers will be important in coming years. At the same time, public health programs are needed to reduce stigma associated with trauma-related distress as well as the experience of particular events such as gender-based violence or abuse. Such campaigns can hopefully reduce many of the common barriers present in developing communities (Alagaratnam, 1984; Jorm, 2000; Saraceno et al., 2007).

Most importantly, the intervention that was evaluated in this program was especially inexpensive. Delivery of the toy cost less than \$US1 and it was produced by local manufacturers with local materials. The instructions for cognitive enhancement were very simple and can be made available in printed or electronic form and they were easily able to be delivered by the existing low-skilled carers. Thus this intervention could have a good chance of continued sustainability and should help semi-skilled professionals to provide at least some assistance to children. These factors are particularly important given the large gap between the number of mental health professionals and needs for support in Bangladesh (S. M. Ahmed, 2011; Bruckner et al., 2011). Ultimately, the low expense and practical viability of the intervention should encourage the Bangladeshi Government and non-government support organizations to provide the minimal resources to support continued delivery of this intervention throughout social support services across the country. Although the effects may not be large, this small increment, delivered population-wide, would make both a major direct impact on children's mental health and would also serve to raise awareness and acceptability of the importance of mental health interventions.

A broader implication of this research project lies in the way in which it was structured and the potential for this structure to provide a model for future research into mental health needs and service improvements among children in many developing countries. The overarching thesis began with a focus on improving assessment, then used these tools to gain a better understanding of the scope of the problem, and finally evaluated a brief method to intervene and improve mental health among children. All of these steps were delivered within the constraints imposed by the barriers and practical difficulties found in poorly resourced communities. Hence this model provides a moderately structured framework to address some of the key needs and current limitations found within existing mental health services in developing countries (Patel, Flisher, et al., 2007; Patel et al., 2008; Atif Rahman, Mubbashar, Harrington, & Gater, 2000).

Limitations and recommendations for future research

The lack of sampling using fully randomised and population-representative methods is a major limitation of all of these studies. Even though large samples were recruited, the lack of a community-representative sample means that the research was not able to provide norms for the psychometric measures and the assessed prevalence of traumatic experiences may be sample-specific, thereby limiting their use across the country. A related limitation was the lack of a clinical population to validate the measures against so that cut-off scores and associated sensitivity and specificity could not be calculated. The prevalence study was also based on retrospective report from participants in many cases from several years into the past thereby limiting the reliability and possibly validity of the data and opening them to biases in memory and salience.

In addition to the lack of randomisation in the intervention study, the follow-up period was quite brief and we also failed to keep track of certain potentially important indicators of improvements. For instance, following the intervention caregivers and staff reported that children showed improvements in several physiological characteristics as well, as eating and sleeping patterns, and listening and attending habits. These are especially important outcomes since they reflect more "objective" changes and have a particular impact on quality of life. Hence their change with the intervention would have provided especially important support for its efficacy. Future research would benefit by including a broader range of outcome measures and in particular assessing such overt behavioural changes and would also benefit from a longer period of follow-up to assess the longer-term impacts of such a simple manipulation.

On the other hand, several strengths of the research and sampling help to increase acceptance of the main findings. First, the work was conducted in an especially poorly resourced and disadvantaged country increasing the importance and salience of the results. Permission was obtained from a large number of schools and service organisations that led to a very large sample. Importantly, the sampling included both community and "at-risk" young people from a number of sites across the country and covered children from both rural and urban as well as slum and non-slum areas. Hence, although the sample was not stratified to directly represent the whole of the Bangladeshi population, the broad range of inclusion and the sampling from several key sub-populations, means that the results most likely reflect the general experiences of young people in Bangladesh.

Future studies would benefit from the resources to conduct properly stratified, longitudinal studies with children and adolescent survivors of various natural disasters, accidents, and man-made disasters in order to better understand the direct impact of trauma on development of psychological symptoms as well as social and occupational functioning within poorer communities. Future research should also evaluate more targeted and efficacious interventions that build upon the very simple and brief intervention described here to increase efficacy, while retaining several of the current study's benefits. Evaluation within randomised controlled trials of some of the established efficacious interventions for post-trauma reactions within the Bangladeshi context would also be valuable to increase the range of options and to provide available treatments for more severe clinical cases. Given that developing and evaluating standard methods of treatment will require considerable time and resources, it will also be important to adapt several innovative methods of intervention in the short term, including internet or mobile phone delivery systems to allow broad access by a large proportion of the Bangladeshi population.

Conclusion

Despite several limitations this research has potential importance in the context of the developing world. Several experts have suggested various approaches to meet mental health needs in developing countries (Patel et al., 2008; Atif Rahman et al., 2000). To reduce the huge gap between existing needs and provision of services, there is a need for increased numbers of professionals, greater sharing of information on assessment and intervention methods to multidisciplinary professionals, the inclusion of other health professionals, and mental health workers, and tackling the possible outbreak of disorders by identifying probable risk factors.

However appropriate these suggestions are, their implementation requires substantial investment from government, including allocation of sizeable budgets to conduct local research, delivery of training in assessment and treatment for inter-disciplinary professionals, and the establishment of specialised mental health services. Preparing, developing and sustaining such far-reaching goals will necessitate experienced professionals along with substantial time and money. In the meantime, simpler and more localised stopgap measures need to be available to deliver assistance to those in need. The measures and intervention utilized in the current research may provide one such direction.

Scientists enrich the world by creating new knowledge and developing new technologies. These developments progress society and improve quality of life. However while the pursuit of new discoveries is a valuable aspiration, it is easy to forget to evaluate the utilisation of these new findings to the full range of the world's societies. Research that addresses the modification and application of international advances to the context of specific developing countries is essential to raise quality of life right across the globe. In this way, it is hoped that the current project has made a small but important contribution to improving the lives of the children and adolescents of Bangladesh.

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Appendices

Appendix A

Factor loadings for SMFQ items obtained in MCFA

The factor loadings for the factor to items ranged from .27-.55, .34-.63, .30-.56 and .35-.60 for community-boy, community-girl, at-risk-boy and at-risk-girl group respectively. Only for Item 2 (I did not enjoy anything at all) the factor (depression) was loaded lower than .30 for community-boy group in the multiple group analysis. Factor loadings ranged from .35-.61, .35-.63, .35-.58 and .65-.52 for community-younger, community-older, at-risk-younger and at-risk-older respectively. None of the factor loadings were below .30.

Appendix B

Table for the amount of children of two sub-samples (community and at-risk) of specific traumatic event

Variables		Community (N=583, 100%)	At-risk (N= 777, 100%)
<i>Types of trauma (both direct and indirect; N, % of group total)</i>			
<i>Natural</i>		460, 78.91%	535, 68.90%
	Flood	303, 52.06%	383, 49.74%
	Cyclone	147, 25.26%	204, 26.49%
	Tornado	21, 3.61%	58, 7.54%
	Avalanches	52, 8.93%	114, 14.82%
	Arsenic exposure	47, 8.09%	78, 10.14%
	Suffering from terminal disease	111, 19.10%	123, 18.22%
	Natural others	139, 23.88%	213, 27.73%
<i>Accidental</i>		512, 87.82%	663, 85.33%
	Hit by a road transport vehicle	279, 47.94%	409, 53.26%
	Boat or launch accidents	135, 23.20%	200, 26.08%
	Train/plane accidents	33, 5.67%	96, 12.48%
	Building	128, 21.99%	197, 25.65%

	collapse		
	Fire	179, 30.81%	299, 38.88%
	Fall from highs	83, 14.26%	175, 22.76%
	Drowning	256, 43.99%	356, 46.35%
	Explosions	40, 6.87%	61, 7.93%
	Accidental others	27, 4.64%	57, 2.41%
<i>Man-made</i>		523, 89.71%	690, 88.80%
	Hit by others physical hits	350, 60.14%	465, 69.09%
	Hit with an weapon	171, 29.48%	260, 38.58%
	Suffocate	0, .00%	5, 0.61%
	Attempt to kill	57,, 9.65%	120, 15.51%
	Acid attack	24, 4.12%	42, 6.21%
	Bombing	19, 3.29%	14, 2.11%
	Verbal abuse	318, 54.71%	413, 61.33%
	Bullying (peers)	171, 29.48%	253, 38.58%
	Threat to hurt	101, 17.41%	170, 25.21%
	Stalked	87, 15.00%	175, 26.01%
	(other than eve teasing purpose)		
	Eve teased	73, 12.64%	119, 17.73%

