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CHILDHOOD ANXIETY IN A UK POPULATION: A NORMATIVE STUDY OF THE SPENCE CHILDREN'S ANXIETY SCALE

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General Abstract

One of the most efficient tools used in the assessment and diagnosis of childhood anxiety disorders is the self-report questionnaire. The development of self-report questionnaires that reflect the classifications in diagnostic manuals available to clinicians and that are child specific reflects the move within research to advance the understanding of anxiety disorders within children. This dissertation consists of two papers, both of which emphasise the importance of being able to reliably and accurately assess anxiety in children.

In order to explore the development of anxiety disorders in children, a literature review covering both adult and child conceptualisations of anxiety, its assessment and treatment was carried out. Given that different anxiety disorders exist within children the importance of being able to accurately differentiate and diagnose anxiety disorders is discussed. Early detection and intervention is the key to reducing the impact of anxiety on children's lives, a tool which can be used to screen large numbers of children is required. This basis is used to discuss the clinical, treatment and research implications of self-report questionnaires for childhood anxiety. Suggestions are made as to how these ideas may be taken forward in future research.

The empirical paper investigated the psychometric properties and factor structure of the Spence Children's Anxiety Scale as well as producing norms from a community sample of children from the United Kingdom. The clinical and research implications of these findings were discussed.

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THE DEVELOPMENT OF CHILDHOOD ANXIETY AND IMPLICATIONS FOR ASSESSMENT

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This paper has been prepared for submission to 'Behaviour Research and Therapy' (see Appendix A).

Running Head: Anxiety in a UK population and the SCAS

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Abstract

The developmental literature identifies the importance of early diagnosis of anxiety in children (Essau, Conradt & Petermann, 2000). The aim of this paper is to assess the literature that examines the development of child specific assessment techniques, the rational behind their development and a critique of their uses. It looks at the development of child specific approaches to anxiety, which typically stem from the literature regarding anxiety in adults. The second part of the review considers different methods of assessing anxiety in children with a specific focus on self-report measures. Self-report measures are viewed to be the most sensitive tools for identifying anxiety in children. Links are made between the importance of an accurate diagnostic tool and the design of child specific treatment interventions. Numerous scales exist but the Spence Children's Anxiety Scale (SCAS; Spence, 1997, 1998) is one of the more widely used and recently developed self-report scales used in the assessment of anxiety in children. The review addresses the structure and psychometric properties of this scale and its current limitations. Finally, the review highlights ways forward to establish the psychometric properties of the SCAS in a population of children in the United Kingdom in order to establish its generalisability to this country. It is vital that clinicians have access to norms representative of the country in which they are using a scale in order to have an accurate comparison for that population (Svensson & Ost, 1999).

Key Words: anxiety, children, assessment, development

1. Introduction

The diagnosis of childhood anxiety is reliant upon the provision of valid and reliable assessment strategies (Spence, 1998). Currently, the diagnosis of anxiety in children is established using the diagnostic criteria laid down in manuals such as the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV-TR; American Psychiatric Association [APA], 2000) and the International Classification of Diseases and Related Health Problems (ICD-10; World Health Organisation, 1994). In order to aid clinicians in making accurate diagnoses, a number of questionnaire measures have been developed which rely on parent, teacher and child self-report of anxiety (e.g. The Child Behaviour Checklist; Achenbach & Edelbrock, 1983, The Spence Children's Anxiety Scale (SCAS); Spence, 1997, 1998). Since links between both parent and teacher informant rating scales with child reports of anxiety have been shown to be unreliable (Mesman & Koot, 2000) recent emphasis has focused on the development of self-report questionnaire which have become increasingly critical tools in the diagnostic procedure. Self-report questionnaires such as the SCAS (Spence, 1997, 1998) and the Screen for Child Anxiety Related Emotional Disorders (SCARED; Birmaher, et al., 1997) are good examples of child specific measures that reflect diagnostic categories of different anxiety disorders.

The aim of this paper is to explore self-report questionnaire measures of childhood anxiety within the context of developmental models of anxiety. Mainly, its aim is to assess literature which has examined the development of child specific assessment techniques, the rational behind their development and a critique of their uses and to place it within a broader framework with which to understand anxiety in children. It

considers the aetiology of anxiety and the different anxiety subtypes as outlined in the DSM-IV-TR (APA, 2000). It aims to look at associations between this literature and the development of child specific approaches to anxiety, which typically stem from the literature regarding anxiety in adults. It considers how one influential adult model (Beck, Emery & Greenberg, 1985) has influenced the development of theoretical models that relate specifically to childhood anxiety (Rapee, 2001). It will highlight how the progress in developmental models has driven research into reviewing treatment and assessment methods with children. The developmental literature identifies the importance of early diagnosis of anxiety in children in order to prevent or reduce the development of further psychological problems in later life (Essau, Conradt & Petermann, 2000).

The review, therefore, will consider different methods of assessing anxiety in children with a specific focus on self-report questionnaires. The SCAS (Spence, 1997, 1998) is one of the more widely used and recently developed questionnaires used in the assessment of anxiety in children and is reported to measure six different diagnostic subtypes of anxiety relating to DSM-IV (APA, 1994[1]). Studies, which have explored the psychometric properties of the SCAS, suggest that it is one of the most valid and reliable tools available in both research and clinical practice for identifying levels of anxiety in children. The psychometric properties of this questionnaire are explored.

Finally, the review aims to highlight current discrepancies that remain in the assessment and it proposes ways forward to establish reliable and valid measures that

[1] It is acknowledged that the DSM-IV has been replaced by the DSM-IV-TR (APA, 2000) however there have been no updates to the anxiety disorders classification and as the literature reviewed in this paper uses DSM-IV this reference has been kept to avoid confusion.

researchers and clinicians can use in the assessment and diagnosis of anxiety in children.

2. Anxiety Disorders in Children and Adolescents

Anxiety is defined in DSM-IV (APA, 1994) as "an apprehensive anticipation of future danger or misfortune accompanied by a feeling of dysphoria or somatic symptoms of tension. The focus of anticipated danger may be internal or external" (p.782). Anxiety involves a complex response containing affective, cognitive, behavioural and physiological components (Beck et al., 1985; Silverman, La Greca, & Wasserstein, 1995). Often the words anxiety and fear are used interchangeably in the literature, although it is helpful to be able to distinguish between these interrelated but separate constructs (Silverman et al., 1995). Worry can be considered as one of the cognitive components of anxiety, involving persistent, negative thoughts and images relating to potentially threatening outcomes of a situation (Silverman et al., 1995). Worry can have an adaptive function in that it allows an individual to evaluate potential outcomes and problem solve in order to cope with these outcomes. However, when it becomes intrusive, persistent and interferes with an individual's ability to function in daily life it is no longer adaptive (Mathews, 1990).

Fear can be viewed as a state of the physiological system preparing the individual for escape or confrontation, is viewed as relatively common in childhood and is typically transitory in nature and related to a child's cognitive ability to recognise and evaluate potential dangers in their environment (Mathews, 1990; Ollendick, Yule, & Ollier, 1991). Many fears develop in childhood because children become increasingly able to

detect potential threats although have not yet developed the ability to reason and evaluate the threat or learn how to cope with it (Ollendick et al., 1991). Fears are viewed within the literature as being generally mild, age-specific (content and complexity changes as children develop) and part of typical development, Their persistence over time, however, can have a maladaptive effect leading to the development of anxiety disorders and low self-esteem (Ollendick et al., 1991; Svensson & Ost, 1999; Vasey, Crnic, & Carter, 1994).

Anxiety disorders are the most common psychiatric disorders in children and adolescents. Epidemiological studies report the prevalence rates of anxiety disorders in children and adolescents, severe enough to interfere with their daily functioning, at around 8-12% (Berstein, Borchardt, & Perwein, 1996). Anxiety is associated with the disruption of daily life in several areas such as peer relationships, family relationships, leisure time activities and school functioning (Essau et al., 2000; Van Ameringen, Mancini, & Farvolden, 2003). In addition, it impacts indirectly on the development of other childhood disorders by altering thought processes and physiological and behavioural responses (Bell-Dolan, Last, & Strauss, 1990; Kashani & Ovraschel, 1990). If left untreated, the long-term implication of anxiety is it persists through adolescence into adulthood and becomes a risk factor for the development of other psychiatric disorders such as depression and substance misuse in adulthood (Essau et al., 2000; Wittchen & Essau, 1993).

2.1 Anxiety Disorders in Childhood

Researchers and clinicians have highlighted several types of anxiety disorder in children and adolescents and these are included in DSM-IV (APA, 1994). Some

anxiety disorders such as separation anxiety disorder (SAD), specific phobias and obsessive-compulsive disorder (OCD) emerge in young childhood, whereas anxiety disorders such as panic attack/agoraphobia (P/A) and social phobia (SP) emerge in later childhood/adolescence.

The expression of anxiety disorders tends to reflect a child's level of development. For example, SAD in very young children is characterised by tantrums and crying where these behaviours might not be consciously related to exact fears of being left or harm coming to a parent. As a child ages, these symptoms may emerge as an avoidance to be separated from parents and may be expressed cognitively though worries about kidnapping, for example. Separation anxiety forms part of a child's normal development with their primary caregiver and is not usually considered to be a clinically relevant psychological problem in a child's early years (Ainsworth, Blehar, Waters & Wall, 1978). Research has, however, highlighted that the age at which separation anxiety begins to interfere with expected activities such as going to school is most common between 6-11 years for both community and clinical samples of children (Bird et al., 1988; Last, Perrin, Hersen, & Kazdin, 1992). Prevalence estimates vary considerably within and between community and clinical samples but range from 2-12% and 29-45% respectively (APA, 1994; Kashani & Ovraschel, 1990; Last et al., 1992). Girls appear more likely to suffer from SAD although contrary evidence to this assumption exists (Bowen, Offord, & Boyle, 1990; Kashani, & Ovraschel, 1990).

Specific phobias relating to animals and the natural environment (such as heights, storms etc.) tend to be prevalent in young children ranging from 2-9% in community

samples and 30-40% in clinical samples (Last et al., 1992; Svensson & Ost, 1999). The presence of one fear in childhood usually increases the likelihood of developing another fear (APA, 1994). The implication of this risk factor highlights the need for early diagnosis and intervention. Age of onset and frequency of fears varies depending on the type of fear and the developmental level of the child but has been reported on average as 8 years (Last et al., 1992; Svensson & Ost, 1999).

SAD and specific phobias have an equal prevalence in boys and girls in childhood. Epidemiological studies have highlighted, however, gender differences in some anxiety disorders. Clinically, boys tend to develop symptoms of OCD earlier than girls, for example (APA, 1994; (but see Whitaker et al., (1990) for increased prevalence of OCD in girls in a community sample)). The main features of OCD are recurring obsessions or compulsions that interfere significantly with daily life, cause distress and are time consuming. According to the literature, there are no developmental differences in the presentation of symptoms of OCD (APA, 1994).

The classification of overanxious disorder (OAD) in DSM-III-R (APA, 1980) is now incorporated within GAD in DSM-IV (APA, 1994). The main feature of GAD is excessive anxiety or worry occurring over a prolonged period and regarding a number of events (APA, 1994). This diagnosis requires the presence of a number of physiological symptoms such as restlessness, muscle tension and difficulty sleeping. In younger children, it may present through somatic experiences such as headaches and stomach aches.

Simple phobias related to blood-injection-injury and specific situations (tunnels, lifts, enclosed places etc.) tend to emerge in later childhood as experiences of life broaden exposing children to more novel situations (APA, 1994). Girls tend to report more fears than boys and the numbers of reported fears are considered to decline with age (Spence & McCathie, 1993; Svensson, & Ost, 1999). This is in contrast to the literature that suggests that having one fear is a risk factor for developing further fears. This may suggest that there is an element of 'growing out' of fears in some children whereas others do not. Therefore, there needs to be a way to distinguish between these groups of children.

The publication of DSM-IV saw the inclusion of the DSM-III-R classification of avoidant disorder within SP. In younger children, this anxiety disorder may present similarly to separation anxiety with tantrums and crying and a lack of participation in unfamiliar social settings such as parties. As children are less able to avoid social situations such as school at a young age they may present with general anxiety symptoms and be unable to identify the source of their distress (APA, 1994). However, a decline in academic functioning and school refusal and an avoidance of social or performance situations where embarrassment may occur tends to become more apparent as children grow older (APA, 1994). Age of onset is generally around 11-12 years (Last et al., 1992; Strauss & Last, 1993) although reports vary which may reflect the difference in time between onset and presentation. According to DSM-IV (APA, 1994) the duration of SP may last throughout life, if not diagnosed and treated early, with periods of remission followed by re-emergence during stressful times.

2.2 Anxiety Disorders in Adolescence

Whitaker et al., (1990) found within a community-based sample, that GAD was the most commonly occurring anxiety disorder in adolescents aged 14-17 years old with a long-term prevalence of 3.7% and twice as many girls as boys presenting with GAD. More than half of clinically referred adults with GAD report onset in childhood or adolescence, although retrospective reports like this are less reliable than longitudinal studies (APA, 1994). Future research may need to address the methodological weaknesses that exist within the literature.

Panic attacks with or without the presence of agoraphobia (P/A) are also more prevalent in adolescence although reports of onset in early childhood have been reported. It is believed that younger children may not have the cognitive capacity to interpret panic attacks as internal sensations and this interpretation is a key component in the development of panic attacks (APA, 1994; Black & Robbins, 1990; Last et al., 1992).

As previously mentioned, OCD in girls has a later age of onset, generally within mid-late adolescence and is one of the least common anxiety disorders in childhood (Weiss & Last, 2001). The literature suggests that children with OCD have either had a history of past anxiety disorders or are already suffering from another anxiety at the time of developing OCD (Last et al., 1992). This premorbid history of anxiety as a risk factor for developing OCD in childhood supports the literature suggesting that early onset of anxiety in childhood is frequently reported by adults who have an anxiety disorder. This emphasises the need to diagnose anxiety disorders as early as

possible in order to treat and minimise their impact on childhood and prevent future disorders developing.

The literature outlines that most subtypes of anxiety normally begin in childhood or adolescence, although it is not uncommon for these anxiety disorders to be missed or not presented to a clinician for diagnosis until adulthood (Wittchen & Essau, 1993). This is because it is usually the parents who seek professional help for their children and sometimes not until the internalising disorder (inner distress) manifests itself behaviourally such as through school refusal, poor academic achievement, reluctance to leave home or an avoidance of certain situations (Choudhury, Pimentel, & Kendall, 2003; Last & Strauss, 1990; Spence, Rapee, McDonald, & Ingram, 2001). Estimates of age of onset are therefore more likely to be overestimates and despite high prevalence rates, few children receive treatment (Kashani & Ovraschel, 1990; Muris & Meesters, 2002). This oversight can be addressed by improving screening methods and investing in future empirical studies to increase the understanding of the development of anxiety in children.

The anxiety subtypes outlined in this review derive from DSM-IV (APA, 1994), which develops its classification system based on empirical epidemiological studies, which are reviewed, and where necessary its classification system is revised to reflect current views in the literature (for example OAD and avoidant disorder being re-categorised within GAD and SP respectively). Research began by investigating anxiety disorders in adulthood and only recently, has there been a shift to develop models of childhood anxiety. Criticisms remain regarding the applicability of DSM classifications to children (Vasey & Dadds, 2001). As DSM is mainly an adult-based

classification system, it is argued that the developmental variations in the presentation of anxiety may result in a large sample of anxious children being missed (Garber & Strassberg, 1991). More research is required into the identification of which risk factors play a role and at what age and into the course and prognosis of a disorder depending at what age onset occurs and the level of development that a child had achieved prior to onset (Vasey & Dadds, 1991).

As this section has shown, diagnosis of different anxiety disorders is reliant on understanding how they present at different ages. As child models of anxiety have evolved from their adult counterparts, the next section will review the most influential adult model of anxiety disorders and then lead on to the development of childhood anxiety and developmental models.

3. Theoretical Overview of Anxiety Disorders in Adults

Beck et al's., (1985) cognitive model of anxiety is an accepted and influential model, supported by numerous and rigorous experimental and self-report studies (Beck, Brown, Steer, Eidelson, & Riskind, 1987; Mogg, Mathews, & Eysenck, 1992; Wells, 1997). From numerous interviews in clinical settings, Beck (1967) concluded that people form beliefs about themselves and the world as a result of early experiences, and these beliefs determine how later experiences are interpreted. From this understanding, he developed a general cognitive-behavioural model of psychopathology.

Beck's theory suggests that these core beliefs form schemas (cognitive structures) related to danger, which may be activated by a negative life event and contribute to the development of psychological disorders. If these beliefs are rigid, extreme and resistant to change, they may become 'dysfunctional'. Dysfunctional assumptions may be generated as a result of core beliefs and are characterised by automatic thoughts, triggered by an event, which are negative in content. These negative automatic thoughts (NATs) are so called because they are thoughts that come in to the mind automatically and often have a negatively self-evaluative component. In their model of anxiety, Beck et al., (1985) suggested that vulnerability to anxiety and its maintenance is determined by an individual's perception of the degree of threat that a negative event poses, the underestimation of their ability to cope with this threat and the safety features available in the environment. NATs usually revolve around catastrophic themes of being unable to cope, negative social evaluation from others, performance fears and concerns about the meaning of physical symptoms caused by anxiety. Physical anxiety symptoms may be experienced as increased heart rate/palpitations, breathlessness, sweating, muscle tension, shaking or nausea. Other symptoms of anxiety may be fear, excessive worry, obsessions, restlessness, fatiguability and difficulty concentrating.

Within Beck et al.'s (1985) model, information-processing biases such as a selective attention to threat, overgeneralising and catastrophising increases the intensity of the perceived threat and therefore maintains anxiety. Physiological symptoms may also be interpreted as a threat (e.g. having a heart attack or going mad – i.e. anxiety sensitivity) and therefore may serve to maintain anxiety. Evidence from experimental studies provides support for Beck's suggestion that interpretation biases play a part in

anxiety (Mathews, & MacLeod, 1994; Mogg et al., 1992; Stopa & Clark, 2000). Behavioural responses to anxiety such as avoidance of future triggering events or escaping from the anxiety-provoking situation often develop. However, behavioural responses serve only to prevent disconfirmation of NATs and dysfunctional assumptions and therefore increase the belief in the danger schema and maintain anxiety.

What is apparent from Beck's theory is that cognitions, emotions and behaviour are interactive constructs within anxiety. Different types of psychopathology have different outcomes in terms of behaviour, suggesting that the content of cognitions may also be disorder specific (Beck et al., 1985). This content-specific hypothesis would suggest that there are also different dysfunctional assumptions involved in different anxiety disorders and that these assumptions require different triggers to activate them. For example, an individual with SP may underestimate their ability to perform in social situations. Therefore, NATs about their social performance are activated in social situations. Whereas individuals with GAD underestimate their ability to cope with more general life stresses and there may be numerous situations that trigger their NATs. This has led on to the development of specific models for specific anxiety disorders such as P/A (Clark, 1986), SP (Stopa & Clark, 1993), OCD (Salkovskis, 1985) from Beck et al.'s (1985) model of generalised anxiety. Central to all of these models is an information-processing bias (Beck & Clark, 1997; Beck et al., 1985).

At the time that this model of anxiety was proposed by Beck et al., (1985) evidence was based on adult studies and it was assumed to apply to children and adolescents.

Although Beck's et al.'s (1985) model of anxiety incorporates early experiences into the formulation for developing anxiety it fails to address this aspect in as much detail as the other components of the model. Secondly, as many adult reports of anxiety reveal an onset in childhood it seems vital that models address this area of development in more detail. Consequently, research aiming to aid the early diagnosis and understanding of anxiety in children has produced some influential models of anxiety in children.

