

**Teachers' identification of anxiety and somatic
symptoms in their pupils**

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Psychology**

UCL Institute of Education

I, Louise Elizabeth Neil, confirm that the work presented in this thesis is my own. Where information has been derived from other sources, I confirm that this has been indicated in the thesis.

A handwritten signature in black ink, appearing to read 'Louise Neil', is centered on the page.

Louise Neil 2015

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Abstract

Anxiety and somatic symptoms are some of the most common and debilitating mental health problems in childhood yet frequently go unnoticed and untreated. UK schools have been urged to take a more prominent role in promoting good mental health in their pupils; yet whether their teachers can recognise children's anxiety and somatic symptoms, and how teachers identify these symptoms has not been investigated. This two-stage study involved 1346 7-11 year old children, their class teachers and a subsample of parents. Standardised scales and a simple rating scale were used to collect data on children's anxiety and somatic symptoms and teachers' psychological wellbeing. Qualitative interviews were conducted with a smaller purposively selected group of teachers to investigate how teachers identified symptomatic pupils.

A modest positive association was found between teachers' and children's reports of anxiety and somatic symptoms, and teachers were rarely able to identify children whose self-reported or parent-reported anxiety and somatic scores suggested clinical levels of symptoms. Themes identified from interviews included the perception that anxiety can be identified through oppositional behaviour, and the perception that somatic symptoms vary in their authenticity.

The associations between teachers' own psychological wellbeing, feelings of responsibility and attitudes towards the causes and presentation of children's symptoms were investigated for any relationship with sensitivity to pupils' symptoms. Teachers' obsessive-compulsive symptoms were positively associated with sensitivity to pupils' anxiety symptoms. Findings from two short, newly developed scales suggested that teachers felt highly responsible for pupils' wellbeing and believed children were more likely to exaggerate somatic symptoms than anxiety, but these constructs were not associated with sensitivity to children's symptoms. Results suggest that teachers are somewhat sensitive to the variation in pupils' levels of anxiety and somatic symptoms, but struggle to distinguish children who self-report particularly high levels of symptoms from the rest of their class.

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Introduction

Anxiety disorders are some of the most common and debilitating mental health problems in childhood (Costello, Mustillo, Erkanli, Keeler, & Angold, 2003; Fergusson, Horwood, & Lynskey, 1993; Ford, Goodman, & Meltzer, 2003) while anxiety symptoms which do not reach criteria for a disorder, cause some level of impairment in over a third of children (Chavira, Stein, Bailey and Stein, 2004).

Although anxiety is a normal response to threat, the experience of disproportionate levels of symptoms can follow a chronic course if left untreated (Keller et al., 1992). Anxiety in childhood also predicts the development of other psychiatric problems in adolescence, such as depression and substance use (Bittner et al., 2007). Somatic symptoms such as headaches, abdominal pain and nausea are also common in childhood (Garber, Walker, & Zeman, 1991; Vervoort, Goubert, Eccleston, Bijttebier, & Crombez, 2006). These symptoms commonly co-occur with anxiety (Lavigne, Saps, & Bryant, 2012; Meesters, Muris, Ghys, Reumerman, & Rooijmans, 2003) and, like anxiety, are predictive of later psychiatric symptoms (Walker, Garber, Vanslyke, & Greene, 1995).

A growing body of literature suggests interventions for anxiety can successfully ameliorate symptoms (Neil & Christensen, 2009), and yet symptoms of anxiety frequently go undetected and untreated in children (Chavira et al., 2004). Although children are reliable and valid informants of their own thoughts, behaviours and feelings when asked directly in clinical interviews (Rutter & Graham, 1968) and on standardised scales (Brown-Jacobsen, Wallace, & Whiteside, 2011), children may not be aware that what they are experiencing is abnormal and treatable. Even if they are they may have poor social skills (Wood, 2006) and self-esteem (Sowislo & Orth, 2012), which prevent them reporting symptoms and seeking help. Children must therefore rely on adults to recognise symptoms.

Parents can offer important insights into children's internalising symptoms and their reports are valued by clinicians (Grills & Ollendick, 2003; Loeber, Green, & Lahey, 1990; Smith, 2007) but there are a number of reasons why relying on parents' identification of anxiety in children may be problematic. Firstly, parents

may not recognise their child is experiencing anxiety. In a population sample of more than 1420 youth-parent pairs only 39% of parents whose children met criteria for a psychiatric diagnosis perceived their child as having a problem (Teagle, 2002). Secondly, anxious children are more likely to have parents with poor mental health themselves (Last, Hersen, Kazdin, Orvaschel, & Perrin, 1991; Last, Hersen, Kazdin, Francis, & Grubb, 1987; Steinhausen, Foldager, Perto, & Munk-Jorgensen, 2009). Depressed or anxious parents may have lower self-esteem and poor social skills (Wood, 2006; Sowislo & Orth, 2012) that might prevent them from successfully acquiring support for their child, even if they recognise their difficulties. Finally, parental perceptions of children's symptoms may be distorted by their own levels of anxiety and depression or other factors such as family conflict (De Los Reyes & Kazdin, 2005; Frick, Silverthorn, & Evans, 1994; Grills & Ollendick, 2003; Richters, 1992).

There have been calls for teachers' reports of children's internalising symptoms be utilised more often (Hoier & Kerr, 1988; Lyneham, Street, Abbott, & Rapee, 2008) and there are reasons why teachers may be well placed to pick up on such symptoms. Teachers have more opportunity than parents to compare and contrast children of the same age, and they can observe children in situations parents are not privy to (Clarizio, 1994). In fact, with a growing emphasis on mental health in schools, teachers are increasingly relied upon to signpost children to support through organisations such as Children and Adolescent Mental Health Services (CAMHS) and Place2Be¹, and they have also been called upon to nominate children for school based interventions for anxiety (Bernstein, Layne, Egan, & Tennison, 2005; Dadds, Spence, Holland, Barrett, & Laurens, 1997; Mifsud & Rapee, 2005). As Lyneham and Rapee (2011, p.359) point out, however, the accuracy of this identification "has not been investigated and may be highly reliant on the teacher's personal definition of anxiety, and recognition of symptoms." If teachers are to be called upon to identify children's anxiety and somatic symptoms, there should be evidence that they are able to do so successfully, and an investigation of the factors which may help or hinder this process.

¹ www.Place2Be.org.uk

Being sensitive to children's internalising symptoms is not just important for signposting children to further support. Increased sensitivity among teachers to children's anxiety and somatic symptoms may facilitate better education of children and an improved school experience, even for those whose symptoms do not reach criteria for a clinical diagnosis.

The aim of this thesis is to explore how sensitive teachers are to anxiety and somatic symptoms in their pupils. It will explore how teachers identify pupils as being anxious or somatising; whether certain subtypes or patterns of symptoms in children are more likely to be recognised; and what factors in teachers and pupils are associated with better or worse recognition of pupils' self-reported anxious or somatic symptoms.

A particular focus of this thesis is on the factors associated with teachers' sensitivity towards pupils' symptoms, and particularly whether teachers' own psychological wellbeing is associated with this. The focus on teachers' psychological symptoms is based on a number of observations. As well as increasing concern about levels of stress in children, both anecdotal and published reports in the media and in academic journals suggest concern about levels of stress in teachers themselves (Chaplain, 2008; Denholm, 2012; Griva & Joeke, 2003), yet the potential impact of stress on teachers' interactions with their pupils has received very little attention. There is also an interesting discrepancy in the literature over whether psychological wellbeing is positively (Davis & Kraus, 1997; Hall, Andrzejewski, & Yopchick, 2009), or negatively (Harkness, Sabbagh, Jacobson, Chowdrey, & Chen, 2005), associated with better 'empathic accuracy', defined as the extent to which observation, memory, knowledge and reasoning are successfully combined to yield insights into the subjective experience of others (Ickes, 1997). Finally, while the potential effect of parents' symptoms on their reports of children's anxiety symptoms has been investigated (Bitsika, Sharpley, Andonicos, & Agnew, 2015; Niditch & Varela, 2011), the association between teachers' psychological symptoms and their reports of pupils' anxiety (or somatic symptoms) has not.

Chapter 1 Review of the literature: Anxiety and somatic symptoms in children

1.1 Introduction to chapter 1

The first part of this literature review focuses on the prevalence and patterning of anxiety and somatic symptoms in children, their aetiology, and their developmental course. It ends with a discussion of the role of the school in children's mental health and evidence for the utility of teachers as informants on children's symptoms.

1.2 Prevalence of anxiety disorders and symptoms in children

Barlow (2002, p.64) defines anxiety as "a future oriented mood state in which one is ready or prepared to cope with upcoming negative events." This 'apprehensive expectation' can be pervasive to several events or activities (in the case of generalised anxiety) or specific to certain stimuli, events, or situations (in the case of phobias, separation anxiety, post-traumatic stress and social anxiety). An early distinction was made between state anxiety, conceptualised as the body's short-term response to perceived environmental threat (e.g., physiological arousal), and trait anxiety, conceptualised as individual differences in the predisposition to experience symptoms of anxiety (Spielberger, 1966). The two types of anxiety are related, as those with higher levels of trait anxiety are more likely than those with lower levels to experience more intense or severe levels of state anxiety, and to be anxious about a wider range of situations or contexts. Although anxiety is a normal response to threat, it can become problematic when its presentation is excessive in relation to the level of threat posed, and when it impacts negatively on everyday life.

Using data from the Great Smoky Mountain study, Costello, Mustillo, Erklani, Keeler and Angold (2003) estimated that between the ages of 9 and 16, 9.9 per cent of the population will have met criteria for an anxiety disorder, with girls more likely to develop one than boys (12.1% of the population compared to 7.3%). Table 1 provides prevalence rates for anxiety disorders in children from a number of studies carried out from the year 2000 onwards. The majority of these studies put the

prevalence rate for the presence of an anxiety disorder at between three and seven per cent for children of primary school age (Briggs-Gowan, Horwitz, Schwab-Stone, Leventhal, & Leaf, 2000; Costello et al., 2003; Ford et al., 2003), but higher prevalence rates have been reported (Kroes et al., 2001), and there is reason to suggest many studies underestimate their occurrence. For example, parents may be under-reporting symptoms experienced by children. In a study by Rapoport et al. (2000) into the prevalence of obsessive-compulsive disorder (OCD), a prevalence of 0.3 per cent was reported by parents of 1,285 9-17 year-olds, whereas prevalence based on child-report was 2.4 per cent.