Sexual abuse (penetrative)	73, 12.61%	119, 17.73%
Sexual abuse (non- penetrative)	46, 7.91%	182, 23.91%
Trafficked	33, 5.74%	125, 16.38%
Mugged/ robbed	100, 17.19%	191, 25.13%
Man-made others	30, 2.48%	30, 2.48%

Appendix C

Ethics Approval from Macquarie University Human Research Ethics

Committee (Ref: 5201001017)

----- Forwarded message -----

From: **Ethics Secretariat** <ethics.secretariat@mq.edu.au>

Date: Fri, Nov 5, 2010 at 10:47 AM

Subject: Ethics application reference-5201001017- Final approval

To: Prof Ron Rapee <ron.rapee@mq.edu.au>

Cc: Ms Farah Deebea <farah.deeba@mq.edu.au>

Dear Prof Rapee

Re: "Trauma-specific negative cognitions in children and adolescents" (Ref: 5201001017)

The above application was reviewed by the Human Research Ethics Committee. Final Approval of the above application is granted, effective 05 November 2010, and you may now commence your research.

The following personnel are authorised to conduct this research:

Prof Ron Rapee- Chief Investigator/Supervisor
Ms Farah Deebea- Co-Investigator

Please note the following standard requirements of approval:

1. The approval of this project is conditional upon your continuing compliance with the National Statement on Ethical Conduct in Human Research (2007).
2. Approval will be for a period of five (5) years subject to the provision of annual reports. Your first progress report is due on 05 November 2011.

If you complete the work earlier than you had planned you must submit a Final Report as soon as the work is completed. If the project has been discontinued or not commenced for any reason, you are also required to submit a Final Report for the project.

Progress reports and Final Reports are available at the following website:

http://www.research.mq.edu.au/for/researchers/how_to_obtain_ethics_approval/human_research_ethics/forms

3. If the project has run for more than five (5) years you cannot renew approval for the project. You will need to complete and submit a Final Report and submit a new application for the project. (The five year limit on renewal of approvals allows the Committee to fully re-review research in an environment where legislation, guidelines and requirements are continually changing, for example, new child protection and privacy laws).

4. All amendments to the project must be reviewed and approved by the Committee before implementation. Please complete and submit a Request for Amendment Form available at the following website:

http://www.research.mq.edu.au/for/researchers/how_to_obtain_ethics_approval/human_research_ethics/forms

5. Please notify the Committee immediately in the event of any adverse effects on participants or of any unforeseen events that affect the continued ethical acceptability of the project.

6. At all times you are responsible for the ethical conduct of your research in accordance with the guidelines established by the University. This information is available at the following websites:

<http://www.mq.edu.au/policy/>

http://www.research.mq.edu.au/for/researchers/how_to_obtain_ethics_approval/human_research_ethics/policy

If you will be applying for or have applied for internal or external funding for the above project it is your responsibility to provide the Macquarie University's Research Grants Management Assistant with a copy of this email as soon as possible. Internal and External funding agencies will not be informed that you have final approval for your project and funds will not be released until the Research Grants Management Assistant has received a copy of this email.

If you need to provide a hard copy letter of Final Approval to an external organisation as evidence that you have Final Approval, please do not hesitate to contact the Ethics Secretariat at the address below.

Please retain a copy of this email as this is your official notification of final ethics approval.

Yours sincerely
Dr Karolyn White
Director of Research Ethics
Chair, Human Research Ethics Committee

Appendix-D

Ethics Approval from Macquarie University Human Research Ethics

Committee (Ref: 5201100595)

----- Forwarded message -----

From: **Ethics Secretariat** <ethics.secretariat@mq.edu.au>

Date: Mon, Oct 31, 2011 at 8:49 AM

Subject: Final Approval- Ethics application reference-5201100595 (D)

To: Prof Ron Rapee <ron.rapee@mq.edu.au>

Cc: Ms Farah Deeba <farah.deeba@students.mq.edu.au>

Dear Prof Rapee

Re: "Evaluation of an innovative intervention for traumatised children in low resourced countries" (Ethics Ref: 5201100595)

The above application was reviewed by the Human Research Ethics Committee at its meeting on 22-Jul-11 . Final Approval of the above application is granted, effective 31 October 2011, and you may now commence your research.

The following personnel are authorised to conduct this research:

Prof Ron Rapee- Chief Investigator/Supervisor

Ms Farah Deeba- Co-Investigator

NB. STUDENTS: IT IS YOUR RESPONSIBILITY TO KEEP A COPY OF THIS APPROVAL EMAIL TO SUBMIT WITH YOUR THESIS.

Please note the following standard requirements of approval:

1. The approval of this project is conditional upon your continuing compliance with the National Statement on Ethical Conduct in Human Research (2007).
2. Approval will be for a period of five (5) years subject to the provision of annual reports. Your first progress report is due on 31 April 2012.

If you complete the work earlier than you had planned you must submit a Final Report as soon as the work is completed. If the project has been discontinued or not commenced for any reason, you are also required to submit a Final Report for the project.

Progress reports and Final Reports are available at the following website:

http://www.research.mq.edu.au/for/researchers/how_to_obtain_ethics_approval/human_research_ethics/forms

3. If the project has run for more than five (5) years you cannot renew approval for the project. You will need to complete and submit a Final Report and submit a new application for the project. (The five year limit on renewal of approvals allows the Committee to fully re-review research in an environment where legislation, guidelines and requirements are continually changing, for example, new child protection and privacy laws).

4. All amendments to the project must be reviewed and approved by the Committee before implementation. Please complete and submit a Request for Amendment Form available at the following website:

http://www.research.mq.edu.au/for/researchers/how_to_obtain_ethics_approval/human_research_ethics/forms

5. Please notify the Committee immediately in the event of any adverse effects on participants or of any unforeseen events that affect the continued ethical acceptability of the project.

6. At all times you are responsible for the ethical conduct of your research in accordance with the guidelines established by the University. This information is available at the following websites:

<http://www.mq.edu.au/policy/>

http://www.research.mq.edu.au/for/researchers/how_to_obtain_ethics_approval/human_research_ethics/policy

If you will be applying for or have applied for internal or external funding for the above project it is your responsibility to provide the Macquarie University's Research Grants Management Assistant with a copy of this email as soon as possible. Internal and External funding agencies will not be informed that you have final approval for your project and funds will not be released until the Research Grants Management Assistant has received a copy of this email.

If you need to provide a hard copy letter of Final Approval to an external organisation as evidence that you have Final Approval, please do not hesitate to contact the Ethics Secretariat at the address below.

Please retain a copy of this email as this is your official notification of final ethics approval.

Yours sincerely
Dr Karolyn White
Director of Research Ethics
Chair, Human Research Ethics Committee

Appendix –E

Children's Revised Impact of Event Scale 13 (CRIES-13)

THE CHILDREN'S IMPACT OF EVENT SCALE (13) CRIES-13

Revised Child Impact of Event Scale

Below is a list of comments made by people after stressful life Event. Please tick each item showing how frequently these comments were true for you during the past seven days. If they did not occur during that time please tick the 'not at all' box.