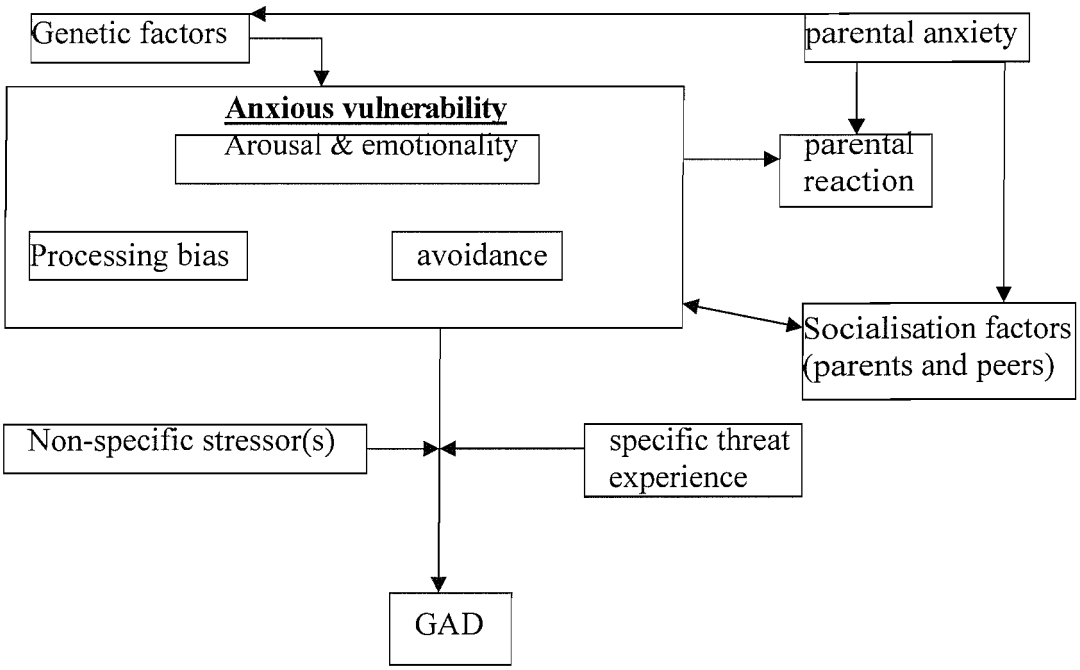
4. The Development of Childhood Anxiety Disorders

Although adult models address the issue of early experience as a contributing factor to the development of anxiety, they tend to focus on the resultant maladaptive schemas and not on the type of early experience that may play a causal role. Secondly, adult models that include early experiences have been built using adults retrospective recollections which may not be as reliable as developing a model using children. Building on from adult models of anxiety disorders, models specific to the development of anxiety in children have been proposed. These models are similar to Beck et al.'s (1985) cognitive model of adult anxiety in that they address similar maintaining factors (Bogels, Snieder, & Kindt, 2003; Kendall, 1985; Hadwin, Frost, French, & Richards, 1997) but also focus more specifically on early experiences such as parent-child relationships (Chorpita & Barlow, 1998; Hudson & Rapee, 2001 Muris, Meesters, Merckelbach, & Hulsenbeck, 2000; Rapee, 2001).

Research investigating the hierarchical nature of different anxiety disorders has suggested that GAD loads greatest on a higher order factor of emotional disorders

(Brown, Chorpita, & Barlow, 1998). GAD has been proposed to be the central anxiety disorder which underlies to some extent most of the other subtypes of anxiety as outlined in DSM-IV (APA, 1994) and is therefore presented as a basic model for which to conceptualise anxiety in children and adolescents (Brown, Barlow, & Liebowitz, 1994; Rapee, 2001). One model that attempts to incorporate the main factors which have been empirically demonstrated to play a role in the development and maintenance of GAD in children will be presented (Rapee, 2001). Although this model (Figure 1) is presented for GAD, Rapee (2001) suggests that it may apply to any childhood anxiety disorder. The importance of developing models that conceptualise childhood anxiety disorders is that they aid the diagnosis of anxiety and direct the type and content of tools used to assess anxiety.

Figure 1
Developmental Model of Generalised Anxiety Disorder in Children (Rapee, 2001)



Rapee (2001) incorporates information processing bias and the individual's belief in their lack of resources to cope with a threat as factors pertinent to the maintenance of

anxiety disorders. These factors form the backbone of adult models of anxiety (Beck et al., 1985) and have been supported in the child literature as also serving to maintain anxiety (Bogels et al., 2003; Hadwin et al., 1997). Rapee's (2001) model of GAD appears to focus more specifically on the early experiences aspect of Beck et al.'s (1985) cognitive model of anxiety in adults. Rapee suggests that this early vulnerability underlies the development of GAD at any stage of life. The model integrates the family system and early experiences as precipitants to anxiety, with these maintaining factors. Child models that attempt to address causal factors of anxiety have, in the past, looked either at parent-child relationships or temperamental factors as separate theories, but both are now considered to play a role in vulnerability and maintenance (Manassis & Bradley, 1994; Rapee, 2001). Rapee's model recognises that the development of anxiety in children has several potential underlying causes and attempts to address these in the model. Therefore, the model incorporates temperament factors, attachment and parent-child interactions into his model under genetic factors, parental anxiety and parental reactions which contribute towards an anxious vulnerability. Environmental factors such as non-specific stressors, threat experiences and socialisation are then considered by this model to lead to the development of GAD in a child who has developed an anxious vulnerability. These aspects of the model will be explored in greater depth in the following sections.

4.1 Temperamental Factors

Temperament is a personality style that develops early on in infancy incorporating; emotionality (distress) and sociability (preference for being with others) and these elements remain relatively stable throughout life (Buss & Plomin, 1984).

Temperament is thought to stem largely from biological inheritance (Lonigan & Philips, 2001). Evidence for the involvement of temperament in the development of anxiety comes originally from retrospective reports from adults and more recently from cross-sectional studies, using mothers to report on their child's behaviour in the first few years of life (Lonigan, Hooe, David, & Kistner, 1999). These reports have proposed that the specific temperamental feature proposed to be involved in anxiety is behavioural inhibition (BI). BI refers to an external display of psychological (distress, avoidance) and physiological (hyperarousal) states of uncertainty in the face of new/ambiguous situations or people (Kagan, 1997). Children who demonstrate high levels of BI have been found to be more likely to develop an anxiety disorder in later childhood (Lonigan et al., 1999).

4.2 Attachment Theory

Attachment theory proposes that childhood anxiety develops from the attachment style children develop with their primary care-givers (namely the parents) in infancy (Bowlby, 1973). An insecure attachment develops when a parent is unable to or inconsistently meets the child's needs in response to its distress. The child learns from this that their needs will not be met reliably by others resulting in avoidance or attention seeking behaviour. This behaviour leads to a negative response from the parent(s), which in turn may serve to reinforce the child's tendency towards encoding threatening information (MacLeod, 1991). Research supports the theory that insecurely attached (ambivalent or avoidant) infants go on to develop more fears and greater levels of anxiety than children who are securely attached (Muris, Mayer, & Meesters, 1999; Muris et al., 2000; Warren, Huston, Egeland, & Sroufe, 1997).

4.3 Parent-child Interaction

Parent-child interaction refers to the reciprocal nature of parents' responses to their child's anxious behaviour. Anxious parents tend to have anxious children forming the genetic vulnerability component to this model. Vulnerability may also be exacerbated by social learning through modelling of parents' anxious or avoidant behaviours. How parents respond to their child's anxious behaviour is dependent upon their own level of anxiety. An anxious parent typically responds in an overprotecting and controlling manner when attempting to help the child in a novel situation (Rapee, 2001). This prevents disconfirmation of the situation being threatening through avoidance of the novel situation and maintains the child's belief that they do not posses the relevant coping skills. This theory has supportive evidence for these factors from observational studies of mothers interacting with their children in stressful situations (Chorpita, & Barlow, 1998; Hudson & Rapee, 2001; Muris et al., 2000; Rapee, 2001). Evidence for the same interaction with fathers is at present unavailable.

Rapee's (2001) model identifies over-involved anxious parents as an area for intervention. Parents who can allow their child to approach novel situations and encourage them to problem solve themselves will enhance their child's beliefs in their coping abilities and decrease the amount of threat associated with such situations (Rapee, 2001). This positive form of interaction may serve as a protective factor against the development of anxiety.

4.4 Environmental Factors

Children whose parents may restrict their socialisation inadvertently through avoiding potentially new and distressing social situations may be drawn towards unchallenging

peer groups as a result. Although, Rapee (2001) admits that there is no available research into the effect of peer groups on anxiety he feels it is reasonable to hypothesise that anxiety may be maintained in children who socialise with other anxious children as they feel their behaviour is acceptable and the norm.

Rapee (2001) suggests that it is not that anxious children experience a greater number of significant life events or stressors than non-anxious children but that their vulnerability leads them to interpret them as more distressing and therefore classifies these environmental factors as precipitators of anxiety disorders (i.e. risk/resilience factors).

This model does not claim to exhaustibly incorporate all of the factors involved in the development and maintenance of anxiety in children. Nor does it suggest which factors may play more of a role than others depending on individual differences and the causality is difficult to determine. However, this model is an improvement on previous childhood models (Chorpita & Barlow, 1998; Hudson & Rapee, 2001; Muris et al., 2000) in that it does acknowledge different factors that may play a role in the development of anxiety. Secondly, it provides a child-specific framework for a clinician to guide their assessment of anxiety. Empirical evidence supporting these different causal pathways is still limited and Rapee (2001) proposes the model as a way forward for research to add to the understanding of the development of anxiety in children and for empirically tested treatment models to evolve from it.

Childhood models of anxiety such as Rapee's (2001) model of generalised anxiety incorporates childhood specific risk factors such as temperament and attachment

styles and future research will need to consider these factors when developing treatment approaches. However, many children who possess these risk factors do not go on to develop anxiety and those who do may 'grow out' of anxiety disorders such as SAD or simple phobias (Barrett, 2001). When these anxiety disorders begin to distress the child to the point that they interfere with everyday functioning, treatment interventions need to be sought.

5. Treatment of Childhood Anxiety Disorders

The development of treatment programmes depends upon a good theoretical conceptualisation of a disorder. This conceptualisation therefore requires extensively tested hypotheses or models of anxiety specific to the client group, in this case children. From these models, a formulation of the problem can be developed to incorporate vulnerability, precipitating and maintaining factors as well as protective factors, which can be used to aid the development of assessment techniques and the treatment of anxiety disorders. Effective treatment can only be demonstrated by rigorous outcome studies using empirically validated diagnostic tools.

Cognitive behavioural therapy (CBT) has been demonstrated to be useful in treating anxiety disorders in children and adolescents although empirical support for its use with children under 6 years is lacking (Cartwright-Hatton, Roberts, Chitsabesan, Fothergill & Harrington, 2004). According to Barrett's (2001) review of the developmental literature, it is thought that younger children (aged 5-6 years) may not be able to understand the emotions of other people and may be unable to engage in the

metacognitive demands (thinking about their own thoughts) of CBT. This may mean that CBT approaches need to be extensively adapted for younger children and that behavioural approaches may take more of a precedence at this younger age. Individual factors would also need to be taken into account to allow for age differences in the development of these skills.

Recently there has been a move to extensively review the literature regarding treatment approaches for anxiety disorders in children and adolescents (Barrett, 2001, Carr, 1999; Cartwright-Hatton et al., 2004). From their reviews, it can be seen that there is a lack of robust research in this area and that sample sizes are relatively small. The literature suggests that some general treatment approaches are applicable to all anxiety subtypes (SAD, P/A, specific phobia, SP, OCD, and GAD), which have arisen from treatment approaches for anxiety in adults. These general treatment approaches include; psychoeducation (teaching children and their parents about the nature of anxiety), training to monitor symptoms (use of monitoring sheets to accurately record the occurrence of symptoms as they happen), relaxation techniques (such as breathing and muscle relaxation exercises), cognitive restructuring (challenging negative thoughts about triggers of anxiety symptoms and the experience of symptoms), reward systems (tokens or treats for managing anxiety symptoms), family and school involvement in treatment (providing a support system within the child's environment). However, the literature suggests that there are also specific approaches for the different subtypes of anxiety which improve the efficacy of treatment (Barrett, 2001, Carr, 1999; Cartwright-Hatton et al., 2004).

Childhood anxiety treatment literature is difficult to compare due to the different methodologies used. Control groups differ in that some are waiting list and others are placebo or other types of therapy. Secondly, where there may be outcome data, and in the rare occasions that follow-up data are available, there are a number of scales used in child research to quantify outcome and so a comparison is made difficult. A move towards a universally accepted anxiety measure would be helpful in research and would aid clinicians to assess their practice based on a greater sample of evidence that is comparable. This measure would need to be comparable to the diagnostic manuals such as DSM-IV (APA, 1994), in order for them to produce meaningful scores that can be used both in the diagnosis of an anxiety disorder and as an outcome measure for treatment.

5.1 Developmental Issues Pertaining to Treatment

The lack of research into the treatment of childhood anxiety disorders implies that in the past clinicians have applied adult models of treating anxiety when working with children. In an adult mental health setting it is normally the case that the clinician works solely with an individual, however children usually require a systemic approach, as they are more dependent on their families and peers than adults are and the models of child anxiety implicate families in the development and maintenance of anxiety. Over recent years there has been a recognition that there was a need to develop child models of anxiety to incorporate development and maintenance factors pertinent to childhood, there has also been a shift to recognise these factors in treatment as well. For example, Rapee's (2001) model identifies parents as playing a significant role not only in the maintenance of children's anxiety but also as an

avenue for intervention. This is an important consideration when looked at from the debilitating nature of anxiety across the lifespan and that psychopathology in adulthood has links with childhood anxiety in particular (Barrett, 2001).

As demonstrated through the literature there are some general treatment components for anxiety disorders such as relaxation training and self-coping statements. Many are disorder specific, such as exposure-response-prevention in OCD (Salkovskis & Kirk, 1989), group CBT and school reintroduction in SP (King et al., 1998) and systematic desensitisation in specific phobias (Heard, Dadds & Conrad, 1992) and this evidence highlights the need for the clinician to be able to discriminate between different types of anxiety disorder to be able to best determine which treatment plan to employ. Where the evidence is lacking or not particularly robust in the literature regarding childhood anxiety, the literature pertaining to anxiety disorders in adults is more explicit in the differences of treatment for different anxiety disorders (Cartwright-Hatton et al., 2004; Lindsay, 1994). This treatment specificity implies that the assessment procedure is extremely important in enabling a clinician to identify and therefore choose the most appropriate form of intervention. The tools a clinician has available to them at the assessment stage of the process must therefore be accurate and child specific.

6. Assessment of Anxiety in Children

The treatment of anxiety relies upon good assessment strategies (Spence, 1998). Ideally, a clinician's assessment 'toolkit' would consist of; a diagnostic interview, direct observation in multiple settings (such as home, school, clinic etc.), rating scales

from multiple informants (such as mother, father and teacher) and self-report questionnaires from the child, (Essau & Barrett, 2001; Spence, 1998). These components of the clinician's 'toolkit' will be evaluated in the following section.

The outcome of treatment interventions is often related to the information gained in the initial stages of contact with a clinician, which leads to a diagnosis being made (Essau & Barrett, 2001). The developmental literature identifies the importance of early diagnosis of anxiety in children in order to prevent or minimise the development of further psychological problems in later life (Essau et al., 2000). With the recognition that developmental models of the psychopathology of anxiety are required, there has also been a drive towards reviewing treatment and assessment methods of anxiety with children. The publication of DSM-III-R (APA, 1980) saw the first inclusion of two anxiety disorders (overanxious disorder and avoidant disorder) specific to children and adolescents. This enabled clinicians to focus upon being able to discriminate between anxiety disorders and other syndromes, such as depression, when assessing children (Essau & Barrett, 2001). Overanxious and avoidant anxiety disorders are now classed under GAD and SP, respectively, in DSM-IV (APA, 1994).

DSM-IV provides clinicians with a guideline to the presentation of the different anxiety subtypes in children. However, only SAD is included under the 'Disorders Usually First Diagnosed in Infancy, Childhood, or Adolescence' section, despite acknowledging that anxiety disorders such as P/A and SP typically have an onset during adolescence or childhood (APA, 1994). Therefore, when clinicians are trying to diagnose anxiety disorders other than SAD in children the developmental

differences in symptom presentation are not so well covered. This may lead to uncertainty about diagnosis. However, Spence (1997) argues that the development of scales with sound psychometric properties such as The Screen for Child Anxiety Related Emotional Disorders (SCARED; Birmaher et al., 1997) and The SCAS (Spence, 1997, 1998) which incorporate subscales reflecting the DSM-IV classifications provide evidence for these subtypes of anxiety being applicable to children. Therefore, it would seem necessary that to aid the diagnosis of anxiety disorders in children, scales such as the SCARED or the SCAS should be used as they have empirical evidence supporting their ability to detect these disorders in children.

Clinically, scales like the SCARED and SCAS are usually only administered by mental health professionals following a referral from an external source such as a General Practitioner or a teacher. Therefore, there may be a requirement for the use of these scales earlier on in the diagnostic process. This would then improve the detection of anxiety disorders at an early stage and free up a clinician to use the remaining diagnostic tools to clarify the diagnosis and plan effective interventions.

6.1 Diagnostic Interview

The most efficient way in clinical practice and research to obtain information about a child's symptoms is through a diagnostic interview with both the child and the parent(s) present (Nauta et al., 2004). Diagnostic interviews are usually very structured with exact wording and a specific order of questions that are designed to assess the presence/absence of anxiety symptoms in general and specific to the

subtypes of anxiety. This structure makes the diagnostic interview a reliable and valid tool for use in diagnosis and means that lay people can be trained to administer them.

The Anxiety Disorder Interview Schedule for Children (ADIS-C; Silverman, & Albano, 1996) is an example of a diagnostic interview based on the DSM-IV classification system. However, the length of time it takes to conduct an interview (often in excess of an hour) limits its practical use within the research setting for large scale studies and in the clinical setting this structure may be found to be too restrictive. It has been suggested that a quicker way would be to screen children and adolescents such as with a rating scale or questionnaire in order to identify levels of anxiety and these identified children can then be further assessed for a specific anxiety diagnosis with a diagnostic interview (Nauta et al., 2004).

6.2 Behavioural Observation

This method allows for the child to remain in their normal environment and for the assessor to make inferences from the verbal and non-verbal behaviour that they exhibit (Essau & Barrett, 2001). The benefit of this type of assessment is that it allows the assessor to observe the behaviour in question, which makes it ecologically valid. The child feels more at ease, in some cases unaware of the assessment, which helps to reduce the distress that an assessment process may cause. However, in research practice with a large-scale study this would require multiple assessors or lay-people to be trained to maximise inter-observer reliability. Observation scales that have demonstrated good inter-rater reliability such as The Preschool Observation Scale of Anxiety, (Glennon & Weisz, 1978) have not correlated well with children's self-

reports of anxiety, which suggests that anxiety may be experienced internally by the child differently to how they express it externally. This method may be more useful when assessing younger children for anxiety who may act-out or externalise their anxieties more than their older counterparts and who are les able to articulate their internal states.

6.3 Informant Rating Scales

Albeit with limitations it is generally accepted that the use of multiple informants is part of good practice when assessing children, as each informant can provide information from a different aspect contributing to a greater overall picture of the symptomatology (Essau & Barrett, 2001; Nauta et al., 2004). The process is much quicker and inexpensive compared with diagnostic interviewing or behavioural observation. The Child Behaviour Checklist (Achenbach & Edelbrock, 1983) is probably the most widely used scale in clinical practice and research as it consists of parent, teacher and child versions for completion. However, it is widely acknowledged that parent and child reports of anxiety display a poor correlation on anxious symptomatology (Achenbach, McConaughy & Howell, 1987; Engel, Rodrigue & Geffken, 1994; Mesman & Koot, 2000; Nauta et al., 2004) sometimes as low as $r = 0.25$ on parent-child agreement. This appears to be the case regardless of which parent reports on the scale or if both report, although mother-father correlations are high (Engel et al., 1994). Therefore, it can be inferred that there are no advantages to interviewing one parent over another and that it is probably unnecessary to ask both parents to complete rating scales.

Parents and teachers only appear to be reliable informants when the child's levels of anxiety are so high that they begin to externalise their distress behaviourally (Essau & Barrett, 2001; Nauta et al., 2004). Varying opinions exist regarding the relationship between the child's age and the extent of agreement between parents/teacher informants and children's self-report. Some studies claim that as children get older, parent-child agreement decreases (Rapee, Barrett, Dadds, & Evans, 1994). Whereas others have concluded that the opposite is evident (Edelbrock, Costello, Dulcan, Conover, & Kala, 1986). The onset of puberty and the resultant reduction in communication that some adolescents have with their parents may explain the reduction in parent-child agreement. As a child develops cognitively, they are more able to acknowledge the origin of their anxiety and able to communicate it to their parents and this may explain these contradictory findings.