Table 1. Prevalence of anxiety disorders among children of primary school age

Study	Country	Age (yrs)	Any Anxiety Disorder	GAD ^a	Soc ^b	Sep ^c	OCD ^d	SP ^e
Ford et al. (2003)	Great Britain	5-7	3.19%	0.16%	0.33%	1.48%	0.03	1.17%
Ford et al. (2003)	Great Britain	8-10	3.05%	0.57%	0.24%	1.09%	0.14	0.97%
Briggs-Gowan et al. (2000)	USA	5-9	6.1%	3.6%		3.6%		2.8%
Costello et al. (2003)	USA	9-10	4.6%	0.7%	0.3%	4.1%		0.2
Costello et al. (2003)	USA	11	2.6%	0.9%		1.2%		<0.01
Kroes et al. (2001)	Holland	6-8	23.8%			11%	4.4%	21.9%

Note. ^aGAD = Generalised Anxiety Disorder; ^bSoc = Social Anxiety Disorder; ^cSep = Separation Anxiety Disorder; ^dOCD = Obsessive-Compulsive Disorder; ^eSP = Specific Phobia

A number of studies indicate that many children experience levels of anxiety symptoms that do not meet criteria for a disorder, but are nevertheless high and potentially debilitating. Chavira et al. (2004) reported that over a third of children and adolescents suffered from mild to moderate impairment from anxiety, although their severity levels were not enough to achieve diagnosis of a disorder. Meanwhile Angold, Costello and Erkanli (1999) reported that 14 per cent of the community sample from the Great Smoky Mountains study displayed significant

symptomatic impairment, despite not reaching diagnostic criteria for a psychiatric disorder. Studies which have administered the Spence Children's Anxiety Scale (Spence, 1998) to community populations in various countries indicate that levels of anxiety symptoms among British school children are relatively high in comparison to children in other parts of the world (Educational Psychology Service Stirling, 2008; Essau, Sakano, Ishikawa, & Sasagawa, 2004; Essau, Sasagawa, Anastassiou-Hadjicharalambous, Guzman, & Ollendicke, 2011; Stallard et al., 2005). One previous study, which used an adapted version of the Spence Children's Anxiety Scale on a community sample of more than 2500 English school children, indicated that symptoms relating to generalised anxiety (defined as excessive anxiety or worry, relating to a variety of events and activities, APA, 2013) and obsessive-compulsive symptoms were more common than other symptoms of anxiety in children (Smith, Gibb, Neil & Quay, 2012)². 30% of children in this study reported that they worried 'a lot' that something awful would happen to somebody in their family, while approximately 14% of children indicated that they experienced obsessions or compulsions (i.e. being bothered by bad or silly thoughts or pictures in their mind, or having to do some things in the right way to stop bad things happening) 'a lot'.

1.3 Types of anxiety disorders and symptoms in children

Various distinctions have been made between different sorts of anxiety symptoms and disorders. The Diagnostic and Statistical Manual of mental disorders (5th ed.; American Psychiatric Association, 2013) outlines several different anxiety subtypes which can be experienced in children. In the next section, these different subtypes and their associated symptoms will be described in more detail, with an emphasis on how symptoms, which may not necessarily reach criteria for a disorder, may be experienced in a school context.

One of the most commonly diagnosed types of anxiety in children is separation anxiety, characterised by developmentally inappropriate and excessive anxiety

² Smith, M., Gibb, J., Neil, L., & Quay, K. (2012). Stress in Children: the prevalence and patterning of somatic symptoms and anxiety in children aged seven to eleven years. *Unpublished report to the Department of Health (project number 005/0134)*.

regarding separation from home or significant attachment figures (APA, 2013). Alongside persistent worry and distress when separation occurs or is anticipated, symptoms can include school refusal, sleep disturbances (including nightmares) and somatic complaints associated with parting. Research suggests that separation anxiety disorder typically emerges when children are between seven and nine years old (Last, Perrin, Hersen, & Kazdin, 1992). According to Loades and Mastoyannopolou (2010), in a school context children may express concerns to a teacher that their parent is in danger or become ill, ask to call or speak to a parent or to return home during breaks to visit them. Children may also become visibly upset when their parents drop them off in the morning, or be reluctant to attend school and be withdrawn after parents drop them off.

Specific phobias (a marked or persistent fear of a particular object or situation) and social anxiety disorder (a marked and persistent fear of embarrassment or humiliation in social or performance situations) also tend to emerge in childhood. While Kessler et al. (2007) suggest the mean age of onset for specific phobia is between seven and fourteen years, social anxiety tends to emerge between ten and thirteen years (Nelson et al., 2000; Otto et al., 2001) although it has been identified in children as young as eight years-old (Beidel & Turner, 1998). Symptoms related to phobias may go unnoticed in the classroom setting, as commonly feared stimuli such as dogs, spiders and lifts, may rarely be present. In contrast, teachers may be in an advantageous position when it comes to recognising signs of social anxiety, as they regularly observe children interacting with their peers and members of staff. In a classroom environment, social anxiety may manifest itself in a child experiencing difficulties speaking in front of the class or talking to teachers, as well as the avoidance of social situations and difficulties making friends. According to Castro Fanseca and Perin (2011), in addition to avoidant behaviours, children may also cry and have tantrums when put in situations where they face scrutiny by others.

Other anxiety disorders that can affect children include generalised anxiety disorder, panic disorder, agoraphobia and selective mutism. Generalised anxiety disorder is characterised by excessive anxiety or worry, relating to a range of situations and events. In children this anxiety may relate to school performance,

family and peer relationships, and health. Symptoms of generalised anxiety include restlessness or feeling keyed up or on edge, being easily tired, difficulty concentrating or the mind going blank, irritability, muscle tension, and sleep disturbance. In a school environment, generalised anxiety may manifest itself as worries relating to performance and quality of work (McLoone, Hudson, & Rapee, 2006). Behaviourally, this may become evident through reassurance-seeking from teachers and peers (Masi, Mucci, Favilla, Romano, & Poli, 1999) and perfectionist tendencies (Lyneham & Rapee, 2004).

Panic disorder involves recurrent and unexpected panic attacks followed by fear of having future panic attacks or worry about the implications of the attack. Although the median age of onset for panic disorder is in adulthood (Kessler et al., 2007), panic symptoms, such as feeling short of breath, trembling, and shaking, have been identified in young children (Spence, 1997).

Obsessive-compulsive disorder (OCD) is characterized by the presence of obsessions (unwanted, repetitive or intrusive thoughts) and compulsions (unnecessary repetitive behaviours and mental activities). Obsessions about contamination, harm avoidance, symmetry and moral issues are typical, while common compulsions include washing, checking and repeating (Rapoport & Shaw, 2008). According to Rasmussen and Eisen (1992) at least half of all cases of OCD have their onset in childhood. Until very recently it has been considered as an anxiety disorder, but was removed from this category in the latest edition of the Diagnostic and Statistical Manual of Mental Disorders (5th ed.; *DSM-5*; American Psychiatric Association, 2013), after work on this thesis began.

Obsessive-compulsive symptoms may be particularly hard to notice in a school setting. Teachers are unlikely to be around when children are engaging in compulsions such as repeated hand washing. Furthermore, secrecy “appears to be a hallmark of childhood onset OCD” (Rapoport and Shaw, 2008, p.700). Children realise that their behaviours are not logical and find them embarrassing, so may purposefully carry out rituals in private. Nevertheless it is possible that some symptoms may be displayed in a classroom environment. For example, checking

doors, locks, and that lights and equipment with the potential to be harmful (e.g. scientific or home economics equipment) are properly turned off. Other symptoms that could be observed include rituals surrounding ordering or arranging school equipment (e.g. a need for symmetry, order or exactness) or cleaning (e.g. after painting or messy play).

1.4 Somatic symptoms in children and their prevalence

Somatic (bodily) symptoms that often, but not necessarily, occur in the absence of an identified bodily cause such as abdominal pain, nausea, fatigue and sore muscles are also commonly reported in school aged children (Garber et al., 1991; Meesters et al., 2003; Rask et al., 2009). Using the Children's Somatisation Inventory (CSI; Walker & Green, 1989), a scale which was designed to assess somatic symptoms which frequently present in the absence of an apparent medical cause (e.g., headaches, nausea, constipation), Garber et al. (1991) found that over half of a community sample of 540 US children aged between 7 and 18 reported experiencing at least one such symptom in the previous two weeks, and that 15.2% reported experiencing at least four. Using the Flemish version of the same instrument, the Children's Somatisation Inventory, Vervoort, Goubert, Eccleston, Bijttebier, & Crombez (2006) reported a similar prevalence rate among a sample of 193 children aged 9 to 13 years. Again, more than half of children (54.9%) reported experiencing at least one severe somatic symptom over the previous two weeks. The most commonly reported symptom was headaches. Nearly a fifth of children (19.2%) reported experiencing these 'a lot' or 'a whole lot' over the last two weeks. The next most commonly reported symptom was stomach pain (11.9%), followed by pain in limbs (9.8%) and sore muscles (9.3%). In a sample of 479 Dutch school children aged between 10 and 16 years (mean age 12.79 years), Meesters et al. (2003) reported lower prevalence rates of somatic symptoms. Only 14.2 per cent of children reported one severe symptom, 6.7 per cent reported two and 2.1 per cent reported three over the last two weeks.

1.5 Types of somatic symptoms in children

Somatic symptoms in community samples of children have mainly been assessed with the Children's Somatisation Inventory (CSI: Walker and Green, 1989). The items were developed to reflect the diagnostic criteria of somatisation disorder in the Diagnostic and Statistical Manual of Mental Disorders (3rd ed., rev.; *DSM-III-R*; American Psychiatric Association, 1987). The 24-item version, adapted to be more appropriate for use with children (Walker, Beck, Garber, & Lambert, 2009) includes pain symptoms (e.g., headaches, pain in arms or legs, stomach aches and pain in the heart or chest), gastrointestinal symptoms (e.g., nausea, diarrhoea, constipation), symptoms related to feelings of weakness (e.g., feeling tired or low in energy), 'pseudoneurological' symptoms (e.g., numbness or tingling in parts of the body), and cardiovascular symptoms (e.g., difficulty breathing).

In section 1.3, I outlined how different types of anxiety symptoms may manifest in a classroom environment, and suggested that some might be more likely to be noted by teachers than others. Similarly, with somatic symptoms, there are reasons to suggest that some might be more easily recognised by teachers than others.

Vervoot et al. (2006) reported that headaches and stomach pain were the most often reported somatic symptoms in their community sample of 9-13 year olds, and psychological interventions for medically unexplained symptoms in children have focused on headaches and recurrent abdominal pain (Eccleston et al., 2014). It is therefore reasonable to hypothesise that teachers might be more aware of these symptoms because they are more commonly reported than symptoms such as feeling weak in parts of the body, or numbness/tingling. Furthermore, children may deem these symptoms more socially acceptable to report than other symptoms such as constipation and diarrhoea. Symptoms such as headaches may also be more likely to be triggered in a classroom environment, where children are required to concentrate on schoolwork, as opposed to other items on the CSI such as feeling sick from food.

1.6 The relationship between anxiety and somatic symptoms in children

Somatic symptoms in children frequently co-occur with symptoms of anxiety (Campo & Fritsch, 1994; Garber et al., 1991; Litcher, 2001; Meesters et al., 2003; Ramchandani, Hotopf, Sandhu, & Stein, 2005). Meesters et al. (2003) reported moderately sized correlation coefficients between the Children's Somatisation Inventory (CSI) and the trait scale of the State Trait Anxiety Inventory for Children (STAIC; Spielberger, 1976), ($r = .38$), however some recent studies suggest an even stronger association between anxiety and somatic symptoms in children. Lavigne, Saps and Bryant (2012), for example, reported a moderately large association ($r = .57$) between the CSI and the trait scale of the STAIC in a community sample of 233 American children aged eight to 15 years. Meanwhile Smith et al. (2012) reported an even higher correlation ($r = .69$) between English seven to 11 year-old children's scores on the CSI and their scores on the Spence Children's Anxiety Scale, (SCAS; Spence, 1998) and a moderately strong correlation ($r = .51$) between parents' reports of children's symptoms on an adapted 18-item version of the CSI and an adapted version of the SCAS, comprising items relating to generalised anxiety and separation anxiety only. Finally Essau, Olaya, Boksztzanin, Gilvarry, and Bray (2013) reported a similar sized association ($r = .56$) between children's self-reported scores on the SCAS and the CSI in a community sample of 733 children aged 12 to 17 years in Poland.