Name: Date:

						Office use only		
		Not at all	Rarely	Sometimes	Often	In	Ar	Ar
1.	Do you think about it even when you don't mean to?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			
2.	Do you try to remove it from your memory	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			
3.	Do you have difficulties paying attention or concentrating	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			
4.	Do you have waves of strong feelings about it	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			
5.	Do you startle more easily or feel more nervous than you did before it happened?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			
6.	Do you stay away from reminders of it (e.g. places or situations)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			
7.	Do you try not talk about it	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			
8.	Do pictures about it pop into your mind?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			
9.	Do other things keep making you think about it?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			
10.	Do you try not to think about it?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			
11.	Do you get easily irritable	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			
12.	Are you alert and watchful even when there is no obvious need to be?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			
13.	Do you have sleep problems?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			
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Appendix-F

Children's Revised Impact of Event Scale -13-Bangla (CRIES-13 –Bangla)

Children's Revised Impact of Event Scale -13-Bangla (CRIES-13 –Bangla)

জীবনে খুব দুঃখজনক ঘটনা ঘটে থাকলে অনেকসময় নীচের তালিকার কথাগুলো মানুষের মনে আসে। অনুগ্রহ করে তোমার নিজের ক্ষেত্রে এই কথাগুলো গত সাতদিনের জন্য কতখানি সত্য মনে হয় তা ডান পাশের ঘরে টিক (✓) চিহ্ন দিয়ে নির্দেশ করো। যদি এগুলো গত সাতদিনে তোমার মনে না এসে থাকে তাহলে “একদম না” ঘরে টিক (✓) দাও।

		একদম না	খুব কম	মাঝে মাঝে	প্রায়ই
১	তুমি যখন চাও না তখনও কি তোমার ঘটনাটি মনে পড়ে?	[]	[]	[]	[]
২	তুমি কি তোমার স্মৃতি থেকে ঘটনাটি মুছে ফেলার চেষ্টা করো?	[]	[]	[]	[]
৩	তোমার কি মনোযোগ দিতে বা মনোযোগ ধরে রাখতে সমস্যা হয়?	[]	[]	[]	[]
৪	তোমার কি থেকে থেকে ঘটনাটি নিয়ে খুব কষ্ট হয়?	[]	[]	[]	[]
৫	তুমি কি ঘটনাটি ঘটায় আগের চাইতে এখন খুব সহজে চমকে ওঠো বা নার্ভাস বোধ করো?	[]	[]	[]	[]
৬	তুমি কি ঘটনাটি মনে করিয়ে দেয় এমন বিষয়গুলো (যেমন- কোন জায়গা বা পরিস্থিতি) এড়িয়ে চলো?	[]	[]	[]	[]
৭	তুমি কি ঘটনাটি নিয়ে কথা না বলার চেষ্টা করো?	[]	[]	[]	[]
৮	তোমার মনে কি হঠাৎ ঐ ঘটনাটির ছবি ভেসে ওঠে?	[]	[]	[]	[]
৯	অন্যান্য সবকিছু কি তোমাকে ঐ ঘটনাটি নিয়ে ভাবিয়ে তোলে?	[]	[]	[]	[]
১০	তুমি কি সেটা না ভাবার চেষ্টা করো?	[]	[]	[]	[]
১১	তুমি কি সহজেই বিরক্ত হয়ে ওঠো?	[]	[]	[]	[]
১২	যখন কোন স্পষ্ট কারণ নেই তখনও কি তুমি সতর্ক আর পাহাড়ায়ত থাকো?	[]	[]	[]	[]
১৩	তোমার কি ঘুমের সমস্যা আছে?	[]	[]	[]	[]

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Translated By: Farah Deeba

Appendix-G

Children's Revised Impact of Event Scale 8 (CRIES-8)

C-IES-8

Revised Child Impact of Events Scale

Below is a list of comments made by people after stressful life events. Please tick each item showing how frequently these comments were true for you *during the past seven days*. If they did not occur during that time please tick the 'not at all' box.

Name:

Date:

	Not at all	Rarely	Sometimes	Often
1. Do you think about it even when you don't mean to?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Do you try to remove it from your memory	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Do you have waves of strong feelings about it	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Do you stay away from reminders of it (e.g. places or situations)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Do you try not talk about it	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Do pictures about it pop into your mind?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Do other things keep making you think about it?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. Do you try not to think about it?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

In	Av

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Appendix-H

Children's Revised Impact of Event Scale 8- Bangla (CRIES-8 –Bangla)

THE CHILDREN'S IMPACT OF EVENT SCALE- 8-BANGLA (CRIES-8-Bangla)

জীবনে খুব দুঃখজনক ঘটনা ঘটে থাকলে অনেকসময় নীচের তালিকার কথাগুলো মানুষের মনে আসে। অনুগ্রহ করে তোমার নিজের ক্ষেত্রে এই কথাগুলো গত সাতদিনের জন্য কতখানি সত্য মনে হয় তা ডান পাশের ঘরে টিক (✓) চিহ্ন দিয়ে নির্দেশ করো। যদি এগুলো গত সাতদিনে তোমার মনে না এসে থাকে তাহলে “একদম না” ঘরে টিক (✓) দাও।

		একদম না	খুব কম	মাঝে মাঝে	প্রায়ই
১	তুমি যখন চাও না তখনও কি তোমার ঘটনাটি মনে পড়ে?	[]	[]	[]	[]
২	তুমি কি তোমার স্মৃতি থেকে ঘটনাটি মুছে ফেলার চেষ্টা করো?	[]	[]	[]	[]
৩	তোমার কি থেকে থেকে ঘটনাটি নিয়ে খুব কষ্ট হয়?	[]	[]	[]	[]
৪	তুমি কি ঘটনাটি মনে করিয়ে দেয় এমন বিষয়গুলো (যেমন- একটি জায়গা বা পরিস্থিতি, কোন মানুষ) এড়িয়ে চলো?	[]	[]	[]	[]
৫	তুমি কি ঘটনাটি নিয়ে কথা না বলার চেষ্টা করো?	[]	[]	[]	[]
৬	তোমার মনে কি হঠাৎ ঐ ঘটনার ছবি ভেসে ওঠে?	[]	[]	[]	[]
৭	অন্যান্য সবকিছু কি তোমাকে ঐ ঘটনাটি নিয়ে ভাবিয়ে তোলে?	[]	[]	[]	[]
৮	তুমি কি সেই ঘটনাটি না ভাবার চেষ্টা করো?	[]	[]	[]	[]

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(Translated by, Farah Deeba)

Appendix-I

Spence Children's Anxiety Scale 20 (SCAS-20)

SHORT FORM SPENCE CHILDREN'S ANXIETY SCALE

Your Name: Date:

PLEASE PUT A CIRCLE AROUND THE WORD THAT SHOWS HOW OFTEN EACH OF THESE THINGS HAPPEN TO YOU. THERE ARE NO RIGHT OR WRONG ANSWERS.

1. I worry about things.....	Never	Sometimes	Often	Always
2. When I have a problem, I get a funny feeling in my stomach.....	Never	Sometimes	Often	Always
3. I feel scared when I have to take a test.....	Never	Sometimes	Often	Always
4. I feel afraid that I will make a fool of myself in front of people.....	Never	Sometimes	Often	Always
5. I worry that I will do badly at my school work.....	Never	Sometimes	Often	Always
6. I worry that something awful will happen to someone in my family.....	Never	Sometimes	Often	Always
7. I suddenly feel as if I can't breathe when there is no reason for this.....	Never	Sometimes	Often	Always
8. I feel scared if I have to sleep on my own.....	Never	Sometimes	Often	Always
9. I have trouble going to school in the mornings because I feel nervous or afraid.....	Never	Sometimes	Often	Always
10. I can't seem to get bad or silly thoughts out of my head.....	Never	Sometimes	Often	Always
11. I worry that something bad will happen to me.....	Never	Sometimes	Often	Always
12. When I have a problem, I feel shaky.....	Never	Sometimes	Often	Always
13. I have to think of special thoughts to stop bad things from happening (like numbers or words).....	Never	Sometimes	Often	Always
14. I worry what other people think of me.....	Never	Sometimes	Often	Always
15. All of a sudden I feel really scared for no reason at all.....	Never	Sometimes	Often	Always
16. My heart suddenly starts to beat too quickly for no reason.....	Never	Sometimes	Often	Always
17. I worry that I will suddenly get a scared feeling when there is nothing to be afraid of.....	Never	Sometimes	Often	Always
18. I get bothered by bad or silly thoughts or pictures in my mind.....	Never	Sometimes	Often	Always
19. I have to do some things in just the right way to stop bad things happening.....	Never	Sometimes	Often	Always
20. I would feel scared if I had to stay away from home overnight.....	Never	Sometimes	Often	Always

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Appendix-J

Spence Children's Anxiety Scale-20 Bangla (SCAS-20-Bangla)