Nauta et al. (2004) argue that a low agreement between parent-child responses should not discourage the clinician from using informants as they provide information from different aspects of anxiety such as the behavioural expression of anxiety. Nauta et al. (2004) have designed a new parent–report measure (Spence Children's Anxiety Scale-Parent Version; SCAS-P), based on the self-report questionnaire the SCAS (Spence, 1997, 1998). The SCAS-P has a parent-child agreement ranging between $r = 0.41$ to $r = 0.66$ in a sample of children with an anxiety disorder ($n = 484$) (Nauta et al., 2004). Similar to the SCAS, the SCAS-P can also discriminate between different categories of anxiety disorder. The authors recommend that although this scale has a much higher correlation than previous informant scales it should still be used in conjunction with self-report scales such as the SCAS (Spence, 1997, 1998) as the SCAS-P still

does not reach the recommended correlation of r = 0.70 for use in research or r = 0.80 for individual child assessment in clinical practice (Nunnally, 1978).

6.4 Self-report Questionnaires

The limitations that arise from informant rating scales being unable to measure the internal experience of anxiety by the child lead the clinician and researcher to the use of self-report questionnaires. These questionnaires take the form of likert-style responses to questions relating to frequency and type of symptoms which may cover the domains of thoughts, feelings and physiological arousal. Although a diagnosis would not be made solely on the responses of a self-report questionnaire, it is an invaluable tool in gaining a child's perspective of their anxiety symptoms (March & Albano, 1998). These types of questionnaires allow a clinician to gain a quick look at the presenting symptoms which will guide their further assessment in the right direction and are useful as an outcome tool to evaluate treatment interventions. In research and clinical practice, self-report questionnaires can be a quick tool for screening large numbers of participants/clients in the community for inclusion in research or for early detection of possible problems developing and therefore early intervention.

Self-report questionnaires are relatively quick and simple for a child to complete and in most cases are age-specific in design and language content. Very young children are unable to complete self-report questionnaires and so the clinician must revert to informant scales as previously mentioned.

The benefit of self-report scales is that they allow the child to complete the questionnaire without input from an adult. However, there is still a potential for an adult to influence or pressure a child to answer differently. This is one of the major limitations pertaining to self-report questionnaires in use for any age group. The need to answer questions framing the individual in a socially desirable manner (answering in a way that makes them look better or in a way that the individual feels the psychologist wishes them to answer) or worries about the consequences of their answers means that this method is not always reliable or accurate (Barrett, 2001). This also limits the use of the self-report questionnaire to children who have developed the cognitive skills to recognise their distress and communicate it via a questionnaire. Most self-report questionnaires are designed for use with children aged around eight and above due to this limitation. It could therefore be argued that self-report questionnaires are not adequate tools at detecting the early onset of anxiety disorders depending on where the age of onset is defined.

In the past, self-report questionnaires such as, the Revised Children's Manifest Anxiety Scale (RCMAS; Reynolds, & Richmond, 1978) and the State-Trait Anxiety Inventory for Children (STAI-C; Spielberger, 1973) have been criticised for not being child-specific, as they are simplified revisions of adult anxiety scales (March & Albano, 1998; Spence, 1998). Although children do experience the same anxiety disorders as adults there are developmental differences in symptoms as already outlined in this review and which are now incorporated into DSM-IV (APA, 1994). These traditional scales tend to measure the experience of anxiety on a general domain (Spence, 1998). For example, the RCMAS covers areas of anxiety such as at physiological anxiety, worry and social concerns and although it has good

psychometric properties, it is limited in its application as it is unable to discriminate between different subtypes of anxiety.

To address some of the limitations of questionnaires such as the RCMAS and STAI-C, The Fear Survey Schedule for Children – Revised (FSSC-R; Ollendick, 1983) was designed specifically for children aged 9-12 years old. This scale measures the intensity of fears in different categories such as school, home, social, physical, animals, travel, phobias and a miscellaneous section. It was revised from a five-point likert design to a three-point likert scale to enable the younger age range of children to be able to understand it better, although the authors recommend that children under the age of nine are assessed using a non-written method (Ollendick, 1983). This scale has good psychometric properties; it is stable over time (up to 3 months), has a high internal consistency and has been demonstrated as a valid measure when compared with the RCMAS (Gullone & King, 1992). However, the categories in this scale only begin to address the subtypes of anxiety categorised in DSM-IV and only measure the intensity of the symptoms and not the frequency.

The SCARED (Birmaher et al., 1997) was the first self-report scale developed in an attempt to measure children's anxiety in accordance with DSM-IV classifications. With 38-items covering subscales which the authors entitled as; P/A, GAD, SAD, SP, and school phobia (not in DSM-IV) it produced good internal consistency and test-retest reliability and has good discriminant validity between other disorders, such as depression and between anxiety disorders (Essau & Barrett, 2001; Spence, 1998). However, this scale was developed using a clinical sample and may not represent anxiety symptoms that are present in a community sample making this an untested

scale to use, at present, for screening large community samples for involvement in research or for early intervention.

At the time that the SCARED was being developed another scale, The SCAS (Spence, 1997, 1998) was being empirically tested using a community and clinical sample. The SCAS is reported to measure six different categories of anxiety disorder that correspond to the DSM-IV (APA, 1994) classification system, which is why this scale is now one of the more widely used self-report scales. Research suggests it to be one of the more reliable and valid tools available for both research and clinical purposes. Therefore, the next section will explore this research in more detail in order to demonstrate the SCAS' strengths and the discrepancies that remain in this assessment tool. Areas for future research to continue to improve this assessment tool will be discussed.

7. The Spence Children's Anxiety Scale

The SCAS (Spence, 1997, 1998) is a self-report scale developed specifically to measure symptoms of anxiety across the anxiety subtypes, described in DSM-IV, in the general population. It is a 44-item scale aimed at children aged 8-12 years old and provides a total anxiety score and six subscales with items which loaded most highly onto the six factors which Spence (1998) claims to reflect the six classifications of anxiety subtypes in DSM-IV; SAD, GAD/overanxious disorder, OCD, P/A, physical injury fears (PIF) and SP. There are six filler items within the scale that are positively worded (such as, 'I am popular among other kids my own age') to reduce the risk of a

negative bias in the reporting of anxiety symptoms. The questionnaire has a four-point likert scale to indicate the frequency that a child has experienced each particular item (from 0 = never to 3 = always). Interesting that the SCAS has a four-point scale and is designed for children as young as eight when the FSSC-R was revised from five to three-points in order for children as young as nine to be able to complete it.

The SCAS was developed using a large community sample (n = 2052) and demonstrated adequate psychometric properties for internal consistency (α 0.92), test-retest reliability (r = 0.60) and convergent validity (r = 0.70 with the RCMAS) (Spence, 1998). Divergent validity was measured comparing the SCAS with the Children's Depression Inventory (CDI; Kovacs, 1981). The correlations between the scores were significant (N = 218, r = 0.48) but the percentage of variance was quite low (23%) suggesting that the SCAS is an indicator of anxiety rather than depressive symptoms (Spence, 1998). To date the SCAS is the most valid and reliable scale available to screen community samples of children aged 8-12 years old for DSM-IV categories of anxiety. Spence (1998) has begun to demonstrate the convergent and divergent validity of the SCAS clinically but with a sample size of n = 25, further research is required in order to make this scale as robust for clinical samples as it is in community samples.

The findings by Spence (1998) also lend support to the literature that girls experience more symptoms of anxiety than boys except on the OCD subscale (no significant difference between genders) and that anxiety symptoms in general decrease with age but also that different subtypes of anxiety affect children at different ages. For

example, mean scores for SAD, OCD symptoms and P/A declined with age (Spence, 1998). However, SP symptoms appeared to increase from the age of 9 to 11. These findings are generally consistent with the current literature for community samples which lends further support for the validity and reliability of this scale in the general population (Anderson, 1994; Kashani & Ovraschel, 1990; Whitaker et al., 1990). However, it is indicated in the literature that panic disorder is generally rare before adolescence with age of onset being around 14 years old (Last et al., 1992; Weiss, & Last, 2001) which contradicts Spence's findings in this paper. Last et al. (1992) suggest that before adolescence internal sensations are generally attributed to external stimuli and so it is unlikely that the internal experience of panic would be an automatic response. However, Black and Robbins (1990) have found that P/A is present in children as young as four. Differences in methodologies may be responsible for these differences in prevalence rates and age at onset.

Spence's (1998) study with an Australian sample has been replicated in Belgium, South Africa, Netherlands, Germany and Japan (Essau, Muris, & Ederer, 2002; Essau, Sakano, Ishikawa & Sasagawa, 2004; Muris, Merckelbach, Ollendick, King, & Bogie, 2002; Muris, Schmidt, Engelbrecht, & Perold, 2002) in an attempt to replicate her findings regarding the psychometric properties of the SCAS.

7.1 Western SCAS Studies

The Belgium sample (Muris, Merckelbach, et al., 2002) (N = 521) found that internal consistency was reported as acceptable for all of the SCAS subscales except PIF (α 0.54) and that the mean scores on all of the scales were lower than previously published norms. See Table 1 for a comparison of the means. The SCAS displayed

good convergent validity (r = 0.84) with the SCARED (Birmaher et al., 1997) which also measures DSM-IV categorised anxiety subtypes. Girls reported more anxiety symptoms than boys but there were no significant correlations with the frequency of anxiety symptoms and age as reported in the Spence (1998) study, although this study only involved adolescents aged 12-18 which may account for the lack of effect of age on anxiety symptoms. At the time of publication of this study, the SCAS had not been normed for adolescents so it is difficult to compare the findings of this study to that of Spence (1998).

Essau et al. (2002) also compared the SCAS with the SCARED to determine their psychometric properties, within a German community sample of children aged 8-12 years (N= 556). Internal consistency was reported to be identical to that of Spence (1998) with the lowest score produced by the subscale physical injury (α 0.57). Girls significantly reported more symptoms of anxiety than boys and anxiety declined with age for the subscales SAD, and P/A similar to the findings of Spence, (1998). Anxiety increased with age for GAD in the German sample and similar to the Australian sample scores also increased for SP between the ages of 9 and 11. The mean total SCAS score (see table 1) was found to fall in the mid-range of norms reported in other studies (Spence, 1998; Muris, Merckelbach et al., 2002; Muris, Schmidt et al., 2002). Essau et al. (2002) draw tentative conclusions that the SCAS is reliable for use in large-scale community screening studies although its clinical use needs to be investigated further.

7.2 Non-Western SCAS Comparison Studies

Research is beginning to compare findings of children's anxieties across cultures in order to improve our theoretical understanding of the manifestation of anxiety and the effects that social values, upbringing and cultural practices and history may have. Previous studies of other anxiety scales (FSSC-R; Ollendick, 1983) have suggested that Asian children report higher levels of fears than Western children (Dong, Yang, & Ollendick, 1994). These differences may be due to restrictive child rearing and educational experiences in countries such as China where a greater emphasis is placed on children to be emotionally under expressive and to achieve high standards educationally (Dong et al., 1994). Historical differences, for example the impact of the Apartheid on different ethnical communities in South Africa may influence general living conditions and levels of stress and fear compared with countries that have not had such recent upheavals to their way of thinking and living (Muris, Schmidt et al., 2002).

Muris, Schmidt et al. (2002) compared the psychometric properties of the SCAS and SCARED in a community sample of South African children aged 8-12 years (N = 591) with a Western community sample of children from the Netherlands (N = 254). The authors found significant gender differences for all SCAS subscales including OCD symptoms, with girls reporting more symptoms than boys in South Africa and the Netherlands. They also found that all anxiety symptoms did decline marginally with age, which supports the original findings, produced by Spence (1998). Convergent validity was again reported as high within this sample (r = 0.76) providing further evidence to suggest the SCAS and SCARED are measuring similar

aspects of anxiety. A principal components factor analysis of this scale, however, only produced four factors (fear, social phobia, panic disorder and worry and compulsions) explaining 38.5% of the variance, instead of the six factors produced by Spence (1998), which accounted for 47% of the variance in her sample. The authors suggested that this gave evidence to support some but not all of the hypothesised anxiety categories of the SCAS.

Muris, Schmidt et al. (2002) provided interesting data regarding a non-western sample of children suggesting that cultural differences may determine the expression of anxiety to some degree. The South African sample was divided into four groups (Group 1: 100% black, lower socio-economic status (SES), Group 2: mixed race, low-middle SES, Group 3: 50% mixed race and 50% white, middle SES, Group 4: 2% mixed race, and 98% white, middle to upper SES). See table 1 for a comparson of the means. These norms are much higher than reported in Western samples. The Dutch sample from this study produced a mc lower mean total score, similar to the white South African group and other Western norms (Muris, Merckelbach et al., 2002; Spence, 1998). They also found that South African children tend to have more worries about being separated from their parents and compulsive behaviours than their Western counterparts.

Muris, Schmidt et al. (2002) suggest that the differences produced by the South African samples may be due to the cultural differences these children experience both in their upbringing, the level of their socio-economic background impacting on general living conditions and/or as a result of living in an environment that has been made stressful due to the aftermath of the Apartheid regime. Although Muris, Schmidt

et al. (2002) only found that some of the DSM-IV classifications of anxiety in the SCAS have cross-cultural validity, they concluded that it was a reliable and valid scale to assess anxiety in South African and Dutch children. This is an interesting finding which requires further research to determine whether the SCAS is sensitive enough to measure the six hypothesised categories of anxiety as Spence (1998) suggests or whether it is only measuring anxiety in general. It is also difficult to determine whether, based on the vast range of norms (25.2 - 46.4) between different South African demographics, the SCAS can be used to assess anxiety in all South African children.

Essau et al. (2004) conducted a study to examine the frequency of anxiety symptoms in an Asian and Western population of children aged 8-12 years. The SCAS has been shown to have a high internal consistency and convergent validity within a Japanese community sample (N=934) (Ishikawa, Oota, & Sakano, 2001). Essau et al. (2004) found that girls in both countries reported more symptoms of anxiety than boys and that age differences were apparent but these differed between countries. German children experienced higher levels of SAD, SP, OCD symptoms, and GAD compared with their Japanese counterparts. In both countries, SAD and P/A decreased with age (similar to findings from Australia, Germany, South Africa and the Netherlands) and GAD increased with age. These findings again suggest that P/A symptoms are experienced in younger children and contradict the literature suggesting that onset is in mid-adolescence.

Table 1 A comparison of mean SCAS scores between countries

Study	Country	Mean total SCAS score
Spence (1998) N = 2 052	Australia	31.3
Muris, Merckelbach et al., (2002) N = 521	Belgium	16.9
Essau et al, (2002) N = 556	Germany	22.2
Muris, Schmidt et al (2002) N = 591	South Africa (low SES)	43.4
	South Africa (low-middle SES)	46.4
	South Africa (middle SES)	45.1
	South Africa (middle – high SES)	25.2
Muris, Schmidt et al (2002) N = 254	The Netherlands	20.9
Essau (2004)	Japan	22.4
	Germany	22.9

The mean total SCAS score for Japan and Germany was similar to the earlier large-scale study of German children (Muris, Schmidt et al., 2002). These means fall within the mid-range of earlier reported total scores for other countries and suggest that in general, Japanese and German children experience similar levels of anxiety but that within the subtypes of anxiety, there are greater differences. Confirmatory factor analysis revealed that a five-factor model, which was similar for both Japan and Germany, produced the best fit of the data. In the German sample, GAD, SP and OCD symptoms could not be extracted as a single factor as they were in the original Spence (1998) study. In the Japanese sample, P/A split across the two factors of GAD and OCD. Again, this suggest that cultural differences may determine the expression of anxiety but what is interesting from this study is that this has now been demonstrated in a Western population too.

As Table 1 shows, there is a great variation in the mean total SCAS scores derived from various studies looking at different cultures. This highlights the need for normative studies to be conducted in each country it is intended for use in order to provide descriptive data that can be used to generate norms that are reflective and up to date within that country.

8. Summary

In the past, the diagnosis of anxiety in children has been based on formulations driven by adult models of anxiety. The use of adult models for treating anxiety in children

and young adolescents has been criticised for not addressing factors such as family systems, early attachment, temperament and the child's level of development. Over the past decade, research to include these factors has produced child specific models of anxiety. Treatment models such as CBT, that are age and developmentally specific can now stem from these developments. It is reasonable, therefore, to expect assessment methods to also reflect this need to be child specific. Self-report scales are important tools to gain vital information for diagnosis purposes, especially regarding internalising disorders such as anxiety, when assessing children generally from the age of eight and above. Simplified revisions of adult assessment tools are now being replaced by scales for children developed with current research in mind.

Different subtypes of anxiety disorders exist in both adults and children but often occur comorbidly with one another and there is a great deal of overlap between symptoms. It is necessary to be able to identify which anxiety disorder(s) children are experiencing as the development of the anxiety, the treatment method and outcome may vary as a result. Co-occurrence of anxiety disorders with depression is common although the literature suggests that anxiety symptoms usually predate depressive symptoms and that the symptoms and course of each disorder are different.

The existence of psychological problems in childhood is one of the single-most important predictors of psychopathology in adulthood. It is therefore vital that scales should exist to be able to assist in the diagnosis of anxiety at the earliest possible stage in order to implement early interventions. Extensive research needs to continue with child-report scales in the general population in order to test the hypotheses that they

do measure anxiety in the way they claim to. From this, more rigorous research with clinical populations can then take place.

From reviewing the literature based on the SCAS in both Western and Non-Western countries there appears to be the need for future research to explore the factor structure of the SCAS, as current research differs in opinion as to whether it measures 4, 5 or 6 different constructs of anxiety. It is also important when using a scale that its psychometric properties are accurate, recently developed to reflect the current population and can be demonstrated for the country in which it is intended to be used (Barrett, 2001; Ollendick et al., 1991). The psychometric properties of the FSSC-R have been demonstrated within Australian, American, Asian and British normal populations for this precise reason, (Ollendick, King, & Frary, 1989; Ollendick et al., 1991). By demonstrating the psychometric properties of the SCAS in additional populations, several questions may be answered. It will enable its relation to other constructs such as depression to be examined within that country (Ollendick et al., 1991). It will help to answer the question as to whether the scale is sensitive enough to measure the different subtypes of anxiety. It will provide clinicians with an instrument to compare children's anxiety with norms produced that are relevant to their own population (Svensson & Ost, 1999). It will add to the current literature base providing further psychometric evidence of its utility both in general and specifically to the population it was drawn from.

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RELIABILITY AND VALIDITY OF THE SPENCE CHILDREN'S ANXIETY SCALE FOR A UK POPULATION

This paper has been prepared for submission to 'Behaviour Research and Therapy'

(see Appendix A)

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Abstract

The reliability, validity and factor structure of the Spence Children's Anxiety Scale (SCAS; Spence, 1997, 1998) was evaluated using a large sample from the United Kingdom (UK) (N=607) of primary and middle school children. The SCAS demonstrated a high internal consistency (Alpha = 0.92) and the validity was supported by a number of findings. Firstly, girls displayed significantly higher levels of anxiety than boys and anxiety levels decreased with an increase in age, findings supported by previous literature. Secondly, the data supported the six-factor structure. The SCAS mean total score for the UK population was 33.3 (S.D. 18.3) which is consistent with that found in the original study examining the properties of the SCAS. This study concluded that the SCAS is an accurate tool for use within a UK child population. The clinical and research implications of these findings are outlined.

Key Words: anxiety, children, reliability, validity, factor structure

1. Introduction

The aim of this study is to establish whether the Spence Children's Anxiety Scale (SCAS; Spence, 1997, 1998) is a suitable tool for measuring anxiety disorders in a child population from the United Kingdom (UK) as defined by the Diagnostic and Statistical Manual for Mental Disorders – Fourth Edition (DSM-IV; American Psychiatric Association, [APA] 1994[1]). To date, the SCAS is one of the more widely used scales in research and clinical practice for the investigation and assessment of anxiety disorders in children. The use of this scale has been investigated for its generalisability to children in South Africa, The Netherlands, Belgium, Germany and Japan. These studies found that the psychometric properties were well supported in both western and non-western cultures but the factor structure did not always confirm the one produced by Spence (1997).