A number of theories have been put forward in an attempt to explain somatic symptoms of unknown pathology, variously described as functional somatic symptoms (Beck, 2008) medically unexplained symptoms (Lavigne et al., 2012) and somatoform symptoms (Dantzer, 2005). It has been suggested that in some cases there may be medical explanations for symptoms that have not been identified (Dimsdale & Dantzer, 2007). Meanwhile, close associations between somatic symptoms and symptoms of anxiety and (later) depression have given rise to various psychological explanations. It has been suggested, for example, that hyper-vigilance associated with anxiety might lead individuals to pay more attention to normal physical symptoms and to catastrophise them (Allen, Escobar, Lehrer, Gara,

& Woolfolk, 2002; Deary, Chalder, & Sharpe, 2007), or that anxiety manifests itself in somatic symptoms among those unable to communicate their distress directly (Garraida, 1996; Gledhill & Garraida, 2005; Lloyd, 1986).

Psychobiological theories have focused on bidirectional pathways between the systems responsible for organising our response to stress (e.g., the hypothalamic-pituitary-adrenal axis, involved in the production of the 'stress hormone' cortisol) and the immune and digestive systems (McEwen, 1998; Segerstrom & Miller, 2004), and on shared genetic pathways to psychiatric and somatic symptoms as opposed to causal links between the two (Kato, Sullivan, Evengard, & Pedersen, 2009). In one model of somatisation, Dantzer and colleagues (Dantzer, 2001, 2005; Dimsdale & Dantzer, 2007) highlight the role of the brain cytokine system, which organises the subjective, behavioural and physiological components of sickness (e.g., pain, mood alterations, fatigue) and is normally activated by the immune system in response to infection. Dantzer (2005) proposed that this system can become sensitised, for example by stimulation early in development, or environmental stressors, so that it is more likely to be triggered by a weaker or non-primary (e.g., non-immune) stimulus in the future. This theory may explain why the subjective experience of physical symptoms can appear disproportionate.

1.7 Anxiety and somatic symptoms by gender and age

Research into the prevalence and patterning of anxiety and somatic symptoms in community samples has found that girls report more anxiety than boys; and that, in middle childhood at least, anxiety decreases linearly with age. In an Australian study involving 2052 children aged 8-12 years (Spence, 1998), girls reported significantly more symptoms of panic and agoraphobia, separation anxiety, social anxiety, physical injury fears (e.g., fear of dogs) and generalised anxiety than boys. Children of both genders reported similar levels of obsessive-compulsive symptoms. In this study older children reported significantly higher levels of separation anxiety, panic and agoraphobia, social phobia and obsessive-compulsive symptoms than younger children but generalised anxiety and physical injury fear subscale scores did not differ significantly by age. Similarly, in an English sample of

more than 2500 children aged 7-11 years, which used the same measure, girls reported more symptoms than boys on all six anxiety subtypes. There was also a linear decrease in all types of anxiety with age, except for levels of social phobia (Smith, Gibb, Neil & Quay, 2012). In this same study, girls also reported significantly higher levels of symptoms on the Children's Somatisation Inventory (CSI: Walker and Green, 1989) and somatic symptoms followed a similar linear decrease with age as anxiety symptoms. However, in a study involving 540 7-18 year olds in America, Garber, Walker and Zeman (1991) did not find significant differences in symptoms by age group.

A gender difference has also been shown in the clinical diagnosis of anxiety *disorders*, with girls significantly more likely to be diagnosed with one, even after controlling for potentially confounding factors (Lewinsohn, Gotlib, Lewinsohn, Seeley, & Allen, 1998), and girls more likely to report to GPs with unexplained medical symptoms (Campo, Jansen-McWilliams, Comer, & Kelleher, 1999). The picture for anxiety disorders by age is slightly different. A meta-analysis by Costello, Egger, Copeland, Erklani, and Angold (2011) did not find significant differences in the prevalence of most anxiety disorders between adolescents and young children, although adolescents were significantly more likely to be diagnosed with panic disorder. Meanwhile Campo et al. (1999) reported an increase in the number of children reporting to GPs with unexplained medical symptoms between the ages of 6-10 and 11-15 years.

1.8 Aetiology of anxiety and somatic symptoms: Non-environmental factors

The next section will consider the aetiology of anxiety and functional somatic symptoms in more detail, with a consideration of the role of genetics, temperament, family factors, and peer influences in their development.

1.8.1 Genetic and biological influences

Anxiety runs in families (Last et al., 1991; Steinhausen et al., 2009). Odds ratios of between four and six have been cited for the development of an anxiety disorder if a first-degree relative has also developed one. Twin and adoption studies have

been carried out in an attempt to disentangle genetic influences from the influence of the family environment, and subsequently heritability for anxiety disorders has been estimated at between 30 and 67 per cent (Eley & Gregory, 2004; Hettema et al., 2001; Spatola et al., 2007). A genetic component has been implicated in the development of each of the anxiety subtypes separately, with rates being lowest for generalized anxiety and highest for agoraphobia (Feigon, Waldman, Levy, & Hay, 2001; Hettema et al., 2001; Hudziak et al., 2004; Kendler, Karkowski, & Prescott, 1999; Ollendick & Hirshfeld-Becker, 2002).

It is thought that several genes influence anxiety, with the majority of these genes accounting for less than one per cent of variance (Gregory & Eley, 2011). A gene linked to the neurotransmitter serotonin, or more specifically, a variant in the serotonin transporter gene known as 5-HTT, has received the most attention (Hariri et al., 2002; Hudson et al., 2013; Maximino, 2012; Sen, Burmeister, & Ghosh, 2004) with research also focusing on the way this gene interacts with environmental factors such as stressful life events (Fox et al., 2005; Gross & Hen, 2004) in the development of anxiety. Other research has implicated dopamine receptors (Lakatos et al., 2003; Millet et al., 2003) and the gamma-aminobutyric (GABA) system (Hettema et al., 2006) in the development of anxiety, while the corticotropin-releasing hormone (CRH) has been associated with behavioural inhibition (Smoller et al., 2003).

Genetic influences have also been identified in the development of functional somatic symptoms, which, like anxiety, run in families (Campo & Fritsch, 1994; Walker, Garber, & Greene, 1991; Walker & Greene, 1989). In a population based cohort study involving 967 participants from the north-west of England, Holliday et al. (2010) identified genes related to the neurotransmitter serotonin and the hypothalamic-pituitary-adrenal axis that were associated with functional somatic symptoms, independently of anxiety and depression. Evidence suggests that common psychiatric disorders and functional somatic symptoms have shared, but also unique, genetic influences (Kato et al., 2009).

Non-gene related biological factors might also play a role in the development of anxiety and functional somatic symptoms, for example through the transference of the stress hormone cortisol from mother to foetus. In support of this, strong associations have been found between maternal plasma and foetal plasma cortisol levels (Gitau, Fisk, Teixeira, Cameron, & Glover, 2001; Keshavarzi et al., 2014). In a review of the role of antenatal maternal stress on child development, Talge, Neal and Glover (2007) concluded that if a mother is stressed when she is pregnant, her child is significantly more likely to be anxious, irrespective of postnatal anxiety and depression, however this association could also be attributable to shared genetic variance or other environmental factors.

1.8.2 Temperament

Temperament “concerns biologically based, largely heritable, individual differences that contribute to the disposition or behaviour of a person” (Lonigan, Phillips, Wilson, & Allan, 2011, p.199) . According to the tripartite model of anxiety and depression (Clark & Watson, 1991) there is an explanatory link between temperamental negative affectivity (sensitivity to negative stimuli, also referred to as neuroticism) and both anxiety and depression. In this model depression is characterised by high negative affectivity accompanied by low positive affectivity (sensitivity to positive stimuli, also referred to as surgency); and anxiety is characterised by high levels of negative affectivity and physiological arousal. In support of this theory, Austin and Chorpita (2004) used multi-sample structural equation modelling to show that negative affectivity, as measured by a 27-item scale called the Affect and Arousal Scale (Chorpita, Daleiden, Moffitt, Yim, & Umemoto, 2000; Daleiden, Chorpita, & Lu, 2000) predicted anxiety (as measured by the Revised Child Anxiety and Depression Scale) in five ethnic groups in a community sample of 1155 children aged seven to 18 (mean age = 12.6 years). Although this study was cross-sectional, there is some evidence from longitudinal studies to support a causal role for negative affectivity in the development of anxiety. In a community sample of 270 children (mean age = 12.9 years), for example, Lonigan, Phillips and Hooe (2003) showed that high negative affectivity predicted increases in anxiety symptoms over a period of seven months.

Behavioural inhibition is a temperamental trait observable in infancy, characterised by fear and withdrawal when faced with novel people or events (Kagan, Snidman, & Arcus, 1998). In a longitudinal study of 241 children aged five to eight years old, conducted over three years, behavioural inhibition (BI) was shown to be a risk factor for the development of child anxiety disorders, primarily social anxiety disorder (Muris, van Brakel, Arntz, & Schouten, 2011). At a five year follow up of 215 children, Hirshfeld-Becker et al. (2007) reported that 22 per cent of children who had previously been categorised as having behavioural inhibition had developed social phobia, in comparison to eight per cent of those without behavioural inhibition, and in a recent meta-analysis of seven studies, behavioural inhibition was shown to increase the risk of developing social anxiety disorder by sevenfold (Clauss & Blackford, 2012). Behavioural inhibition clearly has utility in predicting the development of social phobia, however it does not seem reliably to predict other anxiety disorders.

Temperament has also been associated with somatic symptoms. Rocha and Prkachin (2007) reported that a temperamental trait they described as 'adjustment', comprising withdrawal, mood and adaptable behaviour, as reported by mothers, predicted children's self-reports of somatic symptoms seven years later. In a much larger study featuring over five thousand children, Wolff et al. (2010) found that a child's fearful temperament as reported by the mother six months after birth predicted children's somatic complaints at 18 months.

1.9 Aetiology of anxiety and somatic symptoms: Environmental family factors

Heritability estimates for the development of anxiety leave up to 70 per cent of the variability in anxiety unaccounted for. In the next few sections, environmental factors associated with anxiety and somatic symptoms will be explored, beginning with family factors.

1.9.1 Attachment

Attachment theories focus on how parent-child interactions, from birth, can promote or hinder a sense of security in the infant. According to its early

proponents (Ainsworth, Blehar, Waters, & Wall, 1978; Bowlby, 1969) consistent sensitivity to infant behaviours such as crying results in secure attachment, where an infant perceives their parent as a protector and a secure base from which to explore the environment; whereas a lack of, or inconsistent, sensitivity leads to insecure attachment, giving rise to anxiety. Using the well-known 'strange situation' procedure, Ainsworth, Blehar, Waters, & Wall (1978) identified different types of insecure attachment: insecure avoidant, in which children do not appear bothered by separation and ignore the caregiver on reunion, and insecure ambivalent-resistant, where the children show great distress on separation and remain distressed on reunion. Parent-child interactions facilitating secure attachment are considered to be bidirectional. While factors such as anxiety or depression in the parent may compromise their ability to respond sensitively to their child, for example (Murray, 1996); heritable factors such as child temperament may reduce the impact of otherwise sensitive parent behaviours on the development of a secure attachment (Goldsmith, Bradshaw, & Rieser-Danner, 1986).