SHORT FORM SPENCE CHILDREN'S ANXIETY SCALE

SPENCE CHILDREN'S ANXIETY SCALE 20 BANGLA (SCAS-20-BANGLA)					
		অনুগ্রহ করে বাঁ-পাশের বিষয়টি জোনার ক্ষেত্রে যতবার হয় তা ডান পাশের যে শব্দটি দিয়ে সঠিকভাবে প্রকাশ করে সেটিকে বৃত্তে একে চিহ্নিত করো। এখানে সঠিক বা ভুল উত্তর বলে কিছু নেই।			
১	আমার কেবল দুঃচিন্তা হয়	কখনই হয় না	মাঝে মাঝে হয়	প্রায়ই হয়	সবসময় হয়
২	আমার কোন সমস্যা হলে আমার পেটে কেমন অদ্ভুত অনুভূতি হয়	কখনই হয় না	মাঝে মাঝে হয়	প্রায়ই হয়	সবসময় হয়
৩	পরীক্ষা দিতে হলে আমার ভয় লাগে	কখনই হয় না	মাঝে মাঝে হয়	প্রায়ই হয়	সবসময় হয়
৪	আমি অন্যদের সামনে নিজেকে বোকা বানাবো ভেবে ভয় পাই	কখনই হয় না	মাঝে মাঝে হয়	প্রায়ই হয়	সবসময় হয়
৫	আমি আমার স্কুলের কাজে খুব ব্যাধাপ করবো ভেবে দুঃচিন্তায় থাকি	কখনই হয় না	মাঝে মাঝে হয়	প্রায়ই হয়	সবসময় হয়
৬	আমার পরিবারের কারো সাথে ব্যাধাপ কোনকিছু ঘটবে ভেবে আমি দুঃচিন্তায় থাকি	কখনই হয় না	মাঝে মাঝে হয়	প্রায়ই হয়	সবসময় হয়
৭	কোন কারণ ছাড়াই হঠাৎ আমার শ্বাস নিতে পারছি না বলে মনে হয়	কখনই হয় না	মাঝে মাঝে হয়	প্রায়ই হয়	সবসময় হয়
৮	আমাকে একা ঘুমাত্তে হলে আমি ভয় পাই	কখনই হয় না	মাঝে মাঝে হয়	প্রায়ই হয়	সবসময় হয়
৯	নার্ভাস বা ভয় লাগার কারণে সকালে স্কুলে যাবার সময় আমার সমস্যা হয়	কখনই হয় না	মাঝে মাঝে হয়	প্রায়ই হয়	সবসময় হয়
১০	আমি মাথা থেকে বাজে আর তুচ্ছ চিন্তাগুলো সরাতে পারি না	কখনই হয় না	মাঝে মাঝে হয়	প্রায়ই হয়	সবসময় হয়
১১	আমার সাথে ব্যাধাপ কিছু ঘটবে বলে দুঃচিন্তা হয়	কখনই হয় না	মাঝে মাঝে হয়	প্রায়ই হয়	সবসময় হয়
১২	যখন আমার কোন সমস্যা হয় তখন আমি বিচলিত বোধ করি	কখনই হয় না	মাঝে মাঝে হয়	প্রায়ই হয়	সবসময় হয়
১৩	ব্যাধাপ কিছু ঘটনা আমাকে বিশেষ ধরনের চিন্তা মনে আনতে হয় (যেমন: সংখ্যা বা শব্দ)	কখনই হয় না	মাঝে মাঝে হয়	প্রায়ই হয়	সবসময় হয়
১৪	অন্যরা আমাকে নিয়ে কি ভাবছে তা নিয়ে আমি দুঃচিন্তায় থাকি	কখনই হয় না	মাঝে মাঝে হয়	প্রায়ই হয়	সবসময় হয়
১৫	কোন কারণ ছাড়াই হঠাৎ আমি সত্যি ভীতবোধ করি	কখনই হয় না	মাঝে মাঝে হয়	প্রায়ই হয়	সবসময় হয়
১৬	কোন কারণ ছাড়াই হঠাৎ আমার হৃদস্পন্দন খুব দ্রুত হতে থাকে	কখনই হয় না	মাঝে মাঝে হয়	প্রায়ই হয়	সবসময় হয়
১৭	ভয় পাবার মত কিছু না থাকলেও আমি হঠাৎ সম্ভ্রান্তবোধ করতে পারি বলে আমার দুঃচিন্তা হয়	কখনই হয় না	মাঝে মাঝে হয়	প্রায়ই হয়	সবসময় হয়
১৮	আমার মনে আসা বাজে অথবা তুচ্ছ চিন্তা/ ছবিগুলো আমাকে খুব বিরক্ত করে	কখনই হয় না	মাঝে মাঝে হয়	প্রায়ই হয়	সবসময় হয়
১৯	ব্যাধাপ কিছু ঘটনা আমাকে কিছু কাজ নির্দিষ্ট নিয়মে করতে হয়	কখনই হয় না	মাঝে মাঝে হয়	প্রায়ই হয়	সবসময় হয়
২০	রাতে বাজীর বাইরে থাকতে হলে আমার ভয় লাগে	কখনই হয় না	মাঝে মাঝে হয়	প্রায়ই হয়	সবসময় হয়

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Appendix-K

Short Mood and Feelings Questionnaire- (SMFQ)

Child Self-Report

MOOD AND FEELINGS QUESTIONNAIRE: Short Version

This form is about how you might have been feeling or acting **recently**.

For each question, please check (✓) how you have been feeling or acting *in the past two weeks*.

If a sentence was not true about you, check NOT TRUE.

If a sentence was only sometimes true, check SOMETIMES.

If a sentence was true about you most of the time, check TRUE.

Score the MFQ as follows:

NOT TRUE = 0

SOMETIMES = 1

TRUE = 2

To code, please use a checkmark (✓) for each statement.	NOT TRUE	SOME TIMES	TRUE
1. I felt miserable or unhappy.			
2. I didn't enjoy anything at all.			
3. I felt so tired I just sat around and did nothing.			
4. I was very restless.			
5. I felt I was no good anymore.			
6. I cried a lot.			
7. I found it hard to think properly or concentrate.			
8. I hated myself.			
9. I was a bad person.			
10. I felt lonely.			
11. I thought nobody really loved me.			
12. I thought I could never be as good as other kids.			
13. I did everything wrong.			

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Appendix-L

Short Mood and Feelings Questionnaire- Bangla (SMFQ-Bangla)

Short Mood and Feelings Questionnaire-Bangla (SMFQ-Bangla)

নির্দেশনা: এই ফর্মটি তুমি গত ২ সপ্তাহ যাবত কেমন অনুভব করছো আর তার জন্য কি করছো তা বোঝার জন্য। প্রতিটি প্রশ্নের জোড়ায় তোমার জন্য কোনটি কতখানি প্রযোজ্য তা পাশের ১টি সংখ্যাকে বৃত্তে চিহ্নিত করো। যদি একটি বাক্য তোমার জন্য বেশীরভাগ সময় সত্য হয় তাহলে সত্য চিহ্নিত করো। যদি বাক্যটি তোমার জন্য সবসময় সত্য না নয় কিন্তু কখনও কখনও সত্য হয়, তাহলে মাঝে মাঝে চিহ্নিত করো এবং যদি বাক্যটি তোমার জন্য কখনও সত্য না হয়, তাহলে কখনও নয় চিহ্নিত করো।

	কখনও না	মাঝে মাঝে	সত্য
1. আমি দুঃখী বা অসুখীবোধ করছিলাম	০	১	২
2. আমি কোনকিছু উপভোগ করছিলাম না.....	০	১	২
3. আমি এত ক্লান্ত বোধ করছিলাম যে শুধু বসে থেকেছি এবং কিছু করিনি	০	১	২
4. আমি খুব অস্থির ছিলাম	০	১	২
5. আমার মনে হচ্ছিল যে আমি আর ভালো করার মতো নেই.....	০	১	২
6. আমি অনেক কঁদেছি	০	১	২
7. আমার সঠিকভাবে চিন্তা করা আর মনোযোগ দেয়া কঠিন ছিল	০	১	২
8. আমি নিজেকে ঘৃণা করছিলাম	০	১	২
9. আমি একজন খারাপ মানুষ	০	১	২
10. আমি একাকীত্ব ভুগছিলাম	০	১	২
11. আমি ভাবছিলাম কেউ আমাকে আসলে ভালোবাসে না.....	০	১	২
12. আমি ভাবছিলাম আমি কখনও অন্য শিশুদের মত ভালো হতে পারবো না ...	০	১	২
13. আমি সবকিছু ভুল করেছি	০	১	২

@Angold et al., (1995)

Translated by Farah Deebe (2010)

Appendix-M

Spence Children's Anxiety Scale Parent Report (SCASp)

SPENCE CHILDREN'S ANXIETY SCALE (Parent Report)

Your Name: Date:

Your Child's Name:

BELOW IS A LIST OF ITEMS THAT DESCRIBE CHILDREN. FOR EACH ITEM PLEASE CIRCLE THE RESPONSE THAT BEST DESCRIBES YOUR CHILD. PLEASE ANSWER ALL THE ITEMS.