Anxiety disorders are the most common psychiatric disorders in children and adolescents often persisting through to adulthood and increasing the risk for the development of further psychiatric disorders (Berstein, Borchardt, & Perwein, 1996). It is important to be able to have a tool that can facilitate the assessment of anxiety in children. There would be clinical gains from being able to use a tool that can identify different subtypes of anxiety and to be able to discriminate between a clinical and non-clinical population. This would allow the appropriate treatment method to be selected for the appropriate anxiety disorder and would be able to be used as an outcome measure for treatment. This would provide further supporting evidence that different anxiety disorders are experienced by children and would therefore lead to the

[1] It is acknowledged that the DSM-IV has been replaced by the DSM-IV-TR (APA, 2000) however there have been no updates to the anxiety disorders classification and as the literature reviewed in this paper uses DSM-IV this reference has been kept to avoid confusion.

continued development of child specific models of anxiety subtypes and subsequently child specific treatment methods.

1.2 Childhood Anxiety

The words anxiety and fear are often used interchangeably in the literature, although it is often helpful to be able to distinguish between these interrelated but separate constructs (Silverman, La Greca & Wasserstein, 1995). Anxiety is defined by DSM-IV (APA, 1994) as "an apprehensive anticipation of future danger or misfortune accompanied by a feeling of dysphoria or somatic symptoms of tension. The focus of anticipated danger may be internal or external" (p.782). Anxiety involves a complex response containing affective, cognitive, behavioural and physiological components (Beck et al., 1985; Silverman, La Greca, & Wasserstein, 1995). Fear can be viewed as a state of the physiological system preparing the individual for escape or confrontation. It is relatively common in childhood and is typically related to a child's cognitive ability to recognise and evaluate potential dangers in their environment (Mathews, 1990; Ollendick, Yule, & Ollier, 1991). Many fears develop in childhood because children become increasingly able to detect potential threats although they have not yet developed the ability to reason and evaluate the threat or how to cope with it (Ollendick et al., 1991). Persistence of fears over time, however, can have a maladaptive effect leading to the development of anxiety disorders and low self-esteem (Ollendick et al., 1991; Svensson, & Ost, 1999; Vasey, Crnic, & Carter, 1994).

Epidemiological studies report the prevalence rates of anxiety disorders in children and adolescents which are severe enough to interfere with their daily functioning, at

around 8-12% (Berstein et al., 1996). Anxiety is associated with the disruption of daily life in several areas such as peer relationships, family relationships, leisure time activities and school functioning (Essau et al., 2000; Van Ameringen, Mancini, & Farvolden, 2003). If anxiety disorders are left untreated in childhood, they can persist through to adolescence and adulthood and become a risk factor for the development of other psychiatric disorders such as depression and substance misuse in adulthood (Essau et al., 2000; Wittchen, & Essau, 1994). Therefore, it is of great importance to identify clinically anxious children as soon as possible in order to provide them with appropriate interventions.

Over the past twenty years, there has been an increasing contribution to child anxiety research. This has been driven by the high prevalence of anxiety disorders within this age group (Essau et al., 2000). The empirical evidence has led to the consensus from researchers and clinicians that anxiety and various subtypes of anxiety disorders may exist in children and adolescents (APA, 2000). DSM-IV (APA, 1994) includes the following anxiety disorders that may occur in children and adolescents; separation anxiety disorder (SAD), panic disorder with or without agoraphobia (P/A), social phobia (SP), specific phobia, obsessive compulsive disorder (OCD), posttraumatic or acute stress disorder and generalised anxiety disorder (GAD). However, Brown, Chorpita and Barlow (1998) suggest that there may be a hierarchical nature to anxiety disorders and that GAD may underlie to some extent all of the anxiety disorder subtypes. This is supported by the large amount of overlap in the presentation of symptoms in these anxiety disorders both in adults and children (Anderson, 1994).

There are however developmental differences in anxiety symptoms that need to be considered when diagnosing anxiety in children and adolescents (Spence, 1998). The expression of anxiety disorders tends to reflect a child's level of development. For example, SAD in very young children is characterised by tantrums and crying where these behaviours might not be consciously related to thoughts of being left or harm coming to a parent. As a child ages, these symptoms may emerge as an avoidance to be separated from parents and may be expressed cognitively through worries about kidnapping, for example. Separation anxiety forms part of a child's normal development with their primary caregiver and is not usually considered to be a clinically relevant psychological problem in a child's early years (Ainsworth, Blehar, Waters & Wall, 1978). Therefore, it is important that a clinician is aware of these developmental issues so as not to diagnose an anxiety disorder inappropriately or to dismiss the early signs of an anxiety disorder developing.

Anxiety disorders normally begin in childhood or adolescence, although it is often the case that these anxiety disorders are missed or not presented to a clinician for diagnosis until adulthood (Wittchen & Essau, 1993). This is because it is usually the parents' responsibility to seek professional help for their children. Often this does not occur until the child's inner distress manifests itself behaviourally such as through school refusal, poor academic achievement, reluctance to leave home or an avoidance of certain situations (Choudhury, Pimentel, & Kendall, 2003; Last & Strauss, 1990; Spence, Rapee, McDonald, & Ingram, 2001). Despite high prevalence rates, few children receive treatment and a greater understanding of the manifestation of anxiety disorders is required (Kashani & Ovraschel, 1990; Muris & Meesters, 2002).

1.3 Assessment of Anxiety Disorders in Children

The treatment of anxiety relies upon good assessment strategies (Spence, 1998). Recently, researchers have attempted to develop assessment tools that are derived from empirical studies to assess anxiety symptoms amongst children. The outcome of treatment interventions is often related to the information gained in the initial stages of contact with a clinician, which lead to a diagnosis being made (Essau & Barrett, 2001).

Ideally, a clinician's assessment 'toolkit' would consist of; a diagnostic interview, direct observation in multiple settings (such as home, school, clinic etc.), rating scales from multiple informants (mother, father and teacher) and self-report questionnaires from the child, (Essau & Barrett, 2001; Spence, 1998). However, diagnostic interviews and observations require training and lengthy implementation and are not ideal for the purposes of screening large numbers of children. Informant-rating scales tend to have a poor correlation with child self-report scales. The development of the Spence Children's Anxiety Scale-Parent Version (SCAS-P; Nauta et al., 2004) appears to have overcome some of these difficulties with greater parent-child agreement on levels of anxiety and it is relatively quick to administer. However, informant rating scales in general still lack the sensitivity of detecting low levels of anxiety that could be addressed sooner before impacting too greatly on a child's daily routine (Essau & Barrett, 2001; Nauta et al., 2004). Although this is the ideal, in practice a clinician can rarely afford to engage the use of all of these diagnostic techniques. A simple, relatively quick tool to measure symptomatology such as a child self-report questionnaire is often the more readily used option.

Child self-report questionnaires have traditionally been downward extensions of adult scales such as the Revised Children's Manifest Anxiety Scale (RCMAS; Reynolds & Richmond, 1978) and the State-Trait Anxiety Inventory for Children (Spielberger, 1973). They are seen to be invaluable tools in their ability to allow children to directly report on their symptoms of anxiety and distress. However, these traditional scales only measure anxiety as a general construct and do not allow for the differentiation between different anxiety disorders. However, more recently, the Screen for Child Anxiety Related Emotional Disorders (SCARED; Birmaher et al., 1997) has been devised aiming to represent some of the different anxiety disorders in DSM-IV (APA, 1994). The subscales within the SCARED give this scale clinical advantages over the traditional anxiety questionnaires. However, this self-report questionnaire was developed using clinical populations only and does not provide norms for community samples. Therefore, its use at present is limited to the clinical setting rather than for screening community populations such as schools to identify children for early intervention.

1.4 The Spence Children's Anxiety Scale

The SCAS (Spence, 1997 1998) incorporates subscales reflecting six of the main anxiety disorders in childhood (SAD, SP, P/A, specific phobia/physical injury fears (PIF), OCD and GAD) and was originally developed with a large community sample (N=2052).

Research from various western and non-western countries have indicated that the psychometric properties of the SCAS are satisfactory for children between the ages of 8 and 17 (Essau, Muris, & Ederer, 2002; Essau, Sakano, Ishikawa & Sasagawa, 2004; Muris, Merckelbach, Ollendick, King, & Bogie, 2002; Muris, Schmidt, Engelbrecht, & Perold, 2002). The SCAS is both reliable and valid; it correlates strongly with the traditional childhood anxiety scales (such as the RCMAS) and is able to distinguish between children with and without clinical anxiety disorders (Muris, Merckelbach, et al., 2002; Essau et al., 2004). The proposed six factor structure of the SCAS (Spence, 1997) has not been consistently supported in the literature. Findings have varied between studies from four (Muris, Schmidt et al., 2002), five (Essau et al., 2002; Essau et al., 2004) and six factors (Spence, 1997, 1998; Muris, Schmidt & Merckelback, 2000). Reasons for these differences have not been addressed in depth but cultural differences have been proposed as potential factors that may affect the development of anxiety. The literature suggests that children's anxiety may reflect the social and family values of the culture within which the child lives (Muris, Schmidt et al., 2002; Essau et al., 2004). Cultural differences may affect the emphasis placed on a child regarding educational achievement and this is thought to be a contributing factor to the development of anxiety (Essau et al., 2004). In the UK there have been concerns expressed over the level of pressure placed on young children within education and the high levels of stress and anxiety that specific exam regimes place on young children (Connor, 2001).

1.5 Aims of the Study

The aim of this study was to examine the psychometric properties of the SCAS within a group of UK school children. Recently, the reliability, validity and generalisability of this scale has been demonstrated for boys and girls between the ages of 8 and 17 from Australia, The Netherlands, Belgium, South Africa, Germany and Japan (Essau et al., 2004; Muris et al., 2000; Muris, Merckelbach et al., 2002; Muris, Schmidt et al., 2002; Spence, 1997, 1998). It is important to determine a scale's psychometric properties in the country it is intended to be used otherwise it cannot be examined in relation to other psychological disorders such as depression and its use in clinical and community settings is limited without norms reflecting that population (Ollendick et al., 1991; Svensson & Ost, 1999).

The factor structure of the SCAS was examined in order to contribute to the existing empirical findings and endeavour to discover whether children's anxiety symptoms in the UK cluster into the same anxiety disorder categories as outlined in DSM-IV (APA, 1994). This would also allow a comparison to be made between levels of anxiety in the UK with other western and non-western countries.

2. Method

2.1 Participants and Procedure

Ethical approval was obtained through the University of Southampton's ethical committee (Appendix B). This study did not use a clinical sample, therefore medical ethical consent from the Local Research Ethical Committee was not required. Local Education Authority (Appendix C) approval was gained before approaching the local schools (Appendix D) and obtaining written informed consent from parents (Appendix E). Eighteen primary and middle schools from the Isle of Wight, South England were approached to take part in the study. These schools represented a range of different socio-economic areas although no information about the parents' socio-economic status was obtained. Instead, the approximate social grade was calculated from the catchment areas of each school using the 2001 census details (Department of Education and Employment, 2001) which can found in Appendix F. As it can be seen from Appendix F, the catchment areas of the schools reflect the general socio-economic status of England as a whole.

Participants were recruited from four of the primary and five of the middle schools initially approached (see Table 1 for age and gender distribution). Approximately 44% of the 1,395 parents contacted from these nine schools agreed to let their children participate. Verbal assent was gained from the pupils before asking them to complete the SCAS. All of these children agreed to take part.

The original sample consisted of 611 children (304 males and 307 females) between 8 and 12 years old. The children completed a brief demographic front sheet (Appendix

G) and the SCAS in their classrooms during regularly scheduled classes. Following distribution of the SCAS, a standardised set of instructions and explanation of the study was read aloud to the children (Appendix H). Questionnaire items were read aloud by the researcher whilst the children read along. The children could interrupt if questions arose and a research assistant was available to help the children when necessary. The children were not allowed to confer with classmates about their answers and it was made clear that all responses were confidential. Children were given a de-briefing letter to take home at the end of the class (Appendix I). Each of the participating schools were sent a summary of the research findings (Appendix J).

Subsets from the sample (12%) were involved in the test-retest aspect of this study. They represented a split of 58.9% boys and 41.1% girls. One class from each year group and from five different schools was selected in order to gain a representative sample. The retest sample consisted of 17.8% aged 8, 34.2% aged 9, 17.9% aged 10, 24.7% aged 11 and 5.5% aged 12 (mean age = 9, S.D. 1.2).

Table 1

Age and Gender of Participants

Age	Male	Female	Total	Percent
8	18	26	44	7.2
9	65	66	131	21.4
10	102	111	213	34.9
11	98	88	186	30.4
12	21	16	37	6.1
Total	304	307	611	100.0

2.2 Measures

The SCAS (Spence, 1997,1998 (Appendix K)) is a 44-item scale consisting of 38 items reflecting specific symptoms of anxiety and 6 positively worded filler-items to reduce negative answering bias. As part of the construction of the SCAS (Spence, 1997, 1998) the 38 items were independently judged to reflect the main DSM-IV (APA, 1994) anxiety disorders that may occur in children including SAD (items; 5, 8, 12, 15, 16, 44), P/A (items; 13, 21, 28, 30, 32, 34, 36, 37, 39), PIF (items; 2, 18, 23, 25, 33), SP (items; 6, 7, 9, 10, 29, 35) and GAD/overanxious disorder (items; 1, 3, 4, 20, 22, 24).

Each item is rated on a four-point likert scale in terms of its frequency i.e. never (0), sometimes (1), often (2) and always (3). The 0-3 ratings on the 38-anxiety items are summed to provide a total score, with higher scores reflecting higher frequencies of anxiety symptoms. The items can then be grouped into their subscales and scores calculated in the same way to produce subscale scores.

The SCAS was developed using a large community sample (N = 2 052) and was reported to demonstrate adequate psychometric properties for internal consistency (α 0.92), test-retest reliability (r = 0.60) and convergent validity (r = 0.70 with the RCMAS; Reynolds & Richmond, 1978) (Spence, 1998). The discriminant validity of the SCAS was demonstrated with comparisons between clinically anxious children (N=20) and control children (N=20) (Spence, 1998). These results showed that clinically anxious children scored significantly higher on both the SCAS total score

and the subscale score that best reflected the type of anxiety disorder they presented with (Spence, 1998).

2.3 Data Analysis

Prior to analysis, 10% of the data were checked by an independent person, for the accuracy of data entry, missing values and fit between their distributions and the assumptions of the analyses. Cases containing missing data were excluded if more than one item was missing for each subscale. If only one item was missing the mode score was inserted for that item taken from the whole group. Cases containing more than three items of missing data that contributed to the total score were also excluded. If fewer than three items were missing then the scores were corrected using the method described above. In total, scores for eleven participants were recoded and four participants were excluded from data analysis, reducing the participant pool to $N =$ 607.

The distribution of the data was analysed using skewness and kurtosis. As the skewness was not significant (<1.96) and the kurtosis value did not exceed or equal the cut-off value of 1 it was not necessary to transform the data and normality could be assumed.

Analysis of the data was conducted using SPSS (Version 12) and AMOS 5.0.

3. Results

The means and standard deviations for the total SCAS score as well as the subscales are presented in Table 2. The most frequently reported symptoms in the SCAS were related to generalised anxiety disorder and social phobia. The least common symptoms were related to physical injury fears.

Table 2

Mean scores and standard deviations of the SCAS in a sample of UK school children

SCAS	Number of items	Mean	(S.D.)
Total anxiety score	38	33.3	(18.3)
SAD	6	4.8	(3.8)
SP	6	6.4	(3.8)
OCD	6	6.0	(3.8)
P/A	9	5.2	(4.8)
PIF	5	4.2	(3.1)
GAD	6	6.7	(3.4)

Note: SAD = separation anxiety disorder, SP = social phobia, OCD = obsessive-compulsive disorder, P/A = panic disorder with or without agoraphobia, PIF = physical injury fears, GAD = generalised anxiety disorder.

3.1 Reliability

The internal consistency was calculated for the total score and the subscale scores for 607 children. The results showed that the SCAS has a high internal consistency, Cronbach's Alpha for the total score was 0.92 and the Guttman split-half was 0.90. These results are comparable to findings from other studies looking at the properties

of the SCAS (Essau et al., 2002; Muris, Schmidt et al., 2002; Spence, 1998). The internal consistency of the subscales was also acceptable. Cronbach's Alphas were 0.74 for separation anxiety, 0.72 for social phobia, 0.65 for obsessive-compulsive disorder, 0.81 for panic disorder and 0.74 for generalised anxiety. The only exception to this was the physical injury fears subscale, which produced an Alpha of 0.58.

Test-retest data was available for 73 children (12% of the sample) who were reassessed four weeks after the initial data collection (see Table 3). There were no significant differences in total scores $t_{72} = 1.45$, $p<0.15$. This suggests that the anxiety symptoms remained stable over this time period.

3.2 Validity

The validity of the SCAS was tested in two ways. Gender differences were tested as previous studies have found that girls report higher levels of anxiety than boys (Essau, et al., 2000). A finding that girls reported significantly more anxiety than boys would support the predictive validity of the scale. Significant gender differences were found for the SCAS total scores ($F (1, 607) = 8.31$, $p< 0.001$) and for all of the subscale scores except obsessive-compulsive subscale ($F (1, 607) = 1.29$, $p=0.26$). Girls displayed significantly higher levels of anxiety than boys except on the obsessive-compulsive subscale, where there was no significant difference. The finding that girls scored more highly on the scale than boys is consistent with previous studies using this scale (Essau et al., 2004; Muris et al., 2002; Spence, 1998) However, only one other study found that the obsessive-compulsive scale showed no significant difference between boys and girls (Spence, 1997).

Table 3

Mean scores, standard deviations and paired t-test results of the SCAS in a sample of normal British school children at initial data collection and at four-week retest (*N*=73).

		Time 1		Time 2			
	Number of items	Mean	(S.D.)	Mean	(S.D.)	t =	p <
Total SCAS	38	37.0	(19.7)	32.8	(20.1)	1.45	0.15
SAD	6	5.2	(4.2)	4.5	(3.8)	1.1	0.29
SP	6	6.8	(3.8)	6.5	(4.5)	0.39	0.70
OCD	6	7.6	(4.5)	6.3	(4.5)	1.9	0.06
P/A	9	5.8	(5.1)	4.5	(4.4)	1.7	0.09
PIF	5	4.4	(3.5)	4.3	(3.3)	0.39	0.70
GAD	6	7.2	(3.8)	6.6	(3.7)	1.1	0.28

Note: SAD = separation anxiety disorder, SP = social phobia, OCD = obsessive-compulsive disorder, P/A = panic disorder with or without agoraphobia, PIF = physical injury fears, GAD = generalised anxiety disorder.

Secondly, the association between age differences and anxiety levels were analysed as it is reported in the literature that levels of anxiety differ with age (Essau et al., 2004; Spence, 1997, 1998). For example, Spence (1998) reported that overall anxiety levels decline with age but specifically within separation anxiety, obsessive-compulsive symptoms and panic/agoraphobia. Spence (1997) also reported that anxiety scores increased with age for social phobia.

This study revealed that there was a small negative association between age and total SCAS scores ($r = -0.23$, $p<0.001$) and age and subscale scores. That is, anxiety decreased with increasing age across all but one of the subscales and the total score. There was a strong trend ($F(4, 607) = 1.99$, $p<0.095$), suggesting that generalised anxiety disorder may increase with increasing age. Overall, there were no significant interaction effects of age and gender on anxiety scores ($F(4, 607) = 0.49$, $p<0.74$).

Table 4

Means and standard deviations by age and gender for SCAS total scores

		Age					Combined ages
		8	9	10	11	12	
Males	Mean	36.2	33.4	29.1	24.8	23.4	29.4
	SD	(24.7)	(16.7)	(16.8)	(13.1)	(14.8)	(17.2)
	N	18	64	102	96	21	301
Females	Mean	47.2	40.0	39.6	31.7	34.8	38.7
	SD	(20.1)	(19.7)	(20.3)	(14.3)	(17.3)	(18.3)
	N	26	66	110	88	16	306
Combined genders	Mean	41.7	36.7	34.4	28.3	29.1	33.3
	SD	(22.4)	(18.2)	(18.6)	(13.7)	(16.1)	(18.3)
	N	44	130	212	184	37	607

Table 4 reports the means and standard deviations of SCAS total scores for each age and gender group. In order to provide normative data for use in clinical practice, mean

scores and standard deviations are reported for each age and gender group (Appendix K).