In a meta-analytic review of 46 studies from 1984 to 2010, including over 8000 children, a moderate, positive relationship ($r = .30$) was found between insecure attachment and anxiety, and the association was most strongly related to ambivalent attachment (Colonnesi et al., 2011). A lack of experimental studies makes it difficult to support a causal link between attachment type and anxiety, but some longitudinal studies have investigated whether attachment, as assessed in infancy, predicts elevated anxiety later in childhood or adolescence. Bar-Haim, Dan, Eshel and Sagi-Schwartz (2007), for example, found that both boys and girls assessed as being ambivalently attached in infancy had higher levels of school phobia at 11 years, while boys (but not girls) also had higher levels of social phobia (as measured by combined parent and child reports of anxiety on a standardised measure of anxiety symptoms, the Screen for Child Anxiety Related Emotional Disorders (SCARED; Birmaher et al., 1997)). This study had the added advantage of controlling for maternal reports of difficult life events in the intervening period. The actual effect size was small however (Cohen's $d = .33$). A study carried out by Warren, Huston, Egeland, and Sroufe (1997) shows more robust support for

attachment theory. Warren et al. followed up 172 children who had been independently assessed for their attachment type at 12 months with a clinical assessment of anxiety disorders at 17.5 years. 28% of adolescents who had been classified as ambivalently attached reached criteria for a past or present anxiety disorder, compared to 13% of adolescents categorised with secure or avoidant attachment styles. Attachment type remained a significant predictor of anxiety disorders over and above the impact of infant temperament and maternal anxiety, assessed in the child's infancy.

In attachment theory, functional somatic symptoms are conceptualised as serving the purpose of inducing care-giving behaviours from an attachment figure and keeping them close (Beck, 2008; Campo & Fritsch, 1994), but research is lacking which provides empirical evidence for this.

1.9.2 Parental control

It is theorised that parental over-control reduces a child's sense of their own capabilities and increases their perception of the world as a perilous and unpredictable place, giving rise to anxiety (Chorpita & Barlow, 1998), or maintaining it in those who already have an anxious temperament (Hudson & Rapee, 2004). Synthesising the literature on parental over-control can be difficult because the labels used to describe the constructs it encompasses (e.g. psychological control, behaviour control and overprotection, as well as intrusiveness, autonomy granting and over involvement) are variable, and vary in the extent to which they overlap with each other and with other parenting constructs such as rejection. Nevertheless a small but significant association between anxiety in children and parental over-control has consistently been found (Deary et al., 2007; McLeod, Wood, & Weisz, 2007; van der Bruggen, Stams, & Bogels, 2008; Wood, McLeod, Sigman, Hwang, & Chu, 2003). A lack of autonomy granting, exemplified, for example, by discouragement of children's opinions and choices, has been more strongly associated with anxiety than 'over-control,' defined as excessive restrictiveness, and encouragement of excessive dependence on the parent by the child (McLeod et al., 2007).

One of the challenges in interpreting the association between anxiety and parenting factors is identifying causal effects, and for this we turn to experimental studies. While some researchers suggest it is the anxious child who drives the behaviour, eliciting over-control from parents who seek to reduce their child's exposure to any distressing experiences (Eley, Napolitano, Lau, & Gregory, 2010; Rubin, Nelson, Hastings, & Asendorpf, 1999), there is also evidence from experimental studies which suggests parental control may indeed play a causal role in child anxiety. For example, in a study by de Wilde and Rapee, (2008), mothers of 26 children aged seven to 13 years were randomly assigned to behave either in an over-controlling or in a minimally controlling way while their child prepared a speech. When, subsequently, children were asked to prepare a speech alone, children whose mothers had been assigned to the over-controlling group demonstrated greater anxiety. Using a similar experimental design, and controlling for mothers' levels of negativity and habitual levels of control, Thirlwall and Creswell (2010) found that four to five year old children of mothers instructed to behave in a controlling way, again during the preparation of a speech, made more negative predictions about their performance and described feeling less happy about the task. This was moderated by child trait anxiety. Hudson, Doyle and Gar (2009) demonstrated, again using an experimental task, that child anxiety also elicits over-controlling parenting. The interactions of 45 mothers of children with anxiety disorders and 46 mothers of children without an anxiety disorder were observed during three separate speech preparation tasks, firstly with their own child, secondly with a child from the same diagnostic group as their own child (i.e. clinically anxious or not), and thirdly with a child from the other diagnostic group to their child. Mothers were more involved with anxious children, in comparison to non-anxious children, irrespective of whether that child was their own and of the clinical diagnosis of their own child. It appears increasingly likely that parental and child behaviour are each contributory and reciprocal factors.

While a growing body of literature implicates parental over-control in relation to child anxiety, less attention has been paid to its potential role in the development of functional somatic symptoms. It has been suggested that somatic symptoms are,

in fact, a manifestation of anxiety in those unable to communicate it directly. If so, a lack of opportunity from parents for a child to express their own opinions and choices (a lack of 'psychological autonomy granting') may prevent children developing the confidence or necessary communication skills to express their anxiety. There is some limited evidence of a relationship between parental over-control and functional somatic symptoms. Janssens, Oldehinkel and Rosmalen (2009) reported that parental overprotection (as perceived by the child) was a predictor of the development of functional somatic symptoms in a community population of 2230 ten to 12 year olds.

1.9.3 Social learning and modelling

The classic bobo doll experiment (Bandura, 1961) demonstrated that behaviour can be learned from the environment through social observation. Gerull and Rapee (2002) reported that when a stimulus (in this case a rubber snake or spider) was accompanied with a negative expression from the mother, toddlers demonstrated greater fear and avoidance than when the mother had displayed a neutral or positive expression. A few years later de Rosnay et al. (2006) showed that when infants observed their mothers behaving in a socially anxious way towards a stranger, they were significantly more fearful and avoidant of that stranger. Both these studies involved very young children. In an experimental study involving older children, aged between 8 and 12 years, 25 parents were trained to act in either an anxious way, or in a relaxed and confident way before a planned spelling test. In the anxious condition, children revealed more anxious feelings, cognitions and desired avoidance (Burstein & Ginsburg, 2010) than children in the other group. A limitation of the previous three studies is that parents were trained to display anxious behaviours and so they were not naturalistic. Children may have been responding to their parent behaving in what they interpreted as an unexpected and strange way, and the studies do not reveal whether the effects of modelling generalised to other scenarios and how long the effects lasted. In a study that overcomes some of these limitations, mothers with social phobia and non-anxious controls were recruited in pregnancy. When the children were around one year old they observed their mothers conversing with a stranger. Mothers' expressed

anxiety at this stage predicted infants' avoidance of a stranger four months later. Behavioural inhibition moderated this association (Murray et al., 2008).

There is plenty of evidence showing that parents' somatic symptoms are associated with children's somatic symptoms (Craig, Cox, & Klein, 2002; Walker et al., 1991; Walker, Garber, & Greene, 1994; Walker & Greene, 1989), however there are no known experimental studies as described above to empirically test that modelling is responsible. Osborne, Hatcher, and Richtsmeier (1989) claim that social modelling is the most likely explanation of their finding that both children with recurrent *unexplained* pain and their parents were more likely to identify other people exhibiting pain or illness behaviour in their environment, than children with recurrent *explained* pain. They claim this, partly because children identified models who were not directly related to them such as step-relatives and classmates, and partly because the models often suffered from a serious organic disease rather than functional somatic symptoms. However these explanations do not rule out other explanations, for example, the stress of witnessing a model experiencing pain could give rise to physical symptoms (Garralda, 1996).

A social learning hypothesis for the intergenerational transmission of functional somatic symptoms has been supported by Levy et al. (2004). Levy and colleagues interviewed 204 mothers with irritable bowel syndrome (IBS) and their 296 children, and 241 mothers without irritable bowel syndrome and their 335 children. Parents who reported 'solicitous' responses to their children's illness complaints (as assessed by questions such as 'When your child has a stomach ache or abdominal pain, how often do you tell your child he/she doesn't have to finish all of his/her homework?') were positively associated with children's perceptions of how serious their gastrointestinal symptoms were, independently of parent IBS status, but did not influence children's perceptions of how often they happened.

1.9.4 Information transfer

It is theorised that parents can play a role in the development of children's anxious cognitions and behaviours not just by demonstrating these behaviours themselves, but by transmitting threat information verbally. It has been shown that mothers of

anxious children are more likely than mothers of non-anxious children to predict poor performance in tasks conducted by their children (Kortlander, Kendall, & Panichelli-Mindel, 1997) and evidence suggests parents express these beliefs to the detriment of their children. For example, Barrett, Rapee, Dadds and Ryan (1996) asked parents and seven to 14 year old children to discuss how they would respond to an ambiguous scenario in order to generate a plan. For example: 'You see a group of students from another class playing a great game. As you (your child) walk over and want to join in, you notice that they are laughing'. After the discussion, anxious children were more likely to produce an avoidant plan. In fact, parents of anxious children were more likely to suggest and support avoidant responses (Dadds & Barrett, 1996). Barrett et al. (1996) described this as the 'FEAR' effect: Family Enhancement of Aggressive or Avoidant Responses. In experimental studies, Field and colleagues have shown that verbal threat information about a novel animal increases fear responses in six to ten year old children (Muris and Field, 2010), with effects lasting up to six months (Field, Lawson, & Banerjee, 2008).

1.10 Aetiology of anxiety and somatic symptoms: Non-familial environmental factors

1.10.1 Negative life events

Several studies link negative life events with the onset of anxiety in children (Boer et al., 2002; Broeren, Newall, Dodd, Locker, & Hudson, 2014; Dougherty et al., 2013; Rapee & Szollos, 2002) and this does not appear to be due to comorbidity with non-anxiety disorders (Allen & Rapee, 2009). Daily stressors (Walker, Garber, Smith, Van Slyke, & Claar, 2001); negative family life events (van Gils, Janssens, & Rosmalen, 2014; Walker & Greene, 1991) and social disadvantage (Fearon & Hotopf, 2001) have also been associated with functional somatic symptoms.

Some studies distinguish between 'behaviour-dependent' life events, which are in some way related to the child's own behaviour, such as parental and peer conflicts, and behaviour-independent negative life events, such as a death in the family. In a large study involving more than 200 children over a five-year period, Broeren et al., (2014) found that behaviour-dependent life events, in particular, were predictive of

increases in anxiety symptoms, the likelihood of having an anxiety disorder and an increased number of anxiety diagnoses. Unlike most studies, the authors also examined the impact of positive life events, and found that these acted as a buffer against anxiety, reducing the risk of being diagnosed with an anxiety disorder. Other researchers have attempted to disentangle which life events are most strongly associated with anxiety as opposed to depression. For example, Eley and Stevenson (2000) found that loss events, schoolwork stressors, family relationship problems and peer problems were associated with depression but not anxiety, whereas 'threat events' such as the risk of the loss of an attachment figure, physical jeopardy and trauma as a witness were uniquely associated with anxiety. Eley and Stevenson's study had the advantage of using an interview methodology, meaning that the nature of life events and their perceived impact could be objectively verified. The study also used interviews with both mother and child, when most studies in this area interviewed only mothers. In conclusion, there is a strong evidence base for an association between negative life events and anxiety, although it is difficult to disentangle the causal direction of effects.

1.10.2 Peer relationships

Friendships and other peer relationships play a significant role in children's social and emotional functioning (Hartup, 1996). La Greca and Randoll (2011) identified peer rejection and peer victimization as two particularly important aspects of problematic peer relationships which make a direct contribution to childhood anxiety. Perhaps unsurprisingly, most of the literature in this area pertains to social anxiety (La Greca & Harrison, 2005) which has been identified as both a consequence and a predictor of peer relationships (Siegel, La Greca, & Harrison, 2009). The association between peer relationships and other types of anxiety is less clear. For example, Scharfstein, Alfano, Beidel and Wong (2011) found that although they did have fewer friends, children with generalised anxiety disorder did not differ from children without anxiety disorders in the likelihood of having a best friend, participation in clubs and associations, and parent ratings of social competence. In support of this, Verduin and Kendall (2008) reported that while children with a diagnosis of social phobia were less well liked by their peers,

children with generalised anxiety or separation anxiety were not less well liked than children without these disorders. In contrast, in a meta-analysis of cross-sectional research on peer victimisation published between 1978 and 1997, Hawker and Boulton (2000) reported the same mean effect size ($r = .25$) for the relationship between peer victimisation and generalised anxiety, as that with social anxiety. Anxiety was shown to be less associated with peer victimization than depression, loneliness and self-worth, however.