1.	My child worries about things.....	Never	Sometimes	Often	Always
2.	My child is scared of the dark.....	Never	Sometimes	Often	Always
3.	When my child has a problem, s(he) complains of having a funny feeling in his / her stomach	Never	Sometimes	Often	Always
4.	My child complains of feeling afraid.....	Never	Sometimes	Often	Always
5.	My child would feel afraid of being on his/her own at home.....	Never	Sometimes	Often	Always
6.	My child is scared when s(he) has to take a test.....	Never	Sometimes	Often	Always
7.	My child is afraid when (s)he has to use public toilets or bathrooms.....	Never	Sometimes	Often	Always
8.	My child worries about being away from us / me.....	Never	Sometimes	Often	Always
9.	My child feels afraid that (s)he will make a fool of him/herself in front of people.....	Never	Sometimes	Often	Always
10.	My child worries that (s)he will do badly at school.....	Never	Sometimes	Often	Always
11.	My child worries that something awful will happen to someone in our family.....	Never	Sometimes	Often	Always
12.	My child complains of suddenly feeling as if (s)he can't breathe when there is no reason for this.....	Never	Sometimes	Often	Always
13.	My child has to keep checking that (s)he has done things right (like the switch is off, or the door is locked).....	Never	Sometimes	Often	Always
14.	My child is scared if (s)he has to sleep on his/her own.....	Never	Sometimes	Often	Always
15.	My child has trouble going to school in the mornings because (s)he feels nervous or afraid.....	Never	Sometimes	Often	Always
16.	My child is scared of dogs	Never	Sometimes	Often	Always
17.	My child can't seem to get bad or silly thoughts out of his / her head.....	Never	Sometimes	Often	Always
18.	When my child has a problem, s(he) complains of his/her heart beating really fast.....	Never	Sometimes	Often	Always

19.	My child suddenly starts to tremble or shake when there is no reason for this.....	Never	Sometimes	Often	Always
20.	My child worries that something bad will happen to him/her.....	Never	Sometimes	Often	Always
21.	My child is scared of going to the doctor or dentist	Never	Sometimes	Often	Always
22.	When my child has a problem, (s)he feels shaky.....	Never	Sometimes	Often	Always
23.	My child is scared of heights (eg. being at the top of a cliff).....	Never	Sometimes	Often	Always
24.	My child has to think special thoughts (like numbers or words) to stop bad things from happening.....	Never	Sometimes	Often	Always
25.	My child feels scared if (s)he has to travel in the car, or on a bus or train	Never	Sometimes	Often	Always
26.	My child worries what other people think of him/her.....	Never	Sometimes	Often	Always
27.	My child is afraid of being in crowded places (like shopping centres, the movies, buses, busy playgrounds).....	Never	Sometimes	Often	Always
28.	All of a sudden my child feels really scared for no reason at all.....	Never	Sometimes	Often	Always
29.	My child is scared of insects or spiders.....	Never	Sometimes	Often	Always
30.	My child complains of suddenly becoming dizzy or faint when there is no reason for this.....	Never	Sometimes	Often	Always
31.	My child feels afraid when (s)he has to talk in front of the class.....	Never	Sometimes	Often	Always
32.	My child's complains of his / her heart suddenly starting to beat too quickly for no reason	Never	Sometimes	Often	Always
33.	My child worries that (s)he will suddenly get a scared feeling when there is nothing to be afraid of.....	Never	Sometimes	Often	Always
34.	My child is afraid of being in small closed places, like tunnels or small rooms.....	Never	Sometimes	Often	Always
35.	My child has to do some things over and over again (like washing his / her hands, cleaning or putting things in a certain order).....	Never	Sometimes	Often	Always
36.	My child gets bothered by bad or silly thoughts or pictures in his/her head	Never	Sometimes	Often	Always
37.	My child has to do certain things in just the right way to stop bad things from happening	Never	Sometimes	Often	Always
38.	My child would feel scared if (s)he had to stay away from home overnight.....	Never	Sometimes	Often	Always
39.	Is there anything else that your child is really afraid of?	YES	NO		
	Please write down what it is, and fill out how often (s)he is afraid of this thing:	Never	Sometimes	Often	Always
	.....	Never	Sometimes	Often	Always
	.....	Never	Sometimes	Often	Always

Appendix-N

Spence Children's Anxiety Scale Parent Report-Bangla (SCASp-Bangla)

Spence Children's Anxiety Scale Parent Report-Bangla (SCASp-Bangla)

আপনার নাম ৪

তারিখ ৪.....

আপনার শিশুর নাম ৪

অনুগ্রহ করে বা পাশের কথাটি আপনার শিশুর ক্ষেত্রে যদি প্রযোজ্য হয় তা ডান পাশের যে শব্দটি দিয়ে সঠিকভাবে প্রকাশ করে সেটিকে বৃত্ত ঐকে চিহ্নিত করুন। অনুগ্রহ করে সবগুলো প্রশ্নের উত্তর দিন।

		কখনও না	মাঝে মাঝে	প্রায়ই	সবসময়
১.	আমার শিশুর কেবল দুঃশ্চিন্তা হয়।				
২.	আমার শিশুটি অন্ধকারে ভয় পায়।				
৩.	আমার শিশুর যখন কোন সমস্যা হয়, তখন সে তার পেটে কেমন অদ্ভূত অনুভূতি হয় বলে অভিযোগ করে।				
৪.	আমার শিশু “ভয় লাগে” বলে অভিযোগ করে।				
৫.	আমার শিশু বাড়ীতে একা থাকতে হলে ভয় পায়।				
৬.	আমার শিশুর পরীক্ষা দিতে হলে ভয় লাগে।				
৭.	পাবলিক টয়লেট বা বাথরুম ব্যবহার করতে হলে আমার শিশুর ভয় লাগে।				
৮.	আমার শিশু আমার/আমাদের কাছ থেকে দূরে থাকতে হলে দুঃশ্চিন্তা করে।				
৯.	আমার শিশু অন্যদের সামনে নিজে বোকা বানাবে ভেবে ভয় পায়।				
১০.	আমার শিশু তার স্কুলের কাজে খুব খারাপ করবে ভেবে দুঃশ্চিন্তায় থাকে।				
১১.	আমাদের পরিবারের কারো সাথে খারাপ কোন কিছু ঘটবে ভেবে আমার শিশু দুঃশ্চিন্তায় থাকে।				
১২.	আমার শিশু কোন কারণ ছাড়াই হঠাৎ শ্বাস নিতে পারছে না বলে অভিযোগ করে।				
১৩.	আমার শিশু পূনঃ পূনঃ বা বারবার পরীক্ষা করতে থাকে যে সে কাজটি সঠিকভাবে সম্পন্ন করেছে (যেমনঃ- সুইচ বন্ধ করা অথবা দরজায় তালা লাগানো)।				
১৪.	আমার শিশুকে একা ঘুমাতে হলে ভয় পায়।				
১৫.	নার্সিং বা ভয় লাগার কারণে সকালে স্কুলে যাবার সময় আমার শিশুর সমস্যা হয়।				
১৬.	আমার শিশু কুকুর ভয় পায়।				
১৭.	আমার শিশু তার মাথা থেকে বাজে আর তুচ্ছ চিন্তাগুলো সরতে পারে না।				
১৮.	যখন আমার শিশুটি কোন সমস্যার পরে তখন তার হৃদস্পন্দন খুব দ্রুত চলছে বলে অভিযোগ করে?				
১৯.	আমার শিশু কোন কারণ ছাড়াই হঠাৎ কাঁপুনি বা বাঁকুনি দিতে শুরু করে।				
২০.	আমার শিশু দুঃশ্চিন্তায় থাকে যে তার সাথে খারাপ কোনকিছু ঘটবে।				