3.3 Factor Structure of the SCAS

In accordance with Spence (1998), a principal component factor analysis with varimax rotation was used to examine the factor structure of the SCAS. This was performed to see whether the proposed factor structure was upheld in a UK sample of children. The initial exploratory factor analysis generated eight factors (with an eigenvalue ≥1) explaining 50.3% of the variance. However, further exploration of the scree plot (Appendix M) demonstrated discontinuity after one factor.

To allow for a comparison with Spence's (1998) proposed factor structure a confirmatory factor analysis using six factors was conducted for the purpose of comparison with Spence (1998), which explained 44.8% of the variance. This is consistent with the six-factor structure explaining 47% of the variance produced by Spence (1998). In this study, six items failed to load significantly upon a factor (>0.40), these were items 14, 16, 19, 23, 37 and 39.

The six-factor solution showed a basic structure comparable to that reported by Spence, except for the social phobia scale. Spence (1998) found that only two items (7 and 30) cross-loaded across separation anxiety and social phobia and panic/agoraphobia and separation anxiety respectively. In the present study, the six-factor structure also showed two items loading significantly on more than one factor (items 2 and 3). As can be seen in Table 5, items loaded principally onto their hypothesised factors. This was particularly true for panic disorder and obsessive-

compulsive disorder. Items of generalised anxiety disorder and social phobia generally clustered onto one factor. Whereas items of physical injury fears and separation anxiety disorder spread across multiple factors.

3.4 Confirmatory Factor Analysis

Due to the inconsistencies with the factor structure in the literature (Essau et al., 2004, Muris et al., 2002) a confirmatory factor analysis using structural equation modelling was employed to further explore the data. This type of analysis may be more appropriate than factor analysis as it allows a higher order factor structure to be explored. Also, by exploring the data in this way it allows for a direct comparison with Spence (1997). The whole sample (N= 607) was used for this analysis. Using structural equation modelling, four models are going to be tested: one single factor to explore whether all of the SCAS items can be considered to be measuring just one aspect of anxiety; six uncorrelated factors to see whether the SCAS items loaded onto the factor that represents the aspect of anxiety it is hypothesised to measure; sic correlated factors exploring whether these six separate factors may also be interrelated; and six correlated factors loading onto one higher order factor model to explore the degree to which the intercorrelation between factors may be explained by a single, second order factor representing a general dimension of anxiety. (See Appendix N for the correlation matrix and the descriptive statistics for each SCAS item.)

The confirmatory factor analyses found a good fit of the data to the six correlated factors model and the six correlated factors loading onto one higher order factor

model in comparison to the other two models. The target coefficient was calculated to be 0.97, following a method outlined by Marsh and Hocevar (1985). This provides strong support for the higher order model as any value greater than 0.90 suggests that the higher order model is effective at explaining the covariance between first order factors. This supports the findings of Spence (1997) who found a target coefficient of 0.96 for the higher order model. (See Appendix O for the fit indices for each model)

Table 5

Results of the Factor Analysis of the SCAS in UK children (*N*=607)

SCAS item	Factor 1 GAD	Factor 2 SP	Factor 3 PA	Factor 4 SAD	Factor 5 OCD	Factor 6 PIF
1	**.62** (.61)					
3	**.40** (.50)	***.46***				
4	**.59** (.59)					
20	**.47** (.54)					
22	.39(.68)				***.43***	
24	**.42** (.66)					
6		(.60)		***.41***		
7		(.43)		***.41***		
9	***.60***	(.67)				
10	***.41***	(.56)				
29	***.52***	(.68)				
35	***.43***	(.48)				
13			**.68** (.44)			
21			**.54** (.67)			
28		***.64***	.34 (.47)			
30		***.43***	.24 (.59)			
32			**.52** (.76)			
34			**.63** (.54)			
36			**.52** (.69)			
37			.35 (.71)			
39			.35 (.51)			
5				**.60**(.55)		
8				**.62**(.63)		
12				.25 (.51)	***.44***	
15				**.62**(.58)		
16				.21 (.51)		
44				**.65** (.53)		
14					.35 (.52)	
19					.35 (.55)	
27					**.57** (.56)	
40					**.53** (.42)	
41					**.55** (.67)	
42					**.66** (.61)	
2				***.51***		**.42**(.48)
18		***.40***				.30(.60)
23						.22(.52)
25						**.54** (.41)
33						**.70** (.55)

Note: Factor membership is printed in boldface type (with a loading ≥0.40). Numbers in parentheses reflect loading of items from original scale (Spence, 1998).

SCAS = Spence Children's Anxiety Scale; GAD = generalised anxiety disorder; SP = social phobia; PA = panic disorder and agoraphobia; SAD = separation anxiety disorder; OCD = obsessive-compulsive disorder; PIF = physical injury fears.

4. Discussion

The aim of this paper was to examine the psychometric properties and factor structure of the SCAS in a sample of UK children. The results of the present study support both the reliability and validity of the SCAS. The mean total anxiety score for UK children was 33.3. This finding falls at the higher end of the range previously reported in past SCAS studies (Essau, Muris, & Ederer, 2002; Essau, Sakano, Ishikawa & Sasagawa, 2004; Muris, Merckelbach, Ollendick, King, & Bogie, 2002; Muris, Schmidt, Engelbrecht, & Perold, 2002). For example, in a large sample of Dutch children the mean total SCAS score was 18.1 (Muris et al., 2000), whereas in South African children it was reported as 41.1. Spence (1998) found in a large Australian sample of children that the mean total score was 31.3. There was no significant difference between the total mean score found in this study and that found by Spence (1998).

The internal consistency of the scale was high, with a Cronbach's Alpha of 0.92. This is consistent with previous findings (Spence, 1998; Essau et al., 2002, Muris Schmidt et al., 2002). The SCAS subscales also showed acceptable levels of internal consistency ranging from 0.58 for physical injury fears (PIF) to 0.81 for panic/agoraphobia (PA). Similar results have been reported by Spence (1997); the Alphas for each subscale were 0.60 for PIF, 0.70 for separation anxiety disorder (SAD), 0.70 for social phobia (SP), 0.73 for obsessive-compulsive disorder (OCD), 0.82 for PA and 0.73 for generalised anxiety disorder (GAD). Test-retest reliability with a small subsample of children revealed an acceptable level of stability in children's total scores over a four week period. This stability is consistent with Spence (1998). There were also no significant differences between subscale scores

over this period of time. The Spence (1998) study found that over a six month retest interval subscale scores were less stable suggesting that specific anxiety disorder symptoms may vary over time in a general population of children. However, it would seem that over a four week period, stability is maintained. This study did not examine the stability of anxiety disorders in a clinical population, therefore, it is not possible to generalise this finding beyond a community sample. Future studies focussing on the nature and changes of anxiety disorders in a clinical population over time would be an interesting study. It could inform the clinician about the nature of clinically diagnosed anxiety disorders, and aid treatment decisions in relation to the way in which outcome measures are used.

The predictive validity of the SCAS was supported by examining age and gender differences of the SCAS total and subscale scores. Significant gender differences were found for the SCAS total score and five of the six subscale scores. Mean scores were significantly higher for girls than boys, except for OCD where there were no significant differences. This result is consistent with findings by Spence (1998) and is in keeping with the literature in which higher rates of anxiety symptoms are found for girls compared to boys (Anderson, 1994). Significant age differences were found for the SCAS total and five of the subscale scores, with mean scores declining with age. The exception to this was GAD, where the results showed a small but significant increase in symptoms with age. Spence (1998) reports a significant decline of symptoms with age for SAD, OCD and PA. Essau et al., (2004) report similar findings with an increase in GAD with age and a decrease in PA and SAD symptoms with age.

The results of this study highlight two ways in which the structure of anxiety symptoms in UK children deviated from that found by Spence (1998). Firstly, an exploratory factor analysis generated eight factors which explained the greatest proportion of variance unlike the six factors produced by Spence (1997). The scree plot analysis revealed discontinuation after one factor suggesting only a general domain of anxiety was being measured by the SCAS. Secondly, although a confirmatory factor analysis of the SCAS did show a good fit of the data to a six factor structure the symptoms of GAD and SP loaded mainly onto the same factor. This result may not be surprising as the DSM-IV (APA, 1994) criteria for both GAD and SP have some similarities. For example, one of the criteria for GAD is "excessive anxiety and worry (apprehensive, expectation) about a number of events or activities (such as work or school performance)" p447 (APA, 1994). GAD is not usually limited to being embarrassed in public as in SP. The components of anticipation of a feared stimulus that leads to a significant interference in the child's daily functioning both in social and academic settings is however represented for both GAD and SP.

However, the remaining factors did come close to predicted categories. In particular symptoms of OCD, PA and SAD appeared to cluster into separate factors that were clearly related to DSM-IV (APA, 1994) defined anxiety disorders. The problematic nature of the title of the subscale 'physical injury fears' and the heterogeneity of the items may account for the spread of these items across factors. This subscale attempts to incorporate specific phobias which may be more applicable to children but which do not necessarily fall specifically under the theme of physical injury. It may well be that this subscale needs to be reworked either in terms of content or what it is aiming

to measure. These findings seem to support the factor structure of the SCAS as being representative of DSM-IV anxiety classifications.

Structural equation modelling of the present data supports the previous findings by Spence (1997,1998) to suggest that a model with six correlated factors provides a good fit of the data. Therefore lending support to the inclusion of the six subscales of the SCAS. The data indicated that there was a high level of intercorrelation between these six factors. A test of a higher order model (six first order factors and a single higher order factor) supports the view that a higher order factor of anxiety in general could explain the high intercorrelation.

For normative purposes, the SCAS is limited in that Spence (1997,1998) does not suggest any cut off points for clinical significance. However, if the accepted method of using 2 S.D. from the mean as a cut off were used, the total SCAS score cut off would be 65.98 using Spence's data (1998). In this study, a 2 S.D. cut off would be 69.9. Muris et al. (2000) are the only authors to produce 10% cut off scores for a combined sample of 7-12 year old children from the Netherlands. Their total 10% cut off was 42, which is lower than the 10% cut off produced in this study (10% cut off = 59 in the UK) but reflects their lower overall mean for the Dutch sample (mean total score 20.51).

As the treatment of anxiety relies upon good assessment strategies, it is good practice to investigate the applicability of such tools to the population in which it is to be used. The results of this study have highlighted that the SCAS is a reliable and valid tool for use within community populations and has the ability to be used for large scale

screening. This is consistent with findings from various western and non-western countries. Due to the ability to complete the SCAS in a relatively short time, this assessment tool can be used within early intervention programmes to assess children for participation and to monitor outcome. As the SCAS has demonstrated its psychometric properties in numerous studies, it would seem appropriate for researchers to begin using this scale consistently within treatment outcome studies. This would allow for a comparison of these studies and to further the development of child specific treatment protocols. The SCAS is currently designed to be used with children as young as 8-years-old, both because of the cognitive demands that a questionnaire requires and because at present there are not any norms for younger children. This scale could be adapted or read out verbally to a child to enable anxiety disorders to be detected at an even younger age. Therefore, referrals can be made and treatment can begin as early as possible to avoid future psychological problems from emerging.

4.1 Limitations

The interpretations of these findings are limited in several ways. Firstly, only school children aged 8-12 years old were included in this study, therefore the application of these findings to older or younger age groups and clinical populations is not addressed. Secondly, validity of the SCAS was only tested via its predictive capacity. Other aspects of validity such as convergent and discriminate validity could have been assessed but as there are a wealth of studies that have already proven these properties of the SCAS and due to the limitation of time in this study, this was not addressed. Thirdly, these findings were based solely on child self-report. It is widely

acknowledged within the literature that the best method to assess psychopathology in children is via the use of multiple informants (Essua & Barrett, 2001). However, these methods have proven to provide low agreement between parents, teachers and children and are poor at detecting low levels of anxiety in children (Esau & Barrett, 2001; Nauta et al., 2004). Therefore, as anxiety appears to be an internally driven experience and given the importance of early detection of anxiety symptoms to aid early intervention, a child self-report method was seemed to be justifiable in this study.

Future research will need to address the factor structure and to establish the psychometric properties of the SCAS within a clinical population in order to compare with those produced in a general population. As the current normative data produced by Spence (1998) and in this study are limited to 8-12 year olds, a wider age range needs to be assessed.

4.2 Clinical Implications

There is accumulating evidence to support the SCAS as a reliable and valid self-report tool. The SCAS is increasingly used by clinicians to screen children and adolescents for DSM-IV (APA, 1994) defined anxiety disorders and as a measure of outcome for treatment effects (Fonseca & Perrin, 2001; Muris, Mayer, Bartelds, Tierney & Bogie, 2001). Overall, the results greatly support the psychometric properties and factor structure of this scale in a general population. However, based on the factor structure findings of the current study, it would be wise to use the SCAS with caution in a clinical population. This scale would not be used alone for diagnostic purposes but

alongside clinical interviews with numerous informants. Therefore, although there were some cross-loadings of items across factors, the subscales are useful in a clinical setting to identify potential anxiety disorder subtypes and guide the diagnostic process. The SCAS can then be used clinically to point towards which interventions to target for a particular anxiety disorder. When comparing the data produced by this study with Spence (1998), the mean scores for total and subscales of the SCAS all fall within the S.D. produced by Spence (1998). Therefore, it may well be clinically justified to continue using the Australian norms for a UK population but with some caution.

For research purposes, the use of the total SCAS score alone would be more reliable than the subscale scores due to the apparent cross-loadings of some of the factors. However, the SCAS is still one of the most robust scales available to measure child anxiety and its consistent use within research to evaluate treatment outcome will allow for a development in this so far lacking area of psychological research.

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Appendix A

Submission guidelines for 'Behaviour Research and Therapy'.

Guide for Authors

Behaviour Research and Therapy For full instructions, please visit http://ees.elsevier.com/brat

Submission to the journal prior to acceptance Authors can submit their articles electronically via the Elsevier Editorial System (EES) page of this journal http://ees.elsevier.com/brat. The system automatically converts source files to a single Adobe Acrobat PDF version of the article, which is used in the peer-review process. Please note that even though manuscript source files are converted to PDF at submission for the review process, these source files are needed for further processing after acceptance. All correspondence, including notification of the Editor's decision and requests for revision, takes place by e-mail and via the Author's homepage, removing the need for a hard-copy paper trail.

Online submission is strongly preferred but authors can, in special cases, also submit via mail. Four copies of the manuscript, including one set of high-quality original illustrations, suitable for direct reproduction, should be submitted to **Professor G. T. Wilson, Psychological Clinic at Gordon Road, Rutgers, The State University of New Jersey, 41C Gordon Road, Piscataway, New Jersey, 08854-8067, USA**. Email: brat@rci.rutgers.edu. (Copies of the illustrations are acceptable for the other sets of manuscripts, as long as the quality permits refereeing.)

Submission of an article implies that the work described has not been published previously (except in the form of an abstract or as part of a published lecture or academic thesis), that it is not under consideration for publication elsewhere, that its publication is approved by all authors and tacitly or explicitly by the responsible authorities where the work was carried out, and that, if accepted, it will not be published elsewhere in the same form, in English or in any other language, without the written consent of the Publisher.

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Provide the following data on the title page (in the order given).

Title. Concise and informative. Titles are often used in information-retrieval systems. Avoid abbreviations and formulae where possible.

Author names and affiliations. Where the family name may be ambiguous (e.g., a double name), please indicate this clearly. Present the authors' affiliation addresses (where the actual work was done) below the names. Indicate all affiliations with a lower-case superscript letter immediately after the author's name and in front of the appropriate address. Provide the full postal address of each affiliation, including the country name, and, if available, the e-mail address of each author.

Corresponding author. Clearly indicate who is willing to handle correspondence at all stages of refereeing and publication, also post-publication. **Ensure that telephone and fax numbers (with country and area code) are provided in addition to the e-mail address and the complete postal address.**

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Arrangement of the article Subdivision of the article. Divide your article into clearly defined and numbered sections. Subsections should be numbered 1.1 (then 1.1.1, 1.1.2, ?), 1.2, etc. (the abstract is not included in section numbering). Use this numbering also for internal cross-referencing: do not just refer to 'the text.' Any subsection may be given a brief heading. Each heading should appear on its own separate line.

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Figure legends, tables, figures, schemes. Present these, in this order, at the end of the article. They are described in more detail below. High-resolution graphics files must always be provided separate from the main text file (see Preparation of illustrations).

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Examples: Reference to a journal publication: Van der Geer, J., Hanraads, J. A. J., & Lupton R. A. (2000). The art of writing a scientific article. Journal of Scientific Communications, 163, 51-59.

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Note that journal names are not to be abbreviated.

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Appendix B

Letter confirming ethical approval

University of Southampton

School of Psychology

University of Southampton
Highfield Southampton
SO17 1BJ United Kingdom

Tel +44 (0)23 8059 3995
Fax +44 (0)23 8059 4597

20 May 2005

Michelle Smalley
35 Victoria Drive East
Salisbury District Hospital
Salisbury
SP2 8QX

Dear Michelle,

Re: **Anxiety in Children in the UK: A Normative Study of the Spence Children's Anxiety Scale**

I am writing to confirm that the above titled ethics application was approved by the School of Psychology Ethical Committee on 20 August 2004.

Should you require any further information, please do not hesitate in contacting me on 023 8059 3995.

Please quote approval reference number CLIN/03/48.

Yours sincerely,

Kathryn Smith
Secretary to the Ethics Committee

Appendix C

Email confirming local education authority approval

-----Original Message-----
From: mls202@soton.ac.uk [mailto:mls202@soton.ac.uk]
Sent: 19 January 2004 15:18
To: @iow.gov.uk
Subject: Research

Dear Mr Faulkner

I'm a Trainee Clinical Psychologist with the University of Southampton and am hoping to conduct the research for my dissertation on the Isle of Wight. I have spoken to Dave Pearson who suggested I email you to see who at County Hall I need to contact in regards to getting permission to use Schools on the Isle of Wight for this research.

I am proposing to generate some normative data for the Spence Children's' Anxiety Scale (Spence 1997) which has never been done in the UK.

This scale is used widely by SpCAMHS to assess children's anxiety levels for diagnosis - however as there are no UK norms at present we assess children based on Australian data which may not be representative in the UK.

I have emailed Keith Lane to see if he can direct me to child and adolescent population statistics for the Isle of Wight. Grant Taylor (Consultant Child & Adolescent Psychologist -SpCAMHS) also suggested that I contact some headteachers to gauge how receptive they are to the idea.

All it will involve is sending out a letter to the parents of children aged 8-12yrs asking for their consent for me to come into school and administer the scale anonymously on a class-by-class basis. This should take no more than 10-20 minutes per class.

The idea is that if I get a sample of at least 250 community children we can look at the average scores to see if the cut off point for clinical anxiety is reflective of the UK.

I would be grateful if you could tell me whom to approach for consent at your office.

If you would like to contact me in person I can be reached on (Tues) (wed-fri) or on my mobile . I would be more than happy to bring my proposal and have a meeting to discuss this further.

Any help you can offer would be gratefully received. Thanks,

Michelle Smalley
Trainee Clinical Psychologist
University of Southampton

Dear Michelle

I have asked the Director about this now.....please go ahead. If you wish you can comment in your letter that the LEA has seen your proposal, when I have!

thanks

-----Original Message-----
From: mls202@soton.ac.uk [mailto:mls202@soton.ac.uk]
Sent: 29 January 2004 14:19
To: Faulkner, Rob
Subject: RE: Research

Dear Mr Faulkner

As requested I'm reminding you about speaking to the Director regarding my research - I am in the process of completing my proposal and will email you a copy within the week if this will help.

Michelle Smalley

Appendix D

School recruitment letter

-----Original Message-----
From: mls202@soton.ac.uk [mailto:mls202@soton.ac.uk]
Sent: 19 January 2004 12:28
To: .iow.sch.uk
Subject: FAO

Dear

I am writing to ask if School would be interested in helping me out with some research for my dissertation at Southampton University. I am proposing to generate some normative data for the Spence Children's' Anxiety Scale (Spence 1994) which has never been done in the UK.

This scale is used widely by CAMHS to assess children's anxiety levels for diagnosis - however as there are no UK norms at present we assess children based on Australian data which may not be representative in the UK.