Victimisation has been implicated in the development of functional somatic symptoms as well as anxiety. For example, in a study of over two thousand adolescents with an impressive 90.9% response rate, headaches, abdominal pain and sleep problems were positively associated with self-reported victimisation (Luntamo et al., 2012). These results were echoed in a subsequent meta-analysis of 30 studies (Gini & Pozzoli, 2013) which showed that bullied pupils were at least twice as likely to have psychosomatic problems as their non-bullied peers. Unfortunately the influence of confounding variables, such as anxiety, could not be controlled for in this meta-analysis. Given their strong association with anxiety, studies investigating risk factors for functional somatic symptoms need to take anxiety levels into account.

1.10.3 Teachers and the school environment

Teachers and the school environment can also play an important role in children's emotional functioning. In the NSPCC's review of calls to ChildLine between 2013 and 2014 (NSPCC, 2015), school and education problems were in the top ten concerns communicated by young people, and constituted the primary concern in 1340 (6%) of counselling sessions for children under 11. This amounted to a 19% increase in counselling about school and education in comparison to the previous year. Around a quarter of all young people (up to age 18) who described problems with school and education in a counselling session said they had spoken to a teacher about their concerns. The NSPCC report describes how some of these children felt that their teacher was not interested or did not have time for them, but unfortunately the report did not reveal what proportion of children felt this way.

There is also research which specifically investigates the effects of teaching style (e.g., a controlling versus an autonomy-supportive motivational style (Reeve, 2009)) and various aspects of the student-teacher relationship (e.g., levels of conflict (Birch & Ladd, 1998) warmth (Buyse, Verschueren, Doumen, Van Damme, & Maes, 2008) and responsiveness (Reeve, 2006)) on children's social-emotional engagement. Hamre and Pianta (2001), for example, reported that conflict and dependency in pupil-teacher relationships predicted children's school suspension and academic achievement at thirteen to fourteen years old. The association remained significant even after teachers' ratings of children's behaviour in kindergarten were taken into account. Meanwhile, in a longitudinal study in which data on 1600 pupils aged between eight and 13 was collected over three consecutive school years (Skinner, Zimmer-Gembeck, & Connell, 1998), children's reports of warmth in their teachers predicted greater levels of self-perceived control within the school environment, which in turn was associated with higher levels of active engagement in the classroom and improved academic performance. In contrast, children's reports of unsupportive teachers were associated with the development of an external locus of control and in turn, disaffection in the classroom.

While much of the research on school climate and the teacher-child relationship has focused on the associations of these factors with broader socio-emotional outcomes such as children's engagement in the classroom and attachment to school, there is also research that has directly measured associations between the teacher-child relationship and children's psychopathology. Perceived teacher regard (Roeser & Eccles, 1998), and the valuing of students' perspectives (LaRusso, Romer, & Selman, 2008), for example, have both been associated with fewer depressive symptoms in students. In the USA, Kuperminc, Leadbeater and Blatt (2001) found that scores on a measure of school climate (of which the student-teacher relationship was one facet) moderated the impact of high self-criticism and reduced self-efficacy on the development of internalising symptoms in 11 to 14 year old pupils over a one year period. In terms of somatic symptoms, a 2012 study involving 2215 adolescents in Finland found that both self-reported headaches and abdominal pain in 13 to 18 year-olds were independently associated with feeling

not cared about by teachers (Luntamo et al., 2012). This association remained when other factors associated with having headaches and abdominal pain such as being female, having psychological difficulties, smoking and peer victimization were taken into account, although the cross-sectional nature of the study still precludes conclusions on the direction of effects.

A lack of autonomy granting in parents has been associated with the development of children's anxiety symptoms (McLeod et al. 2007), therefore it is plausible that a lack of autonomy granting in teachers might also be related to children's anxiety symptoms. Furrer, Skinner, and Pitzer (2014) outline a motivational model in which coercive teaching behaviours can give rise to perceptions of incompetence and a lack of autonomy in students. Although Furrer and colleagues review these behaviours in terms of their impact on student engagement in the classroom as opposed to their anxiety symptoms, Chorpita and Barlow (1998) implicate self-perceptions such as these (e.g., a lack of mastery over one's environment), specifically in the development of anxiety, by facilitating children's perceptions of the world as an uncontrollable, and therefore more threatening place. As has been observed in the parent-child relationship, it is also plausible that already present anxiety symptoms in children elicit controlling behaviours in teachers, which are not shown towards other students. Such behaviours may nevertheless serve to maintain or exacerbate symptoms. The potentially reciprocal nature of the relationship between teachers' behaviours and children's anxiety and somatic symptoms may prove a fruitful area for further research.

1.11 Developmental course of anxiety and somatic symptoms

Anxiety disorders in children can follow a chronic or recurrent course into adulthood (Keller et al., 1992; Kessler et al., 2005). In a longitudinal study among a representative community sample in the United States of America (the Great Smoky Mountains study), 1420 children aged between 9 and 13 years were assessed annually for a psychiatric disorder up to the age of 16 (Costello et al., 2003). Children who reached criteria for any anxiety disorder at one assessment were three times more likely to be diagnosed with any anxiety disorder at the next assessment. Costello and colleagues also examined whether an anxiety disorder

predicted the development of other psychiatric disorders, controlling for concurrent comorbidity. An odds ratio of 2.7 was cited for the development of depression and 2 for substance misuse in cases where children had a previous diagnosis of an anxiety disorder, although when data from girls and boys were analysed separately, the finding was only significant for girls. Using the same cohort, Bittner et al. (2007) reported the developmental trajectories of children who had reached criteria for an anxiety disorder in childhood (before age 13) up to the age of 19. Over-anxious disorder (which has since been replaced with generalised anxiety disorder in the Diagnostic and Statistical Manual of Mental Disorders) in childhood was a significant predictor of over-anxious disorder, panic, depression and conduct disorder in adolescence.

Self-reported anxiety *symptoms*, as opposed to an anxiety disorder, in childhood have also been shown to indicate increased risk of developing a psychiatric disorder later in development. Using data from the TRAILS study, a longitudinal study of more than two thousand children born between 1989 and 1991 in the Netherlands, Ormel et al. (2015) reported that children with high scores on the Youth Self Report Questionnaire (Achenbach, 1991) at age 11 were nearly three times more likely than those with scores in the normal range to reach criteria for 12-month prevalence of a mood disorder on a diagnostic interview at age 19 (Odds ratio = 2.97), but were not more likely to reach criteria for a behavioural disorder (e.g., oppositional defiant disorder/conduct disorder) or substance dependence. Parent-reported anxiety symptoms on the Child Behaviour Checklist did not predict 12-month prevalence of a mood, anxiety or behavioural disorder at 19, but there is evidence that parent-reported anxiety symptoms in childhood can predict the development of psychiatric disorders in adulthood. Hofstra, van der Ende and Verhulst (2002) examined the predictive utility of parent-reported emotional problems on the Child Behaviour Checklist (CBCL) for 1578 children aged between 4 and 16 years in the Netherlands. Girls, but not boys, who reached the cut-off specified by Achenbach (1991) for subclinical/clinical scores on the anxious/depressed scale (e.g., scores in the 95th percentile for a normative sample), were significantly more likely to reach criteria for an anxiety diagnosis on a

diagnostic interview 14 years later, although the effect size was small. Boys' scores on the anxious/depressed subscale (but not girls') significantly predicted a diagnosis of a mood disorder in adulthood (odds ratio = 4.1).

Functional somatic symptoms can also follow a chronic course. Walker et al. (1998) followed up 76 patients who were aged between 6 and 18 when they were initially evaluated for recurrent abdominal pain (RAP) and 49 control subjects with a telephone interview five years later. The former RAP patients reported significantly more episodes of abdominal pain than the control group, as well as significantly higher levels of functional disability (e.g. school absence). Children who present to primary care with functional somatic symptoms are also more likely to meet criteria for psychiatric disorders in adulthood. Campo et al. (2001) found that 28 adults who had been evaluated for recurrent abdominal pain when aged between 6 and 17, were significantly more likely than 28 individually matched controls to reach criteria for an anxiety disorder as adults (an average of eleven years later), and experienced poorer social functioning, but interestingly there were no group differences on abdominal pain, IBS or other functional somatic symptoms between the two adult groups. In a five year longitudinal study Mulvaney, Lambert, Garber, & Walker (2006) found that many children seen in a paediatric gastroenterology clinic showed long term improvement, however children's, but not parents', reports of anxiety and depression, low self worth and greater life stress predicted chronic somatic symptoms.

Outside the clinical setting, Ormel et al. (2015) found that children's reports of somatic symptoms on the YSL at age 11 did *not* significantly predict 12-month prevalence of a psychiatric disorder measured at interview at age 19; however Hofstra, van der Ende and Verhulst (2002) found that children whose parents reported higher scores on the somatic scale of the CBCL (e.g., scores in the 95th percentile for a normative sample), were significantly more likely to reach criteria for an anxiety diagnosis on a diagnostic interview 14 years later. In a population based cohort study involving more than 2000 participants Hotopf et al. (1998) found that children who reported abdominal pain in a survey at ages 7, 11 and 15

were significantly more likely to reach criteria for a psychiatric disorder at age 36, (odds ratio 2.72 (95% confidence interval 1.65 to 4.49)), but again like Campo (2001) were not significantly more likely to experience physical symptoms in adulthood.

1.12 The case for intervention: Evaluation of programmes targeting anxiety and somatic symptoms in children

Symptoms of anxiety are distressing, associated with poorer school performance and social functioning (La Greca & Landoll, 2011; Wood, 2006), predictive of later psychological disorders (as described in the previous section), and costly to society (Snell et al., 2013). It is not surprising therefore that efforts have been made to develop programmes targeting anxiety in childhood. These interventions include ‘universal’ interventions, which are administered to a whole group regardless of levels of symptoms, and targeted interventions, aimed at children ‘at risk’ of developing an anxiety disorder, perhaps because their parent has been diagnosed with one (e.g. Ginsburg, 2009) or because they are already displaying high levels of anxiety symptoms (Dadds et al., 1999; Dadds et al., 1997).

One of the most widely used programmes targeting childhood anxiety is the FRIENDS program (Barrett, Lowry-Webster, & Turner, 2000; Barrett, Sonderegger, & Sonderegger, 2001; Barrett & Turner, 2001), a universal school-based intervention based on the principles of cognitive-behavioural therapy. The programme originated from the Coping Koala program (Barrett, Dadds, & Rapee, 1996), an Australian version of the Coping Cat program (Kendall, 1990, 1994). It involves ten weekly sessions and two booster sessions between four and twelve weeks after the final session. The sessions teach skills in relaxation, cognitive restructuring, positive self-talk, parent assisted exposure and rewards. The programme has been shown to reduce symptoms of anxiety (Barrett and Turner, 2001) with group differences remaining at 12-month follow up (Lowry-Webster, Barrett, & Dadds, 2001; Lowry-Webster, Barrett, & Lock, 2003). An additional study found that for 10-11 year old children (but not 13-14 year old children) intervention reductions in anxiety were maintained up to three years later (Barrett, Farrell, Ollendick, & Dadds, 2006; Lock

& Barrett, 2003). The efficacy of the FRIENDS programme has more recently been demonstrated in a sample of German children (Essau, Conradt, Sasagawa, & Ollendick, 2012). The authors identified perfectionism and avoidant coping as mediators of improvements in anxiety scores. In the UK, Stallard, Simpson, Anderson and Goddard (2008) reported a decrease in anxiety symptoms among children who had taken part in the FRIENDS programme at 3-month and 12-month follow up, in comparison to their levels of symptoms when initially assessed six months before the programme, but not in comparison to their symptoms immediately before treatment. This study was limited by a lack of a control group and a relatively small sample (N = 63). In a review by Neil and Christensen (2009), eleven of the sixteen universal trials included reported significant reductions in anxiety symptoms between the intervention and control conditions, with effect sizes (Cohen's *d*) ranging from 0.31-1.37. Despite these promising findings, there are some limitations to the evidence base for universal preventions. In Barrett et al. (2006), for example, although reductions in anxiety were maintained three years later, 47% of participants were not followed up at this point. Despite the encouraging findings from outside the UK, the case for introducing programmes into UK schools would benefit from more evidence of their efficacy within a UK setting (though see Stallard et al., 2014). The scale and associated effort and cost of implementing universal programmes may also act as a barrier to their introduction.