২১.	আমার শিশু কোন ডাক্তার বা দর্শনিকের কাছে যেতে ভয় পায়।			
২২.	যখন আমার শিশুর কোন সমস্যা হয়, সে, ছড়সড় বোধ করে।			
২৩.	আমার শিশু উচ্চতাকে ভয় পায় (যেমনঃ- পাহাড়ের চূড়ায় দাঁড়ানো)।			
২৪.	খারাপ কোন ঘটনা ঘটি থামাতে হলে আমার শিশুকে কিছু বিশেষ চিন্তা (যেমনঃ-সংখ্যা বা শব্দ) মনে করতে হয়।			
২৫.	মোটরগাড়ী, বাস বা ট্রেনে চড়তে হলে আমার শিশু ভীতবোধ করে।			
২৬.	আমার শিশু অন্যরা তাকে নিয়ে কি ভাবছে তা নিয়ে দুঃশ্চিন্তায় থাকে।			
২৭.	ভীড় হয় এমন জায়গাগুলোতে থাকতে আমার শিশু ভয় পায় (যেমনঃ- শপিং সেন্টার, সিনেমা হল, বাস, ব্যস্ত খেলার মাঠ)।			
২৮.	আকস্মিক/হঠাৎ কোন কারণ ছাড়াই আমার শিশু ভীতবোধ করে।			
২৯.	আমার শিশু পোকামাকড় বা মাকড়সা ভয় পায়।			
৩০.	কোন কারণ ছাড়াই আমার শিশু অভিযোগ করে যে, তার মাথা ঘুরছে বা অজ্ঞান লাগছে।			
৩১.	ক্লাশে সবার সামনে কথা বলতে হলে আমার শিশু ভয় পায়।			
৩২.	হঠাৎ-ই- কোন কারণ ছাড়াই তার হৃদস্পন্দন খুব দ্রুত হতে শুরু করে বলে আমার শিশু অভিযোগ করে।			
৩৩.	ভয় পাবার মত কিছু না থাকলে ভীতবোধ করতে পারে ভেবে আমার শিশু দুঃশ্চিন্তায় থাকে।			
৩৪.	আমার শিশু ছোট বন্ধ জায়গা, যেমনঃ- সুরঙ্গ বা ছোট্ট রুম-এ থাকতে ভয় পায়।			
৩৫.	আমার শিশুকে কোন কোন কাজ বার বার করতে হয় (যেমনঃ- নিজের হাত ধোয়া, পরিষ্কার করা বা জিনিষপত্র নির্দিষ্ট নিয়মে সাজানো)।			
৩৬.	আমার শিশু তার মাথার খারাপ আর তুচ্ছ চিন্তা বা ছবিগুলোর কারণে বিরক্ত হয়।			
৩৭.	খারাপ কোন ঘটনা থামাতে হলে আমার শিশুকে কোন কোন কাজ একদম নির্দিষ্ট নিয়মে করতে হয়।			
৩৮.	রাতে বাড়ীর বাইরে থাকতে হলে আমার শিশু আতঙ্কিতবোধ করবে।			
৩৯.	এর বাইরে কি আপনার শিশু অন্য আরো কিছু খুব ভয় পায়? হ্যাঁ/না অনুগ্রহ করে লিখুন সেটা কি, এবং লিখুন কত ঘনঘন সে ঐ বিষয়টি ভয় পায়?	হ্যাঁ	না	

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Appendix-O

Short Mood and Feelings Questionnaire-Parent form (SMFQp)

Parent-report version

SHORT MOOD AND FEELINGS QUESTIONNAIRE

This form is about how your child may have been feeling or acting recently.

For each question, please check how much she or he has felt or acted this way *in the past two weeks*.

If a sentence was true about your child most of the time, check TRUE.

If it was only sometimes true, check SOMETIMES.

If a sentence was not true about your child, check NOT TRUE.

	TRUE	SOME TIMES	NOT TRUE
1. S/he felt miserable or unhappy	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. S/he didn't enjoy anything at all	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. S/he felt so tired that s/he just sat around and did nothing.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. S/he was very restless	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. S/he felt s/he was no good any more	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. S/he cried a lot	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. S/he found it hard to think properly or concentrate	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. S/he hated him/herself	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. S/he felt s/he was a bad person	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. S/he felt lonely	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. S/he thought nobody really loved him/her	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. S/he thought s/he could never be as good as other kids .	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13. S/he felt s/he did everything wrong	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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Appendix-P

Short Mood and Feelings Questionnaire-Parent-Bangla (SMFQp-Bangla)

Short Mood and Feelings Questionnaire (SMFQ)

নির্দেশনা: এই ফর্মটি আপনার শিশু গত ২ সপ্তাহ যাবত কেমন অনুভব করেছে আর তার জন্য কি করেছে তা বোঝার জন্য। প্রতিটি প্রশ্নের ক্ষেত্রে আপনার শিশুর জন্য কোনটি কতখানি প্রযোজ্য তা পাশের ১টি সংখ্যাকে বৃত্তে এঁকে চিহ্নিত করণ। যদি একটি বাক্য আপনার শিশুর জন্য বেশীরভাগ সময় সত্য হয় তাহলে সত্য চিহ্নিত করণ। যদি বাক্যটি আপনার শিশুর জন্য সবসময় সত্য না নয় কিন্তু কখনও কখনও সত্য হয়, তাহলে মাঝে মাঝে চিহ্নিত করণ এবং যদি বাক্যটি আপনার শিশুর জন্য কখনও সত্য না হয়, তাহলে কখনও নয় চিহ্নিত করণ।

	কখনও নয়	মাঝে মাঝে	সত্য
1. সে দুঃখী বা অসুখীবোধ করছিল	০	১	২
2. সে কোনকিছুতেই আনন্দ পাচ্ছিল না.....	০	১	২
3. সে এতই ক্লান্ত অনুভব করছিল যে, সে শুধু বসেছিল এবং কিছু করেনি	০	১	২
4. সে খুব অস্থির ছিল	০	১	২
5. তার মনে হচ্ছিল যে, সে আর আর ভালো করার মতো নেই	০	১	২
6. সে অনেক কঁদেছে	০	১	২
7. কোন কিছু সঠিকভাবে চিন্তা করা বা মনোযোগ দেয়া তার পক্ষে কঠিন ছিল	০	১	২
8. সে নিজেকে ঘৃণা করছিল	০	১	২
9. সে নিজেকে একজন খারাপ মানুষ মনে করছিল	০	১	২
10. সে একাকীত্বে ভুগছিল	০	১	২
11. সে ভাবছিল যে, কেউ তাকে আসলে ভালবাসে না	০	১	২
12. সে ভাবছিল সে আর কখনও অন্য শিশুদের মত ভাল হতে পারবে না.....	০	১	২
13. সে মনে করছিল যে, সে সবকিছুই ভুল করেছে	০	১	২

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Translated by Farah Deeba (2010)

Appendix-Q

Cognitive Traid Inventory for Children (CTI-C)

COGNITIVE TRIAD INVENTORY (CTI) – CHILDREN

This form lists different ideas that children sometimes have. For each of these ideas, show how much it describes you by circling the answer which describes your opinion. Be sure to choose only one answer for each idea. Answer the items for what you are thinking **Right Now**.

Answering Codes:

Yes = True

Maybe = Sometimes true and sometimes not true

No = Not true

Example:

1. Life has good things and bad things. Yes Maybe No

In the example above, if you circle yes, you think that life has good and bad things. If you circle no, you do not think life has good and bad things. If you circle maybe, you think that sometimes life has good and bad things.

NOW TURN THE PAGE AND BEGIN

c 1986

E. E. Beckham, W. R. Leber, J. T. Watkins, J. Boyer, & J. Cook

c 1987

N. J. Kaslow & K. D. Stark

Subject# _____

Date _____

CTI – CHILDREN

Instructions: Circle the answer which best describes your opinion. Choose only one answer for each idea.

Answer the items for what you are thinking **RIGHT NOW**. Remember fill this out for how you feel today.