Obviously, I will run this proposal via County Hall but in the meantime Grant Taylor (ConsultantChild & Adolescent Psychologist -SpCAMHS) suggested I contact some Headteachers to gauge how receptive you are to the idea.

All it will involve is sending out a letter to the parents of children aged 7-12yrs asking for their consent for me to come into school and administer the scale anonymously on a class by class basis. This should take no more than 10-20 minutes per class.

The idea is that if I get a sample of at least 250 community children we can look at the average scores to see if the cut off point for clinical anxiety is reflective of the UK.

As I've already said this email is just to gauge people's interest in participating. If you would like to have a chat I can arrange to come and have a meeting with you or you can try me on (wed-fri) or on my mobile .

Thanks a lot,

Michelle Smalley
Trainee Clinical Psychologist
University of Southampton

Appendix E

Letter to parents for participant consent

UNIVERSITY HEADED PAPER

Dear Parents,

I am a Trainee Clinical Psychologist with the University of Southampton. As part of my training course I am doing a research project to explore the development of worrying in children. For example, whether girls and boys differ in the amount they worry and if worrying changes as children get older. This research will also allow me to look at whether children in the UK worry more or less compared with children in other countries.

[Name of school] has agreed to participate. This project will involve your child filling out a questionnaire within class time as part of the school curriculum. All of the questionnaires will be anonymous (your child's name will not be on the questionnaire) in addition I will be the only person who has access to the completed questionnaires.

The overall finding of the study will be submitted as a research paper to the University of Southampton, and also may be published in an academic journal. A short report will be made available to your child's school after the study has been completed. It will not be possible to tell who has taken part in the study from any of these reports.

However, if you do not want your child to take part, please tick the relevant box below and they will not be given a questionnaire.

If you have any further questions please do not hesitate to contact me on the above telephone number.

Please can your complete the tear off slip blow and return it to the class teacher by_____.

Thank you

Yours faithfully

Michelle Smalley
Trainee Clinical Psychologist
University of Southampton

☐ I agree to let my child_____ (name) participate in this research.

☐ I do **not** agree to let my child_____ (name) participate in this research.

Signed _____
Name _____

Appendix F

Table Demonstrating Demographic Details of the Catchment Area Where Participants Were Drawn From

Appendix F – Table demonstrating demographic details of the catchment area where participants were drawn from

Catchment Area	Population	AB	C1	C2	D	E
Cowes	2 011	14%	26%	18%	25%	17%
Freshwater	2 303	17%	34%	18%	14%	18%
Lake	4 097	11%	32%	15%	18%	24%
Northwood	1 792	20%	32%	19%	13%	16%
Parkhurst	2 275	18%	28%	23%	20%	11%
Ryde	2 306	15%	29%	17%	15%	19%
ENGAND	38 393 304	23%	30%	15%	17%	16%

Note: AB = Higher and intermediate managerial/administration/ professional; C1 = Supervisor, clerical, junior managerial/administration/professional; C2 = Skilled manual worker; D = Semi-skilled manual worker and unskilled manual worker; E = State benefit, unemployed, lowest grade workers (Census 2001).

Appendix G

Front sheet for participant demographic information

FRONT SHEET

AGE:_____

BOY ☐

GIRL ☐

Practice Question:

Please tick the box under the word that shows how often this happens to you. There are no right or wrong answers.

	Never	Sometimes	Often	Always
I worry about going to new places	☐	☐	☐	☐

Appendix H

Instructions for participants

Verbal transcript to be read out before filling in the questionnaire.

Hello my name is Michelle. I am a Trainee Clinical Psychologist which means I am a student at the University of Southampton. In this study you will be asked to fill in a questionnaire about yourself. The questionnaire is about some worries that lots of children your age have. There are no right or wrong answers, try to answer them as honestly as possible. There is no need to write your name on the questionnaire as it is numbered.

Please fill out the front sheet first. When you have finished filling in the questionnaire please check that you have answered all of the questions and not left any out.

Neither your teachers nor your parents will see the answers you write. Only I will have access to the questionnaires. You do not have to take part in this study. If you do not wish to take part please feel free to use the paper provided for your own purpose.

Thank you for taking part in this study.

Appendix I

Participant de-briefing statement

Participant De-briefing Statement

What is the purpose of this study?

To look at worries that children have using the Spence Children's Anxiety Scale. This scale is used by Psychologists to find out which children may be feeling so worried that it stops them from being able to concentrate at school and who may be unhappy. This study has never been done with children from schools in this country before and I would like to know if British children are as worried by things as children in other countries.

Why have I been chosen?

You have been chosen to take part in this study because you are a pupil of School who have kindly agreed to take part. Other schools in this area are also being asked to take part.

Will anyone know how I answered the questions?

No. The questionnaire does not have your name on so I will not be able to tell who has filled it out. If you have found that any of these questions have raised any issues and you wish to talk to someone about this, please talk to your parents or teacher.

Can I see the results of the study?

As I won't have your name I will not know who has taken part in this study and who has not. A short report will be sent to your head teacher who will let children and parents look at it if they want to. Your class teacher will let you know when this report is available.

What will happen to the results of this study?

The results of this study will be written up and handed in to the University of Southampton as part of my Doctorate in Clinical Psychology. It may be written up and printed in an academic journal. No one will be able to tell that you took part from reading this report.

THANK YOU FOR TAKING PART IN THIS STUDY

Contact details: Michelle Smalley
Doctoral Programme in Clinical Psychology
Shackleton Building
University of Southampton
Highfield
Southampton
SO17 1BJ
Tel: (02380) 595321

Appendix J

Feedback report for participants

Dear

RE: Spence Children's Anxiety Scale: Feedback from Study

You may remember taking part in a study last year that involved children from your school filling in an anxiety questionnaire. In total 611 children took part from across the Island. The study has now been completed and the main findings are stated below.

What was the purpose of the study?

The research aimed to investigate levels of anxiety in children from the UK as measured by the Spence Children's Anxiety Scale (SCAS). Studies from various countries have aimed to investigate the SCAS and its application to various populations of children. Anxiety is one of the most common psychiatric disorders in children and adolescents and if left untreated can cause further problems later on in life. It is important for Psychologists to have access to scales which can identify anxiety in children and to have norms relating to their own country which are up to date. The main aim of this study was to establish whether the SCAS is a reliable and valid tool for measuring anxiety in UK children and to see if norms produced in Australia for the SCAS were applicable to a UK population.

What did the study find out?

The study found that the SCAS was a reliable and valid tool for detecting anxiety in children from the UK. Children from the UK do not appear to experience significantly higher levels of anxiety than children from Australia and therefore the norms can be used from the original scale. This is useful for Psychologists to know in terms of children from similar western countries experiencing anxiety in a similar way. This will also add to the support for the use of the SCAS in research to continue investigating treatment programs and their outcome.

Who will see the results of the study?

This study will be submitted as part of my Doctorate in Clinical Psychology at the University of Southampton. It will also be submitted for publication in an academic journal. All of the data contained within the study is anonymous so no one will be able to be identified.

I would like to thank you once again, for taking part in this study. I am unable to provide feedback on individual scores, as I did not record the names of any participants. If you have any questions please feel free to contact me at the above address.

Thank you.

Appendix K

Spence Children's Anxiety Scale

SPENCE CHILDREN'S ANXIETY SCALE (SCAS)

NFER-NELSON
INFORMING YOUR DECISIONS

Your name: _____ Date: _____

Please tick the box under the word that shows how often each of these things happen to you. There are no right or wrong answers.

	Never	Sometimes	Often	Always
1. I worry about things				
2. I am scared of the dark				
3. When I have a problem, I get a funny feeling in my stomach				
4. I feel afraid				
5. I would feel afraid of being on my own at home				
6. I feel scared when I have to take a test				
7. I feel afraid if I have to use public toilets or bathrooms				
8. I worry about being away from my parents				
9. I feel afraid that I will make a fool of myself in front of people				
10. I worry that I will do badly at my school work				
11. I am popular amongst other kids of my own age				
12. I worry that something awful will happen to someone in my family				
13. I suddenly feel as if I can't breathe when there is no reason for this				
14. I have to keep checking that I have done things right (like the switch is off, or the door is locked)				
15. I feel scared if I have to sleep on my own				
16. I have trouble going to school in the mornings because I feel nervous or afraid				
17. I am good at sports				
18. I am scared of dogs				
19. I can't seem to get bad or silly thoughts out of my head				
20. When I have a problem, my heart beats really fast				
21. I suddenly start to tremble or shake when there is no reason for this				
22. I worry that something bad will happen to me				
23. I am scared of going to the doctor or dentist				

Appendix L

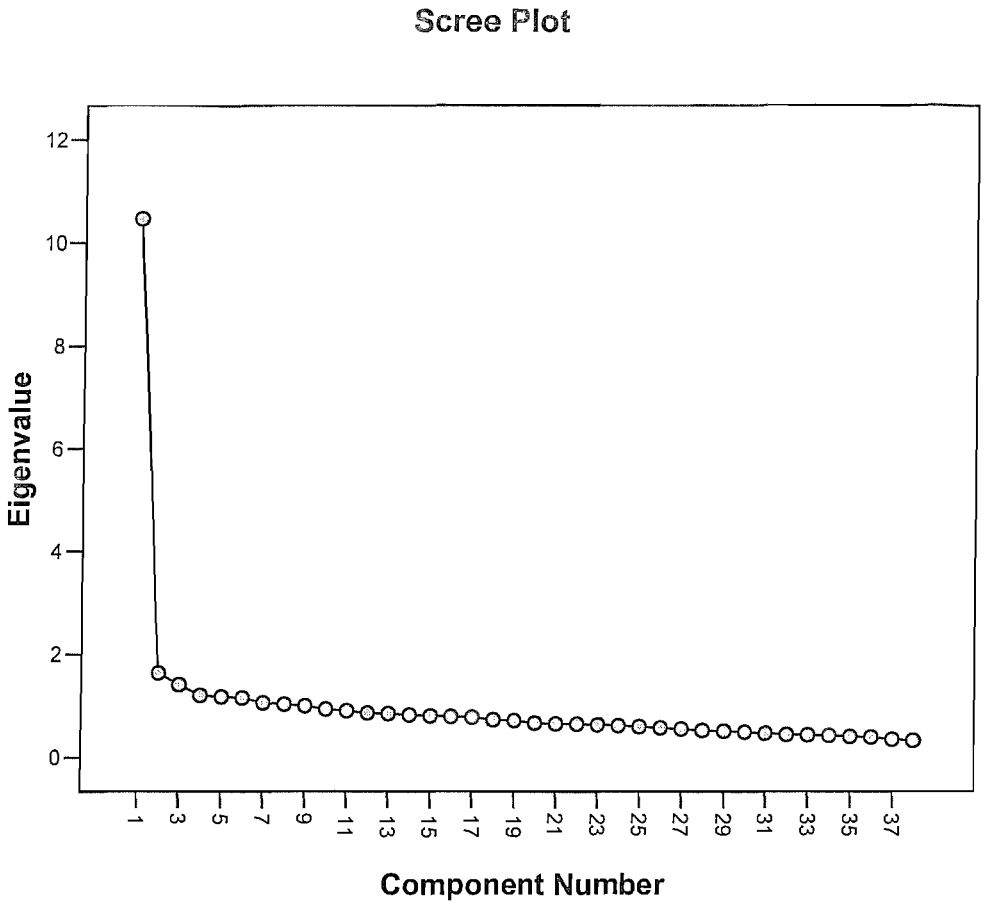
Spence Children's Anxiety Scale normative data for a UK population

Raw means and standard deviations by age and gender for each SCAS subscale score

			Age					
			8	9	10	11	12	Combined age groups
Separation anxiety disorder	males	Mean	5.8	4.8	4.0	3.0	3.0	4.1
		SD	(4.3)	(3.7)	(3.3)	(2.6)	(3.1)	(3.4)
6 items	females	Mean	*8.5*	*6.7*	*5.7*	*4.4*	*5.0*	*6.1*
		SD	(4.5)	(4.2)	(4.0)	(3.0)	(4.1)	(4.0)
	combined	Mean	***7.2***	***5.8***	***4.9***	***3.7***	***4.0***	***5.1***
		SD	(4.4)	(4.0)	(3.7)	(2.8)	(3.6)	(3.7)
Social phobia	males	Mean	*6.6*	*6.2*	*5.5*	*5.1*	*4.7*	*5.6*
		SD	(4.8)	(3.2)	(3.6)	(2.9)	(3.6)	(3.6)
6 items	females	Mean	*9.0*	*7.4*	*7.5*	*6.4*	*6.9*	*7.4*
		SD	(4.4)	(4.3)	(4.1)	(3.3)	(3.5)	(3.9)
	combined	Mean	***7.8***	***6.8***	***6.5***	***5.6***	***5.8***	***6.5***
		SD	(4.6)	(3.8)	(3.9)	(3.1)	(3.6)	(3.8)
Obsessive-compulsive disorder	males	Mean	*7.4*	*7.0*	*5.6*	*4.7*	*4.6*	*5.9*
		SD	(4.7)	(3.9)	(3.4)	(3.0)	(3.1)	(3.6)
6 items	females	Mean	*7.7*	*6.9*	*7.0*	*4.8*	*5.3*	*6.3*
		SD	(4.2)	(4.0)	(4.4)	(3.2)	(3.9)	(3.9)
	combined	Mean	***7.6***	***7.0***	***6.3***	***4.8***	***5.0***	***6.1***
		SD	(4.5)	(4.0)	(3.9)	(3.1)	(3.5)	(3.8)
Panic/agoraphobia	males	Mean	*6.8*	*5.3*	*4.2*	*3.8*	*3.7*	*4.8*
		SD	(6.7)	(4.8)	(4.5)	(3.8)	(3.5)	(4.7)
9 items	females	Mean	*7.4*	*6.4*	*6.5*	*4.7*	*6.1*	*6.2*
		SD	(5.1)	(5.4)	(5.4)	(3.4)	(4.6)	(4.8)
	combined	Mean	***7.1***	***5.9***	***5.4***	***4.3***	***4.9***	***5.5***
		SD	(5.9)	(5.1)	(5.0)	(3.6)	(4.1)	(4.7)
Physical injury fears	males	Mean	*3.2*	*3.9*	*3.7*	*2.7*	*2.1*	*3.1*
		SD	(3.8)	(3.0)	(3.2)	(2.3)	(2.1)	(2.9)
5 items	females	Mean	*6.7*	*4.9*	*5.1*	*4.6*	*4.4*	*5.1*
		SD	(3.2)	(3.2)	(3.3)	(2.7)	(2.5)	(3.0)
	combined	Mean	***5.0***	***4.4***	***4.4***	***3.7***	***3.3***	***4.2***
		SD	(3.5)	(3.1)	(3.3)	(2.5)	(2.3)	(2.9)
Generalised anxiety disorder	males	Mean	*6.4*	*6.3*	*6.0*	*5.5*	*5.3*	*5.9*
		SD	(4.1)	(3.2)	(3.4)	(2.9)	(3.1)	(3.3)
6 items	females	Mean	*8.0*	*7.7*	*7.8*	*6.8*	*7.1*	*7.5*
		SD	(4.1)	(3.8)	(3.5)	(3.0)	(3.2)	(3.5)
	combined	Mean	***7.2***	***7***	***6.9***	***6.2***	***6.2***	***6.7***
		SD	(4.1)	(3.6)	(3.5)	(3.0)	(3.2)	(3.5)

Appendix M

Scree plot of factor analysis


Scree Plot
Eigenvalue
12
10
8
6
4
2
0
1
3
5
7
9
11
13
15
17
19
21
23
25
27
29
31
33
35
37
Component Number

Appendix N

Correlation Matrix and Descriptive Statistics for Each SCAS Item

```
CORRELATIONS
  /VARIABLES=Q1 Q2 Q3 Q4 Q5 Q6 Q7 Q8 Q9 Q10 Q12 Q13 Q14 Q15 Q16 Q18 Q19 Q20 Q21
   Q22 Q23 Q24 Q25 Q27 Q28 Q29 Q30 Q32 Q33 Q34
  Q35 Q36 Q37 Q39 Q40 Q41 Q42 Q44
  /PRINT=TWOTAIL NOSIG
  /STATISTICS DESCRIPTIVES
  /MISSING=PAIRWISE .
```

Correlations

Descriptive Statistics

	Mean	Std. Deviation	N
Q1	1.2109	.60663	607
Q2	.7990	.99626	607
Q3	1.1862	.98835	607
Q4	.9242	.64295	607
Q5	.7463	.99581	607
Q6	.9852	1.01382	607
Q7	.6442	.94497	607
Q8	1.1054	.99607	607
Q9	1.2718	.94410	607
Q10	1.1203	.94766	607
Q12	1.3707	1.02413	607
Q13	.5354	.83941	607
Q14	1.2043	1.38156	607
Q15	.4349	.81364	607
Q16	.4745	.89309	607
Q18	.4662	.84535	607
Q19	1.1960	.98811	607
Q20	1.2784	1.02763	607
Q21	.5964	.85221	607
Q22	1.1417	.93326	607
Q23	.8155	1.04149	607
Q24	.9423	.89644	607
Q25	.8748	1.04557	607
Q27	.6046	.90389	607
Q28	.3460	.67895	607
Q29	1.2504	1.02601	607
Q30	.6392	.89183	607
Q32	.6013	.82406	607
Q33	1.1993	1.18076	607
Q34	.5387	.82538	607
Q35	1.1450	1.00102	607
Q36	.4893	.76396	607
Q37	.5783	.77930	607
Q39	.8814	1.05576	607
Q40	.9918	1.03643	607
Q41	1.1367	1.03379	607
Q42	.8418	.94119	607
Q44	.7002	.98623	607

Correlations

		Q1	Q2	Q3	Q4	Q5	Q6
Q1	Pearson Correlation	1	.220**	.234**	.371**	.165**	.188**
	Sig. (2-tailed)	.	.000	.000	.000	.000	.000
	N	607	607	607	607	607	607
Q2	Pearson Correlation	.220**	1	.229**	.203**	.393**	.280**
	Sig. (2-tailed)	.000	.	.000	.000	.000	.000
	N	607	607	607	607	607	607
Q3	Pearson Correlation	.234**	.229**	1	.220**	.227**	.293**
	Sig. (2-tailed)	.000	.000	.	.000	.000	.000
	N	607	607	607	607	607	607
Q4	Pearson Correlation	.371**	.203**	.220**	1	.215**	.229**
	Sig. (2-tailed)	.000	.000	.000	.	.000	.000
	N	607	607	607	607	607	607
Q5	Pearson Correlation	.165**	.393**	.227**	.215**	1	.256**
	Sig. (2-tailed)	.000	.000	.000	.000	.	.000
	N	607	607	607	607	607	607
Q6	Pearson Correlation	.188**	.280**	.293**	.229**	.256**	1
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.
	N	607	607	607	607	607	607
Q7	Pearson Correlation	.146**	.141**	.207**	.216**	.232**	.246**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000
	N	607	607	607	607	607	607
Q8	Pearson Correlation	.173**	.294**	.240**	.232**	.355**	.240**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000
	N	607	607	607	607	607	607
Q9	Pearson Correlation	.297**	.211**	.299**	.317**	.249**	.278**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000
	N	607	607	607	607	607	607
Q10	Pearson Correlation	.240**	.179**	.256**	.207**	.188**	.366**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000
	N	607	607	607	607	607	607
Q12	Pearson Correlation	.264**	.186**	.243**	.323**	.254**	.258**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000
	N	607	607	607	607	607	607
Q13	Pearson Correlation	.138**	.190**	.343**	.133**	.267**	.215**
	Sig. (2-tailed)	.001	.000	.000	.001	.000	.000
	N	607	607	607	607	607	607
Q14	Pearson Correlation	.145**	.157**	.192**	.196**	.170**	.172**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000
	N	607	607	607	607	607	607
Q15	Pearson Correlation	.202**	.360**	.252**	.249**	.391**	.230**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000
	N	607	607	607	607	607	607
Q16	Pearson Correlation	.296**	.219**	.203**	.255**	.267**	.236**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000
	N	607	607	607	607	607	607
Q18	Pearson Correlation	.104*	.180**	.038	.102*	.154**	.106**
	Sig. (2-tailed)	.010	.000	.348	.012	.000	.009
	N	607	607	607	607	607	607
Q19	Pearson Correlation	.239**	.142**	.189**	.166**	.186**	.118**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.004
	N	607	607	607	607	607	607
Q20	Pearson Correlation	.247**	.203**	.407**	.227**	.240**	.245**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000
	N	607	607	607	607	607	607