In a bid to focus interventions on those who need it, selective interventions (those which target children who are at risk of developing anxiety) and indicated interventions (those which target children demonstrating early symptoms of the disorder) have been designed. For example, Ginsburg (2009) evaluated the effectiveness of the CAPS programme (Child Anxiety Prevention Study) on 40 children aged 7-12 who had a parent with an anxiety disorder. The programme targets children and parents and features problem solving, improving knowledge and communication skills and reducing risk factors such as parental overprotection. At 6-month and 12-month follow ups, none of the children randomly assigned to the intervention group had developed an anxiety disorder whereas 30% of the children assigned to the 'wait-list' group had. In a large study by Dadds and

colleagues (1997, 1999), a total of 1786 children were screened for anxiety using teacher nomination and child self report, with parents of identified children given a diagnostic interview about their child. 128 children were then assigned to an intervention or monitoring group, based on which school they attended (schools were matched for size, socioeconomic and socio-demographic status). Like FRIENDS, the intervention was based on the Coping Koala program (Barrett, Dadds, et al., 1996) and was based on Kendall's (1990) FEAR plan in which F stands for 'feeling good by learning to relax', E stands for 'expecting good things to happen through positive self talk', A is for 'actions to take in facing up to fear stimuli' and R is for 'rewarding efforts to tackle fears and worry'. Although no significant differences were found between the two groups immediately after treatment, fewer children in the intervention group were diagnosed with anxiety at six month follow up. These differences disappeared at 12 month follow up, however at two years-old, children in the intervention group were significantly less likely to be diagnosed with an anxiety disorder over the telephone by a clinician who was blind to the intervention status of the children.

Whereas efforts have been made to develop universal anxiety interventions in childhood, and programmes which target children at risk of developing an anxiety disorder, there are a lack of such interventions for functional somatic symptoms. Given the strong association between anxiety and somatic symptoms in children, it may be the case that interventions such as the FRIENDS program which has been shown to reduce anxiety, also reduces levels of somatic symptoms in children, but this has yet to be tested. Psychological interventions for children who are currently experiencing high levels of somatic symptoms have been evaluated however, and there is evidence that cognitive behavioural therapy (CBT) can be effective in reducing symptoms. For example, in a randomized controlled trial (Robins, Smith, Glutting, & Bishop, 2005), children recently diagnosed with recurrent abdominal pain were assigned into a group receiving standard medical care (n = 29) or a group receiving standard medical care plus five 40 minute long CBT interventions (n = 40), administered conjointly to them and to their parent. Children who had been assigned to the CBT group reported significantly less abdominal pain both

immediately after the intervention and at one year follow up, and significantly fewer school absences than children who received standard medical care only. Other studies have also shown positive effects for CBT on abdominal pain in children, at three and 12-month follow ups (Sanders et al., 1989; Sanders, Shepherd, Cleghorn, & Woolford, 1994). A cognitive behavioural intervention which jointly targets anxiety and physical symptoms 'TAPS' (Treatment of Anxiety and Physical Symptoms) has also shown promise. Warner et al. (2011) evaluated the effectiveness of the programme on 40 children with functional somatic symptoms (predominantly gastrointestinal symptoms) who also met criteria for an anxiety disorder. Post intervention, nearly half (45%) of the children who were randomly assigned to receive the intervention (n = 20) met criteria for an anxiety disorder compared to none of the 19 children in the control group. The intervention group also reported being significantly less bothered by their symptoms on the Children's Somatisation Inventory, and effects were maintained at three months.

Recently, Ecclestone et al. (2014) published a systematic review into the effects of psychological interventions delivered face to face for chronic and recurrent pain in children and adolescents. The majority of the 37 randomised controlled trials they included were interventions for headaches (n = 20) but the review also considered interventions for abdominal pain (n = 9) and other types of pain. For headaches, psychological interventions reduced pain post treatment and at follow up (between three and 12 months post treatment) and also anxiety post treatment, but not at follow up. Ecclestone et al. (2014) combined the other pain conditions into one group, and reported improvements in pain post treatment, but not at follow up, and no improvements in anxiety or depression post treatment or at follow up. The psychological interventions included behavioural strategies such as relaxation as well as cognitive coping skills, but the review did not distinguish between different types of psychological therapy, so it is difficult to draw conclusions about which programmes of intervention were the most successful.

In conclusion, evidence suggests that anxiety in children is treatable and preventable. Although there is a lack of studies which assess interventions for somatic symptoms in children who do not present in primary care, evidence

indicates that these symptoms too can be reduced through psychological interventions, though more research is needed to establish how long these reductions are maintained.

1.13 The role of the school in children's mental health and wellbeing

Although the school has been used as a setting for both universal and targeted interventions for anxiety in children, with teachers being trained as programme leaders in many cases (Neil & Christensen, 2009), school based interventions targeting anxiety symptoms such as the FRIENDS programme described in the previous section are not commonly implemented.

Nevertheless, in recent years the school has taken on a considerably more prominent role in promoting good mental health in its pupils. Schools are seen as an ideal place for identifying and managing mental health concerns (Greenberg, 2010) and offer an opportunity for integrated working between different agencies (Wolpert, Humphrey, Belsky, & Deighton, 2013). As well as nominating children for clinical interventions (Bernstein et al., 2005; Dadds et al., 1997; Mifsud & Rapee, 2005) school staff are being encouraged to adopt psychological approaches and work more closely with mental health professionals to tackle social, emotional and behavioural difficulties in the classroom (Cooper & Cefai, 2013).

Several government directives have emphasised the promotion of emotional wellbeing in the primary school classroom. These include National Healthy Schools (Department of Health/Department for Education and Employment, 1999), Social and Emotional Aspects of Learning (Department for Education and Skills, 2005, 2006) and Targeted Mental Health in Schools (TaMHS; Department for Children, Schools and Families, 2008). These schemes focus on both prevention and intervention for mental health problems. The SEAL and TaMHS schemes, for example, set out three 'waves' of prevention and intervention. The first wave is a universal approach (e.g, teaching social and emotional skills to all pupils). Wave two involves group work for children seen as needing help developing social and emotional skills. Finally, wave three constitutes individual therapeutic approaches offered to pupils requiring specialist help.

Another example of the increased focus on mental health in schools is the UK charity Place2Be, which according to its website (<http://www.place2be.org.uk/our-story/>) offers emotional support to children 'in house' in 235 schools. In the Place2Be model, each school is assigned a team of four or five individuals headed by a clinician who offer a range of therapeutic interventions to pupils. Children can be referred by school staff or by children themselves through a lunchtime self-referral process. Little research has been published on the efficacy of this scheme, although Lee, Tiley, and White (2009) reported that among a sample of 1864 school children aged 4-11, children's parent rated and teacher rated Strengths and Difficulties questionnaire scores were significantly lower post, as opposed to pre-intervention. The publication of research comparing individuals in the Place2Be scheme to a control group, and assessments by individuals blind to intervention status would be useful in assessing the efficacy of this scheme, as well as a breakdown of the reasons why children were referred, who referred them (e.g., their teacher or themselves) what sorts of intervention were applied and the efficacy of support for different sorts of symptoms.

There are many advantages to school based interventions targeting children's emotional health and wellbeing. Schools are viewed by children and parents as a more acceptable place to access help and support than other settings (Weist & Evans, 2005), potentially reducing any stigmatization which may prevent individuals from seeking treatment (Pescosolido, Perry, Martin, McLeod, & Jensen, 2007). There are also long waiting lists for treatment through primary care. According to a report published by a group of mental health charities and professional organisations (We Need to Talk Coalition, 2013), one in five individuals surveyed in the UK had to wait over a year for psychological treatment. The involvement of schools may help reduce these long delays.

Schools also face a number of difficulties in delivering effective interventions for children's emotional wellbeing, however. In their review of mental health interventions in schools, Weare and Nind (2011) conclude that a whole-school approach, in which changes are made to the curriculum to incorporate the teaching of certain skills, for example, is most effective. This view is echoed by Lyneham and

Rapee (2011) who point out that for the effects of intervention programmes to be sustainable they must be built into existing day-to-day systems. Although associated with the best outcomes, such systemic changes may require a great deal of effort for schools to implement, and some teachers may be resistant to incorporating non-academic interventions into the classroom (Wolpert, Humphrey, Belsky, & Deighton, 2013).

Another challenge for the school setting is the suitability of teachers to deliver psychological therapies directly. The Preventing Anxiety in Children through Education in Schools (PACES) randomised controlled trial, conducted by Stallard et al. (2014) found that the CBT based FRIENDS intervention was only successful in ameliorating anxiety symptoms when delivered by a health professional and not when delivered by a teacher. Stallard and colleagues suggested teachers may have lacked an understanding of the underlying theoretical model, compromising the programme's effectiveness. Another potential challenge for the school is securing parental involvement, a factor shown to be important for the efficacy of anxiety interventions (Barrett et al., 1996). Dadds and Roth (2008) found that only 57.5% of parents indicated interest in their 'universal' anxiety intervention, which suggests that a concerted effort may be necessary from the school to bring parents on board. Lastly, Rapee (2008) argues that for interventions to be successful they need to be adapted to be suitable for children's developmental level and culture. This is offset against recommendations that urge complete and accurate adherence to effective programmes (Weare & Nind, 2011). Achieving a balance between adaptation to the school context and fidelity to an evidence based approach may also prove challenging.

Another important point to consider is whether schools are equipped to recognise and support children with internalising symptoms (e.g., anxiety, somatic symptoms and depression) as well as externalising symptoms (e.g., oppositional behaviours). A randomised controlled trial into the TaMHS programme (Wolpert et al., 2013) showed evidence for its efficacy in tackling behavioural, but not emotional problems in 8-10 year old children. One potential explanation for this finding is that internalising symptoms are less disruptive in a classroom context and are therefore

deemed less problematic to teachers. In support of this interpretation, Loades and Mastroyannopoulou (2010) found that teachers were less concerned about clinical levels of separation anxiety in children than clinical levels of oppositional defiant disorder. Another possibility is that teachers are not able to identify such symptoms. Papandrea and Winefield (2011), designed an online questionnaire for teachers in Australia, in order to investigate why so many more pupils were referred to support from outside agencies for externalising rather than internalising symptoms. Following a context analysis of the 152 responses, the authors concluded that teachers did indeed feel they were required to recognise internalising symptoms in their pupils, but did not feel capable of putting such expectations into practice. In the United Kingdom, Rothi, Leavey and Best (2008) interviewed 32 teachers from primary, secondary and special schools to investigate teachers' feelings and experiences regarding their responsibilities in identifying children with mental health problems. They concluded that teachers did indeed feel a duty of care towards pupils' mental health but felt inadequately prepared to recognise and manage symptoms.