- | | | | |
|---|-----|-------|----|
| 1. I do well at many different things. | Yes | Maybe | No |
| 2. Schoolwork is no fun. | Yes | Maybe | No |
| 3. Most people are friendly and helpful. | Yes | Maybe | No |
| 4. Nothing is likely to work out for me. | Yes | Maybe | No |
| 5. I am a failure | Yes | Maybe | No |
| 6. I like to think about the good things that will happen for me in the future. | Yes | Maybe | No |
| 7. I do my schoolwork okay. | Yes | Maybe | No |
| 8. The people I know help me when I need it. | Yes | Maybe | No |
| 9. I think that things will be going very well for me a few years from now. | Yes | Maybe | No |
| 10. I have messed up almost all the best friendships I have ever had. | Yes | Maybe | No |
| 11. Lots of fun things will happen for me in the future. | Yes | Maybe | No |
| 12. The things I do every day are fun. | Yes | Maybe | No |
| 13. I can't do anything right. | Yes | Maybe | No |
| 14. People like me. | Yes | Maybe | No |
| 15. There is nothing left in my life to look forward to. | Yes | Maybe | No |
| 16. My problems and worries will never go away. | Yes | Maybe | No |
| 17. I am as good as other people I know. | Yes | Maybe | No |
| 18. The world is a very mean place. | Yes | Maybe | No |

Subject# _____

Date _____

19. There is no reason for me to think that things will get better for me.	Yes	Maybe	No
20. The important people in my life are helpful and nice to me.	Yes	Maybe	No
21. I hate myself.	Yes	Maybe	No
22. I will solve my problems.	Yes	Maybe	No
23. Bad things happen to me a lot.	Yes	Maybe	No
24. I have a friend who is nice and helpful to me.	Yes	Maybe	No
25. I can do a lot of things well.	Yes	Maybe	No
26. My future is too bad to think about.	Yes	Maybe	No
27. My family doesn't care what happens to me.	Yes	Maybe	No
28. Things will work out okay for me in the future.	Yes	Maybe	No
29. I feel guilty for a lot of things.	Yes	Maybe	No
30. No matter what I do, other people make it hard for me to get what I need.	Yes	Maybe	No
31. I am a good person.	Yes	Maybe	No
31. There is nothing to look forward to as I get older.	Yes	Maybe	No
33. I like myself.	Yes	Maybe	No
34. I am faced with many difficulties.	Yes	Maybe	No
35. I have problems with my personality.	Yes	Maybe	No
36. I think that I will be happy as I get older.	Yes	Maybe	No

Appendix-R

Cognitive Triad Inventory Children -Bangla (CTI- Bangla)

Cognitive Triad Inventory Children -Bangla (CTI)- Bangla)

শিশুরা অনেক সময় বিভিন্ন ধারণা পোষণ করে। এই ফর্মে তার একটি তালিকা দেয়া হয়েছে। প্রতিটি ধারণা তোমার ক্ষেত্রে তোমার ভাবনাকে ব্যাখ্যা করে কতখানি তা পাশের সাংকেতিক উত্তরকে বৃত্ত ঐকে চিহ্নিত করো। প্রতিটি ধারণার জন্য একটি মাত্র উত্তর বেছে নিও। এই মুহূর্তে তোমার কোনটি সঠিক মনে হচ্ছে সে অনুসারে উত্তর বেছে নেবার চেষ্টা করো।

সাংকেতিক উত্তরের ব্যাখ্যা:

হ্যাঁ = আমার জন্য সত্য

হয়ত = কখনও সত্য এবং কখনও সত্য নয়

না = সত্য নয়

উদাহরণ:

১. জীবনের ভালো এবং খারাপ দুটোই আছে হ্যাঁ হয়ত না

উপরের উদাহরণটিতে যদি তোমার উত্তর হয় “হ্যাঁ” এর অর্থ হচ্ছে যে, তুমি মনে করো যে জীবনের ভালো এবং খারাপ দুটোই আছে। যদি তুমি বৃত্ত দিয়ে “না” চিহ্নিত করো তার মানে হচ্ছে তুমি মনে করো না বা ভাবো না যে জীবনের ভালো এবং খারাপ দুটোই আছে। আর যদি তুমি “হয়ত” বৃত্ত চিহ্নিত করো তার অর্থ হচ্ছে যে, তুমি ভাবো জীবনের ভালো এবং খারাপ দুটোই আছে

এবার অনুগ্রহ করে নীচের বাক্যগুলো পূরণ করো।

১	আমি বিভিন্ন কাজে ভালো করি।	হ্যাঁ	হয়ত	না
২	স্কুলের কাজ করতে আমার ভাল লাগেনা।	হ্যাঁ	হয়ত	না
৩	অধিকাংশ মানুষই বন্ধুর মত ও সাহায্য করে।	হ্যাঁ	হয়ত	না
৪	আমার জন্য কোন কিছুই ঠিকমত হবে না।	হ্যাঁ	হয়ত	না
৫	আমি কোন কাজই করতে পারি না	হ্যাঁ	হয়ত	না
৬	আমার ভবিষ্যতে যা কিছু ভালো ঘটতে পারে আমার সে সম্পর্কে ভাবতে ভালো লাগে।	হ্যাঁ	হয়ত	না
৭	আমি আমার বাড়ীরকাজ ঠিকভাবে করতে পারি।	হ্যাঁ	হয়ত	না
৮	আমার চেনা মানুষেরা আমার প্রয়োজনে আমাকে সাহায্য করে।	হ্যাঁ	হয়ত	না
৯	আমার মনে হয় সামনের বছরগুলো আমার জন্য খুব ভালো যাবে।	হ্যাঁ	হয়ত	না
১০	আমি আমার অনেক ভালো বন্ধুর সাথে সম্পর্ক নষ্ট করেছি।	হ্যাঁ	হয়ত	না
১১	ভবিষ্যতে আমার জন্য অনেক মজার কিছু ঘটবে।	হ্যাঁ	হয়ত	না
১২	আমি প্রতিদিন যাই করি তাতেই আনন্দ পাই।	হ্যাঁ	হয়ত	না

১৩	আমি কোনকিছু সঠিকভাবে করতে পারি না ।	হ্যাঁ	হয়ত	না
১৪	সবাই আমাকে ভালোবাসে ।	হ্যাঁ	হয়ত	না
১৫	আমার ভবিষ্যত নিয়ে ভেবে কোন লাভ হবে না ।	হ্যাঁ	হয়ত	না
১৬	আমার সমস্যা আর দুঃশ্রুতি কখনই দূর হবে না ।	হ্যাঁ	হয়ত	না
১৭	আমি আমার চেনা-জানা অন্যদের মতই ভালো ।	হ্যাঁ	হয়ত	না
১৮	পৃথিবীটা খুব খারাপ জায়গা ।	হ্যাঁ	হয়ত	না
১৯	এটা ভেবে কোন লাভ হবে না যে, আমার অবস্থা/পরিস্থিতি একসময় ভাল হয়ে যাবে ।	হ্যাঁ	হয়ত	না
২০	আমার জীবনের গুরুত্বপূর্ণ মানুষগুলো (যেমনঃ-বাবা/মা, ভাই/বোন বা আত্মীয় স্বজন) আমার উপকার করে এবং আমাকে ভালবাসে (সহৃদয়) ।	হ্যাঁ	হয়ত	না
২১	আমি আমাকে ঘৃণা করি ।	হ্যাঁ	হয়ত	না
২২	আমি আমার সমস্যা সমাধান করবো ।	হ্যাঁ	হয়ত	না
২৩	খারাপ ঘটনাগুলো/বাজে জিনিসগুলো আমার ক্ষেত্রে বেশী ঘটে ।	হ্যাঁ	হয়ত	না
২৪	আমার একটি বন্ধু আছে যে আমাকে ভালবাসে (সহৃদয়) এবং উপকার করে ।	হ্যাঁ	হয়ত	না
২৫	আমি অনেক কাজ খুব ভালোভাবে পারি	হ্যাঁ	হয়ত	না
২৬	আমার ভবিষ্যত এত খারাপ যে চিন্তা করতে পারি না ।	হ্যাঁ	হয়ত	না
২৭	আমার যদি ক্ষতি হয়, তাতে আমার পরিবারের কিছু আসে যায় না ।	হ্যাঁ	হয়ত	না
২৮	আমার ভবিষ্যতে সব ভালোভাবে হবে ।	হ্যাঁ	হয়ত	না
২৯	আমার অনেককিছুর জন্য নিজেকে অপরাধী/দোষী লাগে ।	হ্যাঁ	হয়ত	না
৩০	আমি যতই চেষ্টা করি না কেন, অন্যরা সবসময় কোনকিছু পাওয়া আমার জন্য কঠিন করে দেয় ।	হ্যাঁ	হয়ত	না
৩১	আমি একজন ভালো মানুষ ।	হ্যাঁ	হয়ত	না
৩২	দিনে দিনে আমি যত বড় হচ্ছি, আমার ভবিষ্যত নিয়ে আশা করবার মত আর কিছু থাকছে না ।	হ্যাঁ	হয়ত	না
৩৩	আমি আমাকে পছন্দ করি	হ্যাঁ	হয়ত	না
৩৪	আমি অনেক সমস্যার মধ্যে পড়ে আছি ।	হ্যাঁ	হয়ত	না
৩৫	আমার আচার ব্যবহার, কথাবার্তায় সমস্যা আছে ।	হ্যাঁ	হয়ত	না
৩৬	আমার মনে হয় আমি বড় হলে সুখী হবো ।	হ্যাঁ	হয়ত	না