Correlations

		Q1	Q2	Q3	Q4	Q5	Q6
Q21	Pearson Correlation	.229**	.237**	.317**	.312**	.258**	.247**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000
	N	607	607	607	607	607	607
Q22	Pearson Correlation	.300**	.258**	.313**	.331**	.369**	.341**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000
	N	607	607	607	607	607	607
Q23	Pearson Correlation	.200**	.276**	.210**	.233**	.292**	.279**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000
	N	607	607	607	607	607	607
Q24	Pearson Correlation	.253**	.305**	.386**	.313**	.302**	.346**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000
	N	607	607	607	607	607	607
Q25	Pearson Correlation	.096*	.225**	.142**	.126**	.169**	.162**
	Sig. (2-tailed)	.018	.000	.000	.002	.000	.000
	N	607	607	607	607	607	607
Q27	Pearson Correlation	.158**	.254**	.166**	.193**	.273**	.145**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000
	N	607	607	607	607	607	607
Q28	Pearson Correlation	.135**	.166**	.155**	.215**	.181**	.132**
	Sig. (2-tailed)	.001	.000	.000	.000	.000	.001
	N	607	607	607	607	607	607
Q29	Pearson Correlation	.299**	.253**	.279**	.331**	.309**	.246**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000
	N	607	607	607	607	607	607
Q30	Pearson Correlation	.220**	.273**	.211**	.263**	.330**	.235**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000
	N	607	607	607	607	607	607
Q32	Pearson Correlation	.228**	.302**	.332**	.233**	.305**	.293**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000
	N	607	607	607	607	607	607
Q33	Pearson Correlation	.100*	.233**	.189**	.168**	.233**	.165**
	Sig. (2-tailed)	.014	.000	.000	.000	.000	.000
	N	607	607	607	607	607	607
Q34	Pearson Correlation	.112**	.086*	.257**	.164**	.201**	.201**
	Sig. (2-tailed)	.006	.035	.000	.000	.000	.000
	N	607	607	607	607	607	607
Q35	Pearson Correlation	.232**	.246**	.218**	.245**	.222**	.244**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000
	N	607	607	607	607	607	607
Q36	Pearson Correlation	.226**	.175**	.292**	.193**	.283**	.231**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000
	N	607	607	607	607	607	607
Q37	Pearson Correlation	.241**	.220**	.278**	.295**	.372**	.301**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000
	N	607	607	607	607	607	607
Q39	Pearson Correlation	.189**	.200**	.176**	.191**	.216**	.208**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000
	N	607	607	607	607	607	607
Q40	Pearson Correlation	.137**	.104*	.158**	.046	.199**	.198**
	Sig. (2-tailed)	.001	.010	.000	.257	.000	.000
	N	607	607	607	607	607	607
Q41	Pearson Correlation	.254**	.245**	.229**	.237**	.228**	.240**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000
	N	607	607	607	607	607	607

Correlations

		Q1	Q2	Q3	Q4	Q5	Q6
Q42	Pearson Correlation	.209**	.172**	.211**	.250**	.276**	.196**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000
	N	607	607	607	607	607	607
Q44	Pearson Correlation	.178**	.311**	.254**	.206**	.410**	.260**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000
	N	607	607	607	607	607	607

Correlations

		Q7	Q8	Q9	Q10	Q12	Q13
Q1	Pearson Correlation	.146**	.173**	.297**	.240**	.264**	.138**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.001
	N	607	607	607	607	607	607
Q2	Pearson Correlation	.141**	.294**	.211**	.179**	.186**	.190**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000
	N	607	607	607	607	607	607
Q3	Pearson Correlation	.207**	.240**	.299**	.256**	.243**	.343**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000
	N	607	607	607	607	607	607
Q4	Pearson Correlation	.216**	.232**	.317**	.207**	.323**	.133**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.001
	N	607	607	607	607	607	607
Q5	Pearson Correlation	.232**	.355**	.249**	.188**	.254**	.267**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000
	N	607	607	607	607	607	607
Q6	Pearson Correlation	.246**	.240**	.278**	.366**	.258**	.215**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000
	N	607	607	607	607	607	607
Q7	Pearson Correlation	1	.257**	.275**	.236**	.246**	.255**
	Sig. (2-tailed)	.	.000	.000	.000	.000	.000
	N	607	607	607	607	607	607
Q8	Pearson Correlation	.257**	1	.275**	.235**	.376**	.305**
	Sig. (2-tailed)	.000	.	.000	.000	.000	.000
	N	607	607	607	607	607	607
Q9	Pearson Correlation	.275**	.275**	1	.319**	.338**	.278**
	Sig. (2-tailed)	.000	.000	.	.000	.000	.000
	N	607	607	607	607	607	607
Q10	Pearson Correlation	.236**	.235**	.319**	1	.331**	.243**
	Sig. (2-tailed)	.000	.000	.000	.	.000	.000
	N	607	607	607	607	607	607
Q12	Pearson Correlation	.246**	.376**	.338**	.331**	1	.300**
	Sig. (2-tailed)	.000	.000	.000	.000	.	.000
	N	607	607	607	607	607	607
Q13	Pearson Correlation	.255**	.305**	.278**	.243**	.300**	1
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.
	N	607	607	607	607	607	607
Q14	Pearson Correlation	.087*	.151**	.276**	.172**	.154**	.169**
	Sig. (2-tailed)	.031	.000	.000	.000	.000	.000
	N	607	607	607	607	607	607
Q15	Pearson Correlation	.307**	.328**	.273**	.236**	.266**	.212**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000
	N	607	607	607	607	607	607
Q16	Pearson Correlation	.238**	.226**	.252**	.268**	.271**	.295**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000
	N	607	607	607	607	607	607
Q18	Pearson Correlation	.134**	.102*	.141**	.107**	.094*	.115**
	Sig. (2-tailed)	.001	.012	.001	.008	.021	.005
	N	607	607	607	607	607	607
Q19	Pearson Correlation	.170**	.148**	.198**	.221**	.282**	.172**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000
	N	607	607	607	607	607	607
Q20	Pearson Correlation	.231**	.281**	.354**	.274**	.328**	.240**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000
	N	607	607	607	607	607	607

Correlations

		Q7	Q8	Q9	Q10	Q12	Q13
Q21	Pearson Correlation	.260**	.260**	.307**	.281**	.325**	.429**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000
	N	607	607	607	607	607	607
Q22	Pearson Correlation	.269**	.374**	.423**	.404**	.539**	.390**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000
	N	607	607	607	607	607	607
Q23	Pearson Correlation	.242**	.278**	.242**	.233**	.210**	.234**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000
	N	607	607	607	607	607	607
Q24	Pearson Correlation	.272**	.295**	.371**	.276**	.259**	.280**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000
	N	607	607	607	607	607	607
Q25	Pearson Correlation	.113**	.239**	.177**	.118**	.133**	.249**
	Sig. (2-tailed)	.005	.000	.000	.003	.001	.000
	N	607	607	607	607	607	607
Q27	Pearson Correlation	.175**	.286**	.204**	.152**	.230**	.219**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000
	N	607	607	607	607	607	607
Q28	Pearson Correlation	.195**	.197**	.242**	.181**	.238**	.251**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000
	N	607	607	607	607	607	607
Q29	Pearson Correlation	.272**	.299**	.461**	.363**	.336**	.302**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000
	N	607	607	607	607	607	607
Q30	Pearson Correlation	.202**	.309**	.307**	.264**	.293**	.305**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000
	N	607	607	607	607	607	607
Q32	Pearson Correlation	.224**	.295**	.284**	.294**	.324**	.433**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000
	N	607	607	607	607	607	607
Q33	Pearson Correlation	.081*	.183**	.126**	.032	.168**	.155**
	Sig. (2-tailed)	.045	.000	.002	.437	.000	.000
	N	607	607	607	607	607	607
Q34	Pearson Correlation	.225**	.170**	.225**	.204**	.249**	.357**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000
	N	607	607	607	607	607	607
Q35	Pearson Correlation	.198**	.236**	.346**	.211**	.223**	.214**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000
	N	607	607	607	607	607	607
Q36	Pearson Correlation	.248**	.273**	.257**	.313**	.320**	.404**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000
	N	607	607	607	607	607	607
Q37	Pearson Correlation	.246**	.312**	.309**	.306**	.357**	.305**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000
	N	607	607	607	607	607	607
Q39	Pearson Correlation	.219**	.239**	.203**	.212**	.199**	.275**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000
	N	607	607	607	607	607	607
Q40	Pearson Correlation	.209**	.204**	.176**	.275**	.292**	.197**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000
	N	607	607	607	607	607	607
Q41	Pearson Correlation	.207**	.254**	.341**	.298**	.362**	.281**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000
	N	607	607	607	607	607	607

Correlations

		Q7	Q8	Q9	Q10	Q12	Q13
Q42	Pearson Correlation	.152**	.285**	.240**	.256**	.361**	.251**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000
	N	607	607	607	607	607	607
Q44	Pearson Correlation	.284**	.528**	.260**	.275**	.282**	.360**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000
	N	607	607	607	607	607	607

Correlations

		Q14	Q15	Q16	Q18	Q19	Q20
Q1	Pearson Correlation	.145**	.202**	.296**	.104*	.239**	.247**
	Sig. (2-tailed)	.000	.000	.000	.010	.000	.000
	N	607	607	607	607	607	607
Q2	Pearson Correlation	.157**	.360**	.219**	.180**	.142**	.203**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000
	N	607	607	607	607	607	607
Q3	Pearson Correlation	.192**	.252**	.203**	.038	.189**	.407**
	Sig. (2-tailed)	.000	.000	.000	.348	.000	.000
	N	607	607	607	607	607	607
Q4	Pearson Correlation	.196**	.249**	.255**	.102*	.166**	.227**
	Sig. (2-tailed)	.000	.000	.000	.012	.000	.000
	N	607	607	607	607	607	607
Q5	Pearson Correlation	.170**	.391**	.267**	.154**	.186**	.240**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000
	N	607	607	607	607	607	607
Q6	Pearson Correlation	.172**	.230**	.236**	.106**	.118**	.245**
	Sig. (2-tailed)	.000	.000	.000	.009	.004	.000
	N	607	607	607	607	607	607
Q7	Pearson Correlation	.087*	.307**	.238**	.134**	.170**	.231**
	Sig. (2-tailed)	.031	.000	.000	.001	.000	.000
	N	607	607	607	607	607	607
Q8	Pearson Correlation	.151**	.328**	.226**	.102*	.148**	.281**
	Sig. (2-tailed)	.000	.000	.000	.012	.000	.000
	N	607	607	607	607	607	607
Q9	Pearson Correlation	.276**	.273**	.252**	.141**	.198**	.354**
	Sig. (2-tailed)	.000	.000	.000	.001	.000	.000
	N	607	607	607	607	607	607
Q10	Pearson Correlation	.172**	.236**	.268**	.107**	.221**	.274**
	Sig. (2-tailed)	.000	.000	.000	.008	.000	.000
	N	607	607	607	607	607	607
Q12	Pearson Correlation	.154**	.266**	.271**	.094*	.282**	.328**
	Sig. (2-tailed)	.000	.000	.000	.021	.000	.000
	N	607	607	607	607	607	607
Q13	Pearson Correlation	.169**	.212**	.295**	.115**	.172**	.240**
	Sig. (2-tailed)	.000	.000	.000	.005	.000	.000
	N	607	607	607	607	607	607
Q14	Pearson Correlation	1	.106**	.170**	.047	.139**	.191**
	Sig. (2-tailed)	.	.009	.000	.249	.001	.000
	N	607	607	607	607	607	607
Q15	Pearson Correlation	.106**	1	.292**	.180**	.204**	.234**
	Sig. (2-tailed)	.009	.	.000	.000	.000	.000
	N	607	607	607	607	607	607
Q16	Pearson Correlation	.170**	.292**	1	.131**	.171**	.239**
	Sig. (2-tailed)	.000	.000	.	.001	.000	.000
	N	607	607	607	607	607	607
Q18	Pearson Correlation	.047	.180**	.131**	1	.039	.105**
	Sig. (2-tailed)	.249	.000	.001	.	.343	.010
	N	607	607	607	607	607	607
Q19	Pearson Correlation	.139**	.204**	.171**	.039	1	.278**
	Sig. (2-tailed)	.001	.000	.000	.343	.	.000
	N	607	607	607	607	607	607
Q20	Pearson Correlation	.191**	.234**	.239**	.105**	.278**	1
	Sig. (2-tailed)	.000	.000	.000	.010	.000	.
	N	607	607	607	607	607	607

Correlations

		Q14	Q15	Q16	Q18	Q19	Q20
Q21	Pearson Correlation	.195**	.327**	.311**	.143**	.192**	.306**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000
	N	607	607	607	607	607	607
Q22	Pearson Correlation	.219**	.371**	.353**	.094*	.303**	.432**
	Sig. (2-tailed)	.000	.000	.000	.021	.000	.000
	N	607	607	607	607	607	607
Q23	Pearson Correlation	.127**	.327**	.286**	.190**	.188**	.236**
	Sig. (2-tailed)	.002	.000	.000	.000	.000	.000
	N	607	607	607	607	607	607
Q24	Pearson Correlation	.256**	.313**	.329**	.160**	.225**	.429**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000
	N	607	607	607	607	607	607
Q25	Pearson Correlation	.059	.173**	.196**	.133**	.128**	.122**
	Sig. (2-tailed)	.147	.000	.000	.001	.002	.003
	N	607	607	607	607	607	607
Q27	Pearson Correlation	.186**	.225**	.282**	.142**	.166**	.248**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000
	N	607	607	607	607	607	607
Q28	Pearson Correlation	.062	.283**	.254**	.170**	.086*	.138**
	Sig. (2-tailed)	.129	.000	.000	.000	.035	.001
	N	607	607	607	607	607	607
Q29	Pearson Correlation	.272**	.275**	.331**	.113**	.228**	.336**
	Sig. (2-tailed)	.000	.000	.000	.006	.000	.000
	N	607	607	607	607	607	607
Q30	Pearson Correlation	.143**	.269**	.304**	.188**	.234**	.220**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000
	N	607	607	607	607	607	607
Q32	Pearson Correlation	.204**	.330**	.316**	.130**	.254**	.318**
	Sig. (2-tailed)	.000	.000	.000	.001	.000	.000
	N	607	607	607	607	607	607
Q33	Pearson Correlation	.075	.219**	.121**	.206**	.126**	.141**
	Sig. (2-tailed)	.064	.000	.003	.000	.002	.001
	N	607	607	607	607	607	607
Q34	Pearson Correlation	.113**	.191**	.185**	.051	.180**	.191**
	Sig. (2-tailed)	.005	.000	.000	.210	.000	.000
	N	607	607	607	607	607	607
Q35	Pearson Correlation	.150**	.220**	.237**	.133**	.175**	.261**
	Sig. (2-tailed)	.000	.000	.000	.001	.000	.000
	N	607	607	607	607	607	607
Q36	Pearson Correlation	.210**	.175**	.336**	.160**	.192**	.366**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000
	N	607	607	607	607	607	607
Q37	Pearson Correlation	.152**	.376**	.354**	.201**	.195**	.277**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000
	N	607	607	607	607	607	607
Q39	Pearson Correlation	.111**	.189**	.177**	.055	.150**	.169**
	Sig. (2-tailed)	.006	.000	.000	.179	.000	.000
	N	607	607	607	607	607	607
Q40	Pearson Correlation	.209**	.196**	.188**	.027	.168**	.227**
	Sig. (2-tailed)	.000	.000	.000	.507	.000	.000
	N	607	607	607	607	607	607
Q41	Pearson Correlation	.194**	.231**	.258**	.131**	.350**	.321**
	Sig. (2-tailed)	.000	.000	.000	.001	.000	.000
	N	607	607	607	607	607	607

Correlations

		Q14	Q15	Q16	Q18	Q19	Q20
Q42	Pearson Correlation	.256**	.202**	.243**	.122**	.159**	.332**
	Sig. (2-tailed)	.000	.000	.000	.003	.000	.000
	N	607	607	607	607	607	607
Q44	Pearson Correlation	.149**	.389**	.265**	.132**	.167**	.236**
	Sig. (2-tailed)	.000	.000	.000	.001	.000	.000
	N	607	607	607	607	607	607

Correlations

		Q21	Q22	Q23	Q24	Q25	Q27
Q1	Pearson Correlation	.229**	.300**	.200**	.253**	.096*	.158**
	Sig. (2-tailed)	.000	.000	.000	.000	.018	.000
	N	607	607	607	607	607	607
Q2	Pearson Correlation	.237**	.258**	.276**	.305**	.225**	.254**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000
	N	607	607	607	607	607	607
Q3	Pearson Correlation	.317**	.313**	.210**	.386**	.142**	.166**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000
	N	607	607	607	607	607	607
Q4	Pearson Correlation	.312**	.331**	.233**	.313**	.126**	.193**
	Sig. (2-tailed)	.000	.000	.000	.000	.002	.000
	N	607	607	607	607	607	607
Q5	Pearson Correlation	.258**	.369**	.292**	.302**	.169**	.273**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000
	N	607	607	607	607	607	607
Q6	Pearson Correlation	.247**	.341**	.279**	.346**	.162**	.145**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000
	N	607	607	607	607	607	607
Q7	Pearson Correlation	.260**	.269**	.242**	.272**	.113**	.175**
	Sig. (2-tailed)	.000	.000	.000	.000	.005	.000
	N	607	607	607	607	607	607
Q8	Pearson Correlation	.260**	.374**	.278**	.295**	.239**	.286**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000
	N	607	607	607	607	607	607
Q9	Pearson Correlation	.307**	.423**	.242**	.371**	.177**	.204**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000
	N	607	607	607	607	607	607
Q10	Pearson Correlation	.281**	.404**	.233**	.276**	.118**	.152**
	Sig. (2-tailed)	.000	.000	.000	.000	.003	.000
	N	607	607	607	607	607	607
Q12	Pearson Correlation	.325**	.539**	.210**	.259**	.133**	.230**
	Sig. (2-tailed)	.000	.000	.000	.000	.001	.000
	N	607	607	607	607	607	607
Q13	Pearson Correlation	.429**	.390**	.234**	.280**	.249**	.219**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000
	N	607	607	607	607	607	607
Q14	Pearson Correlation	.195**	.219**	.127**	.256**	.059	.186**
	Sig. (2-tailed)	.000	.000	.002	.000	.147	.000
	N	607	607	607	607	607	607
Q15	Pearson Correlation	.327**	.371**	.327**	.313**	.173**	.225**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000
	N	607	607	607	607	607	607
Q16	Pearson Correlation	.311**	.353**	.286**	.329**	.196**	.282**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000
	N	607	607	607	607	607	607
Q18	Pearson Correlation	.143**	.094*	.190**	.160**	.133**	.142**
	Sig. (2-tailed)	.000	.021	.000	.000	.001	.000
	N	607	607	607	607	607	607
Q19	Pearson Correlation	.192**	.303**	.188**	.225**	.128**	.166**
	Sig. (2-tailed)	.000	.000	.000	.000	.002	.000
	N	607	607	607	607	607	607
Q20	Pearson Correlation	.306**	.432**	.236**	.429**	.122**	.248**
	Sig. (2-tailed)	.000	.000	.000	.000	.003	.000
	N	607	607	607	607	607	607