In conclusion, teachers are increasingly being relied upon to identify mental health concerns in their pupils. The next section will review what evidence there is into teachers' ability to identify internalising symptoms, such as anxiety and somatic symptoms, in their students.

1.14 Evidence that teachers can recognise anxiety and somatic symptoms in pupils

One way of examining how well teachers can recognise symptoms of anxiety and somatic symptoms in their pupils is to review studies which have compared teachers' ratings of children's symptoms to children's self reports of symptoms or parent's reports of symptoms. Teachers may be asked to complete standardised scales by clinicians, who wish to obtain reports from multiple informants when making diagnoses (Achenbach, McConaughy, & Howell, 1987). Researchers may also ask teachers to complete standardised scales, for example, to assess the efficacy of an intervention (e.g., Lee et al., 2009). In most cases, the scales teachers

complete are 'teacher versions' of scales that are also administered to children and parents, such as the Strengths and Difficulties Questionnaire (SDQ; Goodman, 1997) and the Teacher Report Form, which is a teacher version of the Child Behaviour Checklist (Achenbach, 1991). These scales are usually 'broad-based' scales which cover a range of externalising and internalising behaviours in children in limited detail, rather than scales which cover a wide range of children's anxiety or somatic symptoms (the Spence Children's Anxiety Scale which includes items based on the different anxiety disorders in the Diagnostic and Statistical Manual of Mental Disorders (4th ed.; *DSM-IV*; American Psychiatric Association, 1994) has not been adapted for teachers, for example, nor has the Children's Somatisation Inventory).

In a benchmark meta-analysis of 119 studies, Achenbach, McConaughy and Howell (1987) reported that the average (weighted) correlation between teacher and child reports of child behavioural and emotional problems was relatively weak ($r = .20$; parent and teacher, $r = .27$; parents and children, $r = .25$). Kolko and Kazdin (1993) examined the concordance on the Child Behaviour Checklist of parent, teacher and child reports of internalising symptoms (comprising items relating to anxiety/depression, somatic symptoms and withdrawn behaviour) in a community sample of 98 6-13 year olds and 64 clinically referred children of the same age. They reported a relatively low rate of agreement between teachers and children ($r = .25$), but an even lower rate of agreement between parents and children ($r = .14$). Among 274 10-11 year olds, Mesman and Koot (2000) reported a moderate ($r = .30$) correlation between the anxiety/depression scale on the Teacher Report Form (Achenbach, 1991) and children's self-reported anxiety (as measured by the State Trait Anxiety Inventory for children). Again, this was better than parent child agreement ($r = .13$). Most recently, in a sample of 1039 Canadian children aged 8-13 years (Miller, Martinez, Shumka, & Baker, 2014), teacher's reports of children's anxiety on the Behaviour Assessment System for Children (Reynolds & Kamphaus, 1992) and the SDQ were again modestly correlated ($r = .28$) with children's self-reports of anxiety on the Multidimensional Anxiety Scale for Children (March, Parker, Sullivan, Stallings, & Conners, 1997), but parent reports fared even worse ($r = .14$).

Not all studies have reported similar results. Using the same measure, the Child Behaviour Checklist, Stanger and Lewis (1993) investigated agreement between mothers', fathers', teachers' and children's self-reports of child behaviour and emotional problems among 98 older children (13 year-olds) and reported that the association between children's and mothers' reports for internalising symptoms was much higher ($r = .30$) than that for children's and teachers' reports ($r = .08$). Frick, Silverthorn and Evans (1994) compared the validity of parent, teacher and child reports of child anxiety (assessed with structured diagnostic interviews) by testing the association between these reports and a family history of anxiety, because of strong evidence that children with an anxiety disorder are more likely to have a parent with a history of an anxiety disorder (Bernstein & Garfinkel, 1988). In children aged 9-13 years both parents' and children's reports of anxiety were related to maternal history of anxiety, but teacher reports were not. Epkins (1994) found that relations between 8-11 year olds children's self-reported and teacher-reported anxiety was better ($r = .30$) when teacher items on the CBCL were selected to be more similar to the child items, but when Epkins (1995) examined correspondence between community based teachers' ratings of child anxiety in 83 children who had subsequently entered an inpatient psychiatric facility by sending them the Revised Children's Manifest Scale (RCMAS; Reynolds and Richmond, 1979), she found poor concordance with children's self reports ($r = .07$) and the inpatient teachers ($n = 2$) fared little better ($r = .11$). In contrast, when Cole, Hoffman, Tram, & Maxwell (2000) adapted the Revised Children's Manifest Scale for parents in a community sample of 348 11-12 year olds to compare its factor structure to the child version, they found good parent-child agreement ($r = .47$ to $r = .72$) on the factors they identified in both scales ('social alienation' and 'worry-hypersensitivity') and moderate to large parent-child concordance rates have also been found on other anxiety scales, such as the Spence Children's Anxiety Scale (Nauta et al., 2004).

Overall, it appears that teachers' reports have low to modest correlations with children's self-reports of internalising symptoms, implying that they are poor informants in regards to children's internalising symptoms, however teachers do

not always appear to show less agreement with children than parents do and other explanations should be considered for these small associations. It has long been noted that different informants' reports of children's symptoms can vary considerably (Achenbach et al., 1987). One possible reason for this is situational specificity. Achenbach et al. proposed that in cases of different reports of children's behaviour from multiple informants, none is invalid but rather each offers an individual perspective based on situational variance in the expression of such behaviours. It might therefore be the case that teachers do accurately report on children's internalising symptoms, within a school setting, but that modest correlations arise because children's reports pertain to their internalising symptoms more generally.

Another possibility is that children are not necessarily reliable informants of their own behaviours. It has been suggested, for example, that before the age of ten children may not have the verbal or cognitive maturity to report on their behaviours (Grills & Ollendick, 2003) and that children may not wish to report certain symptoms due to social desirability effects (Pina, Silverman, Saavedra, & Weems, 2001). Some authors argue that parents are more reliable informants than young children, at least when it comes to internalising symptoms (e.g., Edelbrock, Costello, Dulcan, Conover, and Kala (1986) who reported better test-retest reliability in parents' interviews regarding children's internalising symptoms than children's interviews; although even children aged 6-9 reported good test-retest reliability in certain categories, such as simple fears, (ICC = .7)). Others point out that, in contrast to their behaviours, children have privileged access to their feelings and cognitions which by their very nature are 'internalised'; whereas other informants, such as parents are at a disadvantage, as they are dependent on observable signs of anxiety (Brown-Jacobsen et al., 2011). In a sample of children ranging from as young as seven years, Brown-Jacobsen et al. (2011) found that children's reports on a standardised scale of anxiety, the Spence Children's Anxiety Scale, were generally consistent with clinicians reports of children's anxiety (and similarly consistent to parents' reports on the same scale); meanwhile in a longitudinal study, Ialongo, Edelsohn, Werthamer-Larsson, Crockett, and Kellam

(1995) found that even 5-6 year-old children's reports of their anxiety symptoms were significant predictors of both their levels of anxiety symptoms and adaptive functioning four years later, and that the short-term stability of reports was relatively strong. Another study which attempted to identify 'optimal' informants concluded that the best approach, when it comes to parents' and children's reports, is to take an 'either or' approach in which both informants are viewed with the same level of credence (Bird, Gould, & Staghezza, 1992).

The evidence described above supports the assertion that even young children are reliable informants of their own internalising symptoms. Modest correlations between teachers' and children's reports therefore point to teachers' limitations as informants on children's internalising symptoms, and indeed, clinicians have been advised to give less weight to teachers' reports of such symptoms than to those from young children themselves (Smith, 2007). Nevertheless, aside from the practical usefulness of teachers' reports outlined previously (e.g., children might not have the agency to acquire help when teachers do) there are reasons why teachers' actual abilities in this domain may have been underestimated. Where teachers have been asked to report on children's symptoms it has usually been through very few, specific items included as part of an internalising symptom subscale on a broad-based scale such as the Strengths and Difficulties Questionnaire. Individual item correlations are rarely reported, making it difficult to isolate teachers' abilities to identify children's anxiety from their ability to identify depression or shyness, for example. Furthermore, scales such as these typically only include a few items assessing specific anxiety symptoms (e.g., 'nervous or clingy in new situations, easily loses confidence' on the SDQ) and cannot tell us whether teachers are more likely to identify certain subtypes of anxiety symptoms or certain sorts of somatic symptoms than others, or how teachers define and recognise anxiety without prompt.

Studies have utilised methodologies other than the use of standardised scales, to investigate whether teachers can independently recognise children who are experiencing clinical levels of anxiety. Loades and Mastroiannopoulou (2010), for example, gave 113 English primary school teachers questionnaires to complete,

featuring vignettes describing children with clinical, subclinical and no separation anxiety or oppositional defiant symptoms. Teachers were asked whether they believed the child had a problem, to rate how severe they believed the problem to be, and how concerned they would be about the child. Teachers awarded significantly higher problem severity ratings to vignettes describing children with clinical levels of separation anxiety than those with subclinical levels of separation anxiety, and in turn significantly higher severity ratings to vignettes describing subclinical levels of separation anxiety than vignettes describing problem free children. However teachers reported significantly less concern about the child with clinical levels of separation anxiety than the child with clinical levels of oppositional defiant symptoms. Similarly, Headley and Campbell (2011) gave 299 Australian primary school teachers five vignettes describing children with varying levels of anxiety symptoms, selected from the Diagnostic and Statistical Manual of Mental Disorders (4th ed., text rev.; *DSM-IV-TR*; American Psychiatric Association, 2000) and the Spence Children's Anxiety Scale, and asked them to rate how likely it would be that they would refer the children in the descriptions to a guidance counsellor on a scale from 1-5. Teachers' ranked rates of referral were significantly and positively associated with the seriousness of symptoms described in the vignette, but teachers found it harder to distinguish between those with moderate and severe levels of symptoms.

Findings from the small number of studies which have investigated agreement between teacher nomination of anxious pupils and children's self reported anxiety are less encouraging. With the purpose of selecting children for a school-based anxiety intervention, Dadds et al. (1997) gave children (n = 1786; age range 7 – 14 years) the Revised Children's Manifest Anxiety Scale to complete and asked their teachers to identify both the three most anxious children in the class and the three who displayed the most disruptive behaviour. After excluding children identified by their teachers as having conduct problems (n = 160), Dadds et al. (1997) reported that 204 children had elevated scores (above 19) on the RCMAS. Less than a fifth of these children (n = 33, 16.18%) were also nominated by their teacher as being anxious. Dadds and colleagues wished to exclude children with co-morbid

disruptive behaviour problems from their sample, so unfortunately it is unknown whether convergence rates would have been affected by the inclusion of these children.

In a study involving 453 children aged 7-11 years, Layne, Bernstein and March (2006) asked teachers to nominate the three 'most anxious' children in their class. Nominated children had significantly higher levels of overall anxiety on the Multidimensional Anxiety Scale for Children (MASC) than other children. These children also had higher scores on subscales measuring physiological anxiety, social anxiety and separation anxiety, but not harm avoidance (measured by items such as: I try to do everything exactly right, I stay away from things that upset me, I keep my eyes open for danger).

Cunningham and Suldo (2014) also asked teachers (n = 26) to nominate three anxious children in their class. Again, children completed the Multidimensional Anxiety Scale for Children (MASC). Teachers could identify around half of the students who demonstrated elevated levels of anxiety on this scale. Only 11 of the 27 students (40.7%) who had scores of at least one standard deviation above the mean were also nominated by their teachers as having elevated levels of anxiety. Meanwhile 37 of the 211 children, who did not score at least one standard deviation above the mean on the MASC, were identified by their teachers as having elevated levels of anxiety (17.54%).