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Translated by: Farah Deeba

Appendix-S

Permission letter to work with children of ACD, Rajshahi



Association for Community Development - ACD

Rajshahi-6100, Bangladesh

Ref. ACD/PROG/059/2010

July 04, 2010

Farah Deeba
PhD Student
Center for Emotional Health
Department of Psychology
Macquarie University
North Ryde, NSW
Australia

Subject: Approval to work with children and adolescents.

Dear Farah Deeba,

Greetings from Association for Community Development-ACD, Rajshahi!

I am writing to express my support for your interest to work with ACD as a part of your research.

ACD's vision is an equity-based democratic and sustainable society which provides human rights, mainstream gender equality, ensure social justice, good governance and sustainable development. It approaches to promoting women's and children's rights in the most remote areas of northwest Bangladesh. ACD brings together community members of different ethnicities and class status not just to address human rights violations such as trafficking, exploitation and sexual violence, but to tackle the underlying causes of these problems.

I would be happy to provide you with any further information. Please feel free to contact me at salima_sarwar@yahoo.com or +880721770660.

Best wishes,

05.07.10
Salima Sarwar
Executive Director

Appendix-T

Permission letter to work with children of OWDEB, Chittagong

We Respect Men, Who Respect Women



OWDEB
Organization For
Women's Development in Bangladesh

Ref : owdeb/admin/study -2010 / 67
July 05 2010

To

Farah Deebea
PhD student,
Centre for Emotional Health,
Department of Psychology,
Macquarie University,
North Ryde , NSW
AUSTRALIA
E-mail : farah.deeba@mq.edu.au

Subject : Work permission with children and adolescent of OWDEB
working area in Chittagong, Bangladesh

Dear Farah Deebea,

Greetings !

It is our pleasure that you are working for PhD in Australia taking such an important issue to promote Child Rights through your topic "Trauma-Specific Negative Cognitions in Children and Adolescents " .
Children of Bangladesh experience such severe traumas in their daily life in various form of abusing. Our total future generation is effected without proper care of such an important issue.
Your work plan of research taking Bangladesh as your field is a perfect one .
We are happy that you selected OWDEB and our linked organizations to work with deprived Children and Adolescents as they are our important working partners always.

You with your all involvement are most welcome to work with us for such a burning issue. We shall provide our support as far as possible to improve and highlight our knowledge of children's mental health according to your study design .
Thank you .

Sincerely yours

Shyamoli Mazumder
Chief Executive
OWDEB
(Organization for Women's Development in Bangladesh)
e-mail : owdeb123@gmail.com
owdeb.chittagong.bd@live.com
website : www.owdeb.org

Head Office :
Salam Building, Abdus Sobhan R/A,
Saheed Para, Chandgaon, Chittagong, Bangladesh.
Tel : 880-31-2570640, Cell : 01711171060
E-mail : owdeb123@gmail.com

Branch Office :
Sen Bari, Vill/P.O. : Barama
P.S. : Chandanaish
Chittagong, Bangladesh.
Tel: 880-31-646392, Cell : 01817769477

Web site : www.owdeb.org

Appendix-U

Permission letter to work with children of Sunnydale School, Dhaka



Senior Section: House # 34, Road # 7, Dhanmondi R/A,
Ph: 9118056, 9110240, 8156486 E-mail: sunnydalesenior@yahoo.com

Ms. Farah Deebea
PhD Student
Centre for Emotional Health
Department of Psychology
Macquarie University
North Ryde, NSW
Australia

Dear Ms. Deebea,

The mission of this school is underpinned by this belief to educate children with strong academic background as well as make them conscientious citizens to successfully perform their duties in a society they live in. At the same time it is crucial that they grow up with a healthy mental disposition. To ensure this, we have appointed a psychologist to assist our students if they are traumatised for some reason and help them to learn to minimise it.

We extend our full support in your research work to improve our knowledge of children's mental health, because this is the way to establish a better world for our future generation.

We hope and pray that you achieve great success in your work.

With regards,

Date: July 10, 2011

(Tazeen Ahmed)
Principal

Junior Section: House#10, Road # 13, Dhanmondi R/A, Ph: 8158598, 9141620 E-mail: sunnydalejunior@yahoo.com
Middle Section: House# 66, Road #11/A, Dhanmondi R/A, Ph: 8122449, 8159661 E-mail: sunnydalemiddle1@yahoo.com

Appendix-V

Permission letter to work with children of SOS Children's Village, Dhaka

MACQUARIE
UNIVERSITY



CENTRE FOR
EMOTIONAL HEALTH

Department of Psychology,
Sydney, NSW, 2109,
Australia

Date: 10th April, 2010

To,
The Director,
SOS Children's Village International in Bangladesh
1 Shamoli, Mirpur Road, Dhaka 1207
Tel: +88028118793
Fax: +88028113217
E-mail: soscvdac@sos-bangladesh.org

Subject: Seeking permission to work with children and adolescents affiliated with your organization.

Dear Sir/Madam,

Greetings!

I, Farah Deebea, Assistant Professor, Department of Clinical Psychology, University of Dhaka, am presently doing my PhD at Macquarie University, Sydney, NSW, Australia. I am doing my degree under the supervision of Professor Roland M. Rapee, Director, Centre for Emotional Health, Department of Psychology, Macquarie University, NSW, Australia. My research topic is entitled "Trauma-Specific Negative Cognitions in Children and Adolescents". A brief description of the research plan follows:

Sadly, too many children experience severe traumas in their lives. These traumas contribute immensely to generate different negative thoughts relevant to life, others and oneself. These negative thoughts can have a major impact on the lives of these children and can lead to long term and serious difficulties. Through my research I will try to better understand the maladaptive and debilitating thoughts that are generated in a child by different types of trauma. I will be working with children of 9 to 17 years who have been exposed to different types of traumatic events. In the initial stage children will be assessed with different psychometric measures and then in stage 2, I will design and implement a brief treatment programme with younger children (below 9 yrs). I have chosen Bangladesh as the place to do my data collection due to the large number of difficult life experiences faced by the children there. It would be a great opportunity for me if I can work with the children who have experienced any form of traumatic event in their life at your organization. I understand the personal resistance of sharing the issues by the children involved with your organization and I have every respect about that. Hence I guess it would be worth mentioning that, no children will be involved in the study without their own and their parents' or guardians' permission. However, after each assessment session I will quickly check the psychometric measures so that any child who has higher level of stress that requires counselling will be notified to you. I hope this will be little support provided to you during my works at your organization.

Therefore, I would be grateful if you would be kind enough to allow me to work with the children who you have access to and in this way contribute to improving our knowledge of children's mental health.

Sincerely yours

Farah Deebea
PhD student,
Centre for Emotional Health,
Department of Psychology,
Macquarie University,
North Ryde, NSW
Australia
E-mail : farah.deeba@mq.edu.au

Permission is given.

05.5.11
(MD.SAIFUL ISLAM)
Project Director
SOS Children's Village, Dhaka