Correlations

		Q21	Q22	Q23	Q24	Q25	Q27
Q21	Pearson Correlation	1	.427**	.264**	.363**	.212**	.307**
	Sig. (2-tailed)	.	.000	.000	.000	.000	.000
	N	607	607	607	607	607	607
Q22	Pearson Correlation	.427**	1	.285**	.456**	.219**	.336**
	Sig. (2-tailed)	.000	.	.000	.000	.000	.000
	N	607	607	607	607	607	607
Q23	Pearson Correlation	.264**	.285**	1	.305**	.230**	.271**
	Sig. (2-tailed)	.000	.000	.	.000	.000	.000
	N	607	607	607	607	607	607
Q24	Pearson Correlation	.363**	.456**	.305**	1	.216**	.310**
	Sig. (2-tailed)	.000	.000	.000	.	.000	.000
	N	607	607	607	607	607	607
Q25	Pearson Correlation	.212**	.219**	.230**	.216**	1	.182**
	Sig. (2-tailed)	.000	.000	.000	.000	.	.000
	N	607	607	607	607	607	607
Q27	Pearson Correlation	.307**	.336**	.271**	.310**	.182**	1
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.
	N	607	607	607	607	607	607
Q28	Pearson Correlation	.347**	.251**	.258**	.266**	.166**	.199**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000
	N	607	607	607	607	607	607
Q29	Pearson Correlation	.352**	.459**	.314**	.378**	.209**	.269**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000
	N	607	607	607	607	607	607
Q30	Pearson Correlation	.292**	.385**	.331**	.352**	.275**	.318**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000
	N	607	607	607	607	607	607
Q32	Pearson Correlation	.464**	.479**	.233**	.413**	.250**	.342**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000
	N	607	607	607	607	607	607
Q33	Pearson Correlation	.192**	.205**	.230**	.218**	.242**	.133**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.001
	N	607	607	607	607	607	607
Q34	Pearson Correlation	.359**	.344**	.200**	.294**	.153**	.217**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000
	N	607	607	607	607	607	607
Q35	Pearson Correlation	.231**	.292**	.243**	.280**	.221**	.193**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000
	N	607	607	607	607	607	607
Q36	Pearson Correlation	.382**	.389**	.248**	.369**	.170**	.295**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000
	N	607	607	607	607	607	607
Q37	Pearson Correlation	.409**	.452**	.282**	.376**	.294**	.405**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000
	N	607	607	607	607	607	607
Q39	Pearson Correlation	.260**	.287**	.234**	.273**	.302**	.234**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000
	N	607	607	607	607	607	607
Q40	Pearson Correlation	.234**	.332**	.223**	.271**	.122**	.218**
	Sig. (2-tailed)	.000	.000	.000	.000	.003	.000
	N	607	607	607	607	607	607
Q41	Pearson Correlation	.316**	.459**	.198**	.279**	.191**	.335**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000
	N	607	607	607	607	607	607

Correlations

		Q21	Q22	Q23	Q24	Q25	Q27
Q42	Pearson Correlation	.274**	.358**	.199**	.281**	.124**	.359**
	Sig. (2-tailed)	.000	.000	.000	.000	.002	.000
	N	607	607	607	607	607	607
Q44	Pearson Correlation	.317**	.394**	.301**	.333**	.239**	.276**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000
	N	607	607	607	607	607	607

Correlations

		Q28	Q29	Q30	Q32	Q33	Q34
Q1	Pearson Correlation	.135**	.299**	.220**	.228**	.100*	.112**
	Sig. (2-tailed)	.001	.000	.000	.000	.014	.006
	N	607	607	607	607	607	607
Q2	Pearson Correlation	.166**	.253**	.273**	.302**	.233**	.086*
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.035
	N	607	607	607	607	607	607
Q3	Pearson Correlation	.155**	.279**	.211**	.332**	.189**	.257**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000
	N	607	607	607	607	607	607
Q4	Pearson Correlation	.215**	.331**	.263**	.233**	.168**	.164**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000
	N	607	607	607	607	607	607
Q5	Pearson Correlation	.181**	.309**	.330**	.305**	.233**	.201**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000
	N	607	607	607	607	607	607
Q6	Pearson Correlation	.132**	.246**	.235**	.293**	.165**	.201**
	Sig. (2-tailed)	.001	.000	.000	.000	.000	.000
	N	607	607	607	607	607	607
Q7	Pearson Correlation	.195**	.272**	.202**	.224**	.081*	.225**
	Sig. (2-tailed)	.000	.000	.000	.000	.045	.000
	N	607	607	607	607	607	607
Q8	Pearson Correlation	.197**	.299**	.309**	.295**	.183**	.170**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000
	N	607	607	607	607	607	607
Q9	Pearson Correlation	.242**	.461**	.307**	.284**	.126**	.225**
	Sig. (2-tailed)	.000	.000	.000	.000	.002	.000
	N	607	607	607	607	607	607
Q10	Pearson Correlation	.181**	.363**	.264**	.294**	.032	.204**
	Sig. (2-tailed)	.000	.000	.000	.000	.437	.000
	N	607	607	607	607	607	607
Q12	Pearson Correlation	.238**	.336**	.293**	.324**	.168**	.249**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000
	N	607	607	607	607	607	607
Q13	Pearson Correlation	.251**	.302**	.305**	.433**	.155**	.357**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000
	N	607	607	607	607	607	607
Q14	Pearson Correlation	.062	.272**	.143**	.204**	.075	.113**
	Sig. (2-tailed)	.129	.000	.000	.000	.064	.005
	N	607	607	607	607	607	607
Q15	Pearson Correlation	.283**	.275**	.269**	.330**	.219**	.191**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000
	N	607	607	607	607	607	607
Q16	Pearson Correlation	.254**	.331**	.304**	.316**	.121**	.185**
	Sig. (2-tailed)	.000	.000	.000	.000	.003	.000
	N	607	607	607	607	607	607
Q18	Pearson Correlation	.170**	.113**	.188**	.130**	.206**	.051
	Sig. (2-tailed)	.000	.006	.000	.001	.000	.210
	N	607	607	607	607	607	607
Q19	Pearson Correlation	.086*	.228**	.234**	.254**	.126**	.180**
	Sig. (2-tailed)	.035	.000	.000	.000	.002	.000
	N	607	607	607	607	607	607
Q20	Pearson Correlation	.138**	.336**	.220**	.318**	.141**	.191**
	Sig. (2-tailed)	.001	.000	.000	.000	.001	.000
	N	607	607	607	607	607	607

Correlations

		Q28	Q29	Q30	Q32	Q33	Q34
Q21	Pearson Correlation	.347**	.352**	.292**	.464**	.192**	.359**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000
	N	607	607	607	607	607	607
Q22	Pearson Correlation	.251**	.459**	.385**	.479**	.205**	.344**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000
	N	607	607	607	607	607	607
Q23	Pearson Correlation	.258**	.314**	.331**	.233**	.230**	.200**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000
	N	607	607	607	607	607	607
Q24	Pearson Correlation	.266**	.378**	.352**	.413**	.218**	.294**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000
	N	607	607	607	607	607	607
Q25	Pearson Correlation	.166**	.209**	.275**	.250**	.242**	.153**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000
	N	607	607	607	607	607	607
Q27	Pearson Correlation	.199**	.269**	.318**	.342**	.133**	.217**
	Sig. (2-tailed)	.000	.000	.000	.000	.001	.000
	N	607	607	607	607	607	607
Q28	Pearson Correlation	1	.266**	.354**	.241**	.052	.241**
	Sig. (2-tailed)	.	.000	.000	.000	.203	.000
	N	607	607	607	607	607	607
Q29	Pearson Correlation	.266**	1	.371**	.362**	.222**	.306**
	Sig. (2-tailed)	.000	.	.000	.000	.000	.000
	N	607	607	607	607	607	607
Q30	Pearson Correlation	.354**	.371**	1	.309**	.167**	.235**
	Sig. (2-tailed)	.000	.000	.	.000	.000	.000
	N	607	607	607	607	607	607
Q32	Pearson Correlation	.241**	.362**	.309**	1	.231**	.345**
	Sig. (2-tailed)	.000	.000	.000	.	.000	.000
	N	607	607	607	607	607	607
Q33	Pearson Correlation	.052	.222**	.167**	.231**	1	.135**
	Sig. (2-tailed)	.203	.000	.000	.000	.	.001
	N	607	607	607	607	607	607
Q34	Pearson Correlation	.241**	.306**	.235**	.345**	.135**	1
	Sig. (2-tailed)	.000	.000	.000	.000	.001	.
	N	607	607	607	607	607	607
Q35	Pearson Correlation	.213**	.403**	.295**	.244**	.225**	.225**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000
	N	607	607	607	607	607	607
Q36	Pearson Correlation	.255**	.416**	.352**	.447**	.153**	.330**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000
	N	607	607	607	607	607	607
Q37	Pearson Correlation	.317**	.361**	.346**	.550**	.194**	.292**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000
	N	607	607	607	607	607	607
Q39	Pearson Correlation	.223**	.253**	.338**	.285**	.233**	.217**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000
	N	607	607	607	607	607	607
Q40	Pearson Correlation	.128**	.256**	.229**	.282**	.092*	.221**
	Sig. (2-tailed)	.002	.000	.000	.000	.024	.000
	N	607	607	607	607	607	607
Q41	Pearson Correlation	.163**	.364**	.299**	.421**	.184**	.333**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000
	N	607	607	607	607	607	607

Correlations

		Q28	Q29	Q30	Q32	Q33	Q34
Q42	Pearson Correlation	.230**	.311**	.252**	.297**	.140**	.269**
	Sig. (2-tailed)	.000	.000	.000	.000	.001	.000
	N	607	607	607	607	607	607
Q44	Pearson Correlation	.271**	.257**	.333**	.344**	.168**	.258**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000
	N	607	607	607	607	607	607

Correlations

		Q35	Q36	Q37	Q39	Q40	Q41
Q1	Pearson Correlation	.232**	.226**	.241**	.189**	.137**	.254**
	Sig. (2-tailed)	.000	.000	.000	.000	.001	.000
	N	607	607	607	607	607	607
Q2	Pearson Correlation	.246**	.175**	.220**	.200**	.104*	.245**
	Sig. (2-tailed)	.000	.000	.000	.000	.010	.000
	N	607	607	607	607	607	607
Q3	Pearson Correlation	.218**	.292**	.278**	.176**	.158**	.229**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000
	N	607	607	607	607	607	607
Q4	Pearson Correlation	.245**	.193**	.295**	.191**	.046	.237**
	Sig. (2-tailed)	.000	.000	.000	.000	.257	.000
	N	607	607	607	607	607	607
Q5	Pearson Correlation	.222**	.283**	.372**	.216**	.199**	.228**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000
	N	607	607	607	607	607	607
Q6	Pearson Correlation	.244**	.231**	.301**	.208**	.198**	.240**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000
	N	607	607	607	607	607	607
Q7	Pearson Correlation	.198**	.248**	.246**	.219**	.209**	.207**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000
	N	607	607	607	607	607	607
Q8	Pearson Correlation	.236**	.273**	.312**	.239**	.204**	.254**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000
	N	607	607	607	607	607	607
Q9	Pearson Correlation	.346**	.257**	.309**	.203**	.176**	.341**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000
	N	607	607	607	607	607	607
Q10	Pearson Correlation	.211**	.313**	.306**	.212**	.275**	.298**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000
	N	607	607	607	607	607	607
Q12	Pearson Correlation	.223**	.320**	.357**	.199**	.292**	.362**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000
	N	607	607	607	607	607	607
Q13	Pearson Correlation	.214**	.404**	.305**	.275**	.197**	.281**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000
	N	607	607	607	607	607	607
Q14	Pearson Correlation	.150**	.210**	.152**	.111**	.209**	.194**
	Sig. (2-tailed)	.000	.000	.000	.006	.000	.000
	N	607	607	607	607	607	607
Q15	Pearson Correlation	.220**	.175**	.376**	.189**	.196**	.231**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000
	N	607	607	607	607	607	607
Q16	Pearson Correlation	.237**	.336**	.354**	.177**	.188**	.258**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000
	N	607	607	607	607	607	607
Q18	Pearson Correlation	.133**	.160**	.201**	.055	.027	.131**
	Sig. (2-tailed)	.001	.000	.000	.179	.507	.001
	N	607	607	607	607	607	607
Q19	Pearson Correlation	.175**	.192**	.195**	.150**	.168**	.350**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000
	N	607	607	607	607	607	607
Q20	Pearson Correlation	.261**	.366**	.277**	.169**	.227**	.321**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000
	N	607	607	607	607	607	607

Correlations

		Q35	Q36	Q37	Q39	Q40	Q41
Q21	Pearson Correlation	.231**	.382**	.409**	.260**	.234**	.316**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000
	N	607	607	607	607	607	607
Q22	Pearson Correlation	.292**	.389**	.452**	.287**	.332**	.459**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000
	N	607	607	607	607	607	607
Q23	Pearson Correlation	.243**	.248**	.282**	.234**	.223**	.198**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000
	N	607	607	607	607	607	607
Q24	Pearson Correlation	.280**	.369**	.376**	.273**	.271**	.279**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000
	N	607	607	607	607	607	607
Q25	Pearson Correlation	.221**	.170**	.294**	.302**	.122**	.191**
	Sig. (2-tailed)	.000	.000	.000	.000	.003	.000
	N	607	607	607	607	607	607
Q27	Pearson Correlation	.193**	.295**	.405**	.234**	.218**	.335**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000
	N	607	607	607	607	607	607
Q28	Pearson Correlation	.213**	.255**	.317**	.223**	.128**	.163**
	Sig. (2-tailed)	.000	.000	.000	.000	.002	.000
	N	607	607	607	607	607	607
Q29	Pearson Correlation	.403**	.416**	.361**	.253**	.256**	.364**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000
	N	607	607	607	607	607	607
Q30	Pearson Correlation	.295**	.352**	.346**	.338**	.229**	.299**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000
	N	607	607	607	607	607	607
Q32	Pearson Correlation	.244**	.447**	.550**	.285**	.282**	.421**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000
	N	607	607	607	607	607	607
Q33	Pearson Correlation	.225**	.153**	.194**	.233**	.092*	.184**
	Sig. (2-tailed)	.000	.000	.000	.000	.024	.000
	N	607	607	607	607	607	607
Q34	Pearson Correlation	.225**	.330**	.292**	.217**	.221**	.333**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000
	N	607	607	607	607	607	607
Q35	Pearson Correlation	1	.293**	.244**	.185**	.202**	.289**
	Sig. (2-tailed)	.	.000	.000	.000	.000	.000
	N	607	607	607	607	607	607
Q36	Pearson Correlation	.293**	1	.400**	.266**	.282**	.335**
	Sig. (2-tailed)	.000	.	.000	.000	.000	.000
	N	607	607	607	607	607	607
Q37	Pearson Correlation	.244**	.400**	1	.290**	.267**	.358**
	Sig. (2-tailed)	.000	.000	.	.000	.000	.000
	N	607	607	607	607	607	607
Q39	Pearson Correlation	.185**	.266**	.290**	1	.108**	.252**
	Sig. (2-tailed)	.000	.000	.000	.	.008	.000
	N	607	607	607	607	607	607
Q40	Pearson Correlation	.202**	.282**	.267**	.108**	1	.260**
	Sig. (2-tailed)	.000	.000	.000	.008	.	.000
	N	607	607	607	607	607	607
Q41	Pearson Correlation	.289**	.335**	.358**	.252**	.260**	1
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.
	N	607	607	607	607	607	607

Correlations

		Q35	Q36	Q37	Q39	Q40	Q41
Q42	Pearson Correlation	.221**	.305**	.361**	.235**	.339**	.375**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000
	N	607	607	607	607	607	607
Q44	Pearson Correlation	.268**	.283**	.391**	.316**	.230**	.273**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000
	N	607	607	607	607	607	607

Correlations

		Q42	Q44
Q1	Pearson Correlation	.209**	.178**
	Sig. (2-tailed)	.000	.000
	N	607	607
Q2	Pearson Correlation	.172**	.311**
	Sig. (2-tailed)	.000	.000
	N	607	607
Q3	Pearson Correlation	.211**	.254**
	Sig. (2-tailed)	.000	.000
	N	607	607
Q4	Pearson Correlation	.250**	.206**
	Sig. (2-tailed)	.000	.000
	N	607	607
Q5	Pearson Correlation	.276**	.410**
	Sig. (2-tailed)	.000	.000
	N	607	607
Q6	Pearson Correlation	.196**	.260**
	Sig. (2-tailed)	.000	.000
	N	607	607
Q7	Pearson Correlation	.152**	.284**
	Sig. (2-tailed)	.000	.000
	N	607	607
Q8	Pearson Correlation	.285**	.528**
	Sig. (2-tailed)	.000	.000
	N	607	607
Q9	Pearson Correlation	.240**	.260**
	Sig. (2-tailed)	.000	.000
	N	607	607
Q10	Pearson Correlation	.256**	.275**
	Sig. (2-tailed)	.000	.000
	N	607	607
Q12	Pearson Correlation	.361**	.282**
	Sig. (2-tailed)	.000	.000
	N	607	607
Q13	Pearson Correlation	.251**	.360**
	Sig. (2-tailed)	.000	.000
	N	607	607
Q14	Pearson Correlation	.256**	.149**
	Sig. (2-tailed)	.000	.000
	N	607	607
Q15	Pearson Correlation	.202**	.389**
	Sig. (2-tailed)	.000	.000
	N	607	607
Q16	Pearson Correlation	.243**	.265**
	Sig. (2-tailed)	.000	.000
	N	607	607
Q18	Pearson Correlation	.122**	.132**
	Sig. (2-tailed)	.003	.001
	N	607	607
Q19	Pearson Correlation	.159**	.167**
	Sig. (2-tailed)	.000	.000
	N	607	607
Q20	Pearson Correlation	.332**	.236**
	Sig. (2-tailed)	.000	.000
	N	607	607

Correlations

		Q42	Q44
Q21	Pearson Correlation	.274**	.317**
	Sig. (2-tailed)	.000	.000
	N	607	607
Q22	Pearson Correlation	.358**	.394**
	Sig. (2-tailed)	.000	.000
	N	607	607
Q23	Pearson Correlation	.199**	.301**
	Sig. (2-tailed)	.000	.000
	N	607	607
Q24	Pearson Correlation	.281**	.333**
	Sig. (2-tailed)	.000	.000
	N	607	607
Q25	Pearson Correlation	.124**	.239**
	Sig. (2-tailed)	.002	.000
	N	607	607
Q27	Pearson Correlation	.359**	.276**
	Sig. (2-tailed)	.000	.000
	N	607	607
Q28	Pearson Correlation	.230**	.271**
	Sig. (2-tailed)	.000	.000
	N	607	607
Q29	Pearson Correlation	.311**	.257**
	Sig. (2-tailed)	.000	.000
	N	607	607
Q30	Pearson Correlation	.252**	.333**
	Sig. (2-tailed)	.000	.000
	N	607	607
Q32	Pearson Correlation	.297**	.344**
	Sig. (2-tailed)	.000	.000
	N	607	607
Q33	Pearson Correlation	.140**	.168**
	Sig. (2-tailed)	.001	.000
	N	607	607
Q34	Pearson Correlation	.269**	.258**
	Sig. (2-tailed)	.000	.000
	N	607	607
Q35	Pearson Correlation	.221**	.268**
	Sig. (2-tailed)	.000	.000
	N	607	607
Q36	Pearson Correlation	.305**	.283**
	Sig. (2-tailed)	.000	.000
	N	607	607
Q37	Pearson Correlation	.361**	.391**
	Sig. (2-tailed)	.000	.000
	N	607	607
Q39	Pearson Correlation	.235**	.316**
	Sig. (2-tailed)	.000	.000
	N	607	607
Q40	Pearson Correlation	.339**	.230**
	Sig. (2-tailed)	.000	.000
	N	607	607
Q41	Pearson Correlation	.375**	.273**
	Sig. (2-tailed)	.000	.000
	N	607	607

Correlations

		Q42	Q44
Q42	Pearson Correlation	1	.301**
	Sig. (2-tailed)	.	.000
	N	607	607
Q44	Pearson Correlation	.301**	1
	Sig. (2-tailed)	.000	.
	N	607	607

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

Appendix O

Fit Indices for Each Model with Comparison Between Models

Fit indices for each model with comparison between models

Model	X^2	*df*	*p*	RMSEA	NFI	CFI	Comparison	X^2 change	*df* change	*p* of X^2 change	Target co-efficient
Model 1: Single factor	1580	665	<.001	.048	.77	.85	Model 1 vs. model 3	175	15	<.000	
Model 2: 6 uncorrelated factors	3229	665	<.001	.080	.54	.59	Model 2 vs. model 3	1924	15	<.000	
Model 3: 6 correlated factors	1305	650	<.001	.041	.81	.90					
Model 4: 6 first order factors, 1 higher order factor	1340	659	<.001	.041	.81	.89	Model 3 vs. model 4	35	9	<.000	.97

CFI = comparative fit indices