A potential issue with the previous two studies is that researchers used an 'opt-in' consent procedure for children's participation, resulting in a 61% participation rate for Layne et al. (2006) and only a 49.5% student participation rate for Cunningham and Suldo (2014). This limitation is particularly pertinent given that in the two described studies teachers were asked to nominate the three most anxious children in their class, as they may have had less than half the class to select from. There are other limitations of these studies relating to the choice of methodology. The MASC, used in both studies, while being a well validated scale, is not closely aligned with criteria for children's anxiety disorders in the Diagnostic and Statistical Manual of Mental Disorders. It does not include items on obsessive-compulsive symptoms,

and its physical symptoms dimension includes both somatic and anxiety symptoms, making it difficult to differentiate the two. Finally the nomination methodology, while being relevant for studies which use such a procedure to select children for intervention, is also rather limited, as it does not tell us anything about how teachers perceive anxiety levels among the rest of their class. It does not reveal whether teachers can identify those with average or low levels of symptoms for example, which may be useful in guiding teachers' education of children and their interactions with them on a day to day basis.

These studies also do not tell us how teachers identified anxious children, although they provide some suggestive evidence. Layne et al. (2006) found that teachers identified children as anxious who scored more highly on items measuring physiological anxiety, social anxiety and separation anxiety, but the study did not control for other types of anxiety when assessing the relationship between certain sorts of symptoms and teachers' nominations. One study which has attempted to investigate how teachers identify anxious children is that of Headley and Campbell (2013). The authors sent three hundred and fifteen primary school teachers working in Catholic and Education schools in Brisbane, Australia a questionnaire asking teachers two open-ended questions, "What is anxiety?" and "How would you tell if a child in your classroom was excessively anxious?" The teachers in the study identified avoidance behaviours, perfectionism, social problems, shyness, distress in changes to routine, reassurance seeking, crying and physical complaints as signs of excessive anxiety, as well as a decrease in academic performance, problematic peer relationships and general changes in behaviour. The symptoms and other behaviours reported by teachers in this study are encouraging; as they suggest that teachers are knowledgeable about how anxiety manifests itself in children, but because the questions were hypothetical we do not know how easy it was for teachers to identify real children through these symptoms.

Finally, it is unknown how teachers' recognition of symptoms of anxiety in their pupils compares to their recognition of somatic symptoms. Evidence from the levels of agreement between parents and children may be informative here. Garber et al. (1991) reported a correlation of $r = .20$ between parent's and children's reports of

somatic symptoms on the Children's Somatisation Inventory among a sample of 540 children and adolescents in a community sample; whereas Meesters et al. (2003) reported a much higher correlation of $r = .44$ between parents and children on the same scale. This compares to Nauta et al. (2004) who, in their validation of the parent version of the Spence Children's Anxiety Scale (Spence, 1998), reported agreement ranging from $r = .23$ to $r = .60$ in a community sample of 261 children. Finally, in a study involving over 2500 children aged 7-11 years carried out for the UK's Department of Health, agreement between parents and children on an adapted, 18-item version of the Children's Somatisation Inventory ($r = .31$) was similar to agreement between parents and children's scores on an adapted version of the Spence Children's Anxiety Scale ($r = .30$), which only featured items related to generalised and separation anxiety (Smith et al., 2012). If teachers' identification of children's symptoms reflects that of parents, similar levels of agreement between teachers and children for anxiety and somatic symptoms would be expected.

1.15 The current study

The research which is the topic of this thesis built on recent and previous studies by investigating how sensitive teachers are to the variance in anxiety and somatic symptoms among *all* their pupils. It also investigated whether teachers are more likely to recognise certain patterns or subtypes of symptoms than others in their pupils, how well teachers can distinguish pupils with potentially clinical levels of symptoms from the rest of their class and what strategies teachers use to identify such children.

Chapter 2 Review of the literature: Teachers' empathic accuracy and psychological wellbeing

2.1 Introduction to chapter 2

The previous chapter focused on anxiety and somatic symptoms in children. The following chapter focuses on the psychological health and wellbeing of teachers. In particular it focuses on the prevalence, sources and symptoms of stress, anxiety and depression in teachers; and the association such factors may have with

teachers' sensitivity to their pupils' internalising symptoms. These main areas of focus are situated within a broader consideration of what contextual factors and individual differences might be associated with successful judgements of the subjective experience of others.

2.2 Empathic accuracy

Judging the subjective experiences of others is a fundamentally important part of the human experience. Infants (de Haan & Nelson, 1999) and even new born babies (Kagan & Lewis, 1965) show a preference for faces, which provide vital social cues, over other stimuli. At between five and seven months of age children begin to show an understanding of socially communicated threat information, as evidenced by an enhanced attention to fearful faces (Peltola, Leppanen, Maki, & Hietanen, 2009); from eight months of age infants begin to coordinate attention with other people (Corkum & Moore, 1998), and by five years (Callaghan et al., 2005), most children have developed a theory of mind (Premack & Woodruff, 1978), a particularly crucial milestone in our social cognitive development (Baron-Cohen, Leslie, & Frith, 1985), defined as the ability to imagine or make deductions about others' mental states.

Moving beyond individual components of social perception and cognition, such as facial expression recognition and theory of mind, the term 'empathic inference' describes "a form of complex psychological inference in which observation, memory, knowledge and reasoning are combined to yield insights into the subjective experience of others" (Ickes, 1997, p.2). Following on from this Ickes defines empathic accuracy as "the measure of one's skill in empathic inference" (Ickes, 1997, p.2) . The construct is similar to that of interpersonal sensitivity defined as "the ability to sense, perceive accurately and respond appropriately to one's personal, interpersonal and social environment" (Bernieri, 2001, p.3) and emotional intelligence, defined as "accurate appraisal and expression of emotions in oneself and others and the regulation of emotion in a way that enhances living" (Mayer, DiPaulo and Salovey, 1990, p.772). Empathic accuracy has been investigated by assessing its component parts using the Diagnostic Analysis of Nonverbal accuracy (Nowicki & Duke, 1994) and the Profile of Non Verbal sensitivity (Rosenthal, Hall, DiMatteo, Rogers, & Archer, 1979) which examine

individuals' abilities in reading non-verbal cues such as face recognition, vocal tone and bodily cues. Empathic accuracy has also been investigated using more complex measures such as the Empathic Accuracy Paradigm. Typically in this paradigm, a dyadic interaction is videotaped, and then participants are asked to identify their own thoughts, and then each other's thoughts, during several points of the interaction (Ickes, Stinson, Bissonnette, & Garcia, 1990; Marangoni et al., 1995; Snodgrass, 2001). There has been a great deal of research into individual differences in empathic accuracy (for a review, see Davis and Kraus, 1997) and into what contexts individuals show greater empathic accuracy (Ickes et al., 2000).

Being a good judge of another's subjective experience is not just to do with the ability to make complex psychological inferences. It also depends on the nature of the 'subjective' experience of others and how this is communicated (Snodgrass, Hecht, and Ploutz-Snyder (1998). In the previous chapter (Sections 1.3 and 1.5) I discussed how certain internalising symptoms in children might be more easily identifiable by teachers than others. Signs of social anxiety, for example, may be more likely to be exhibited within a classroom context (e.g., fear of speaking in front of the rest of the class) than obsessive-compulsive symptoms such as intrusive thoughts or repeated hand-washing. Indeed, secrecy "appears to be a hallmark of childhood onset OCD" (Rapoport and Shaw, 2008, p.700). Empathic accuracy is subject to individual differences in the perceiver; how clearly thoughts, feelings and intentions are expressed by the individual being 'perceived' and the social contexts both find themselves in. In the following section, the contexts and individual differences that might facilitate or impede teachers' ability to identify the cognitive, affective and behavioural symptoms of anxiety and somatisation in children will be examined.

2.3 A brief review of factors associated with empathic accuracy

2.3.1 Familiarity and knowledge

Familiarity is defined as close acquaintance with or knowledge of something. Common sense suggests familiarity should be associated with greater empathic accuracy, yet studies investigating the relationship between familiarity and

empathic accuracy have not always provided the expected findings (for a review see Elfenbein, Marsh, & Ambady, 2002). Ansfield, De Paulo and Bell (1995), for example, found that participants were no better at reading their own facial expressions or their friend's facial expressions than strangers' expressions in response to a pleasant, unpleasant or an unusual photographic slide, with one exception. Men were better at recognising their friend's facial expressions in response to positive slides.

More recently, Zhang and Parmley (2011) argued that friends are in fact better at reading each other's facial expressions, but only when these expressions are subtle. In a sample of 43 female close friend dyads and 49 female casual acquaintance dyads, close friends were more accurate at decoding one another's expressions from photographs taken by researchers using 'probe questions' when they were of 'intermediate intensity', whereas when the emotions in the photographs were of 'high intensity' close friends were only marginally better than casual acquaintances. This study used angry, happy and sad expressions. It would be useful to know whether this finding could be replicated for subtle expressions of fear or discomfort for example, and perhaps even for facial expressions associated with anxious cognitions such as worry. This study also lacks ecological validity as in real life expressions change regularly and are accompanied by other cues, both verbal and non-verbal.

Using the empathic accuracy paradigm first developed by Ickes (1990), Stinson and Ickes (1992) reported that, among a sample of 72 male undergraduates, friends were 50 per cent better than strangers in inferring each other's thoughts and feelings, as judged by five independent raters, both male and female. This study has greater ecological validity than facial expression decoding studies, especially as it was based around an unstructured interaction. In the study, participants were led to a room where they were told to wait for the experiment to begin. While they were waiting the participants were videoed and audio-taped. After the participants were debriefed and had consented for these tapes to be used in the study, they watched the videos and made time logs of their own thoughts and feelings. Interaction partners then viewed the videos and attempted to infer thoughts and

feelings at points where participants had noted them. The authors investigated what it was about friendship that led to greater empathic accuracy. They found that it was not related to greater levels of behavioural involvement and information exchange, but to their shares of stored knowledge. A potential drawback of this study is that it only used male participants, and that the authors of the study did not provide any qualitative information about the type of thoughts and feelings that were reported.

The studies described so far measure familiarity through friendship. Although teachers and children will have stored knowledge pertaining to each other, the familiarity gained through a teacher student relationship is likely to be qualitatively different from that gained through friendship. Few studies have examined the role of teacher/student familiarity in empathic accuracy, particularly in regards to judgements of students' psychological distress. Two exceptions are Ines and Sacco (1992) and Auger (2004) who both tested whether teachers' self reported familiarity with students (assessed using a Likert scale) was associated with higher correspondence between teacher ratings of student depression and student self-reported depression. In both cases, there was greater congruence when teachers rated themselves as highly familiar with the pupils in question. Unfortunately it is difficult to say what led teachers to make these judgements. It could be anything from time spent with the child, to how much the child has confided with the teacher about their thoughts and feelings. Ickes (1997) suggested that familiarity, knowledge and observation are separate components in the process of empathic inference; therefore it may be more helpful to separate the impact of time spent together and confiding on teachers' accuracy.

Fortunately, Ines and Sacco (1992) and Auger (2004) did not just examine familiarity through self-reported Likert scales. In his study of 356 students and 52 teachers, Auger (2004) compared teachers' depression ratings of students with whom they spent more than five hours a week, to those with whom they spent five hours or less a week. Correlations between teacher-reported and student self-reported depression were significantly higher for the first group. Ines and Sacco (1992) measured familiarity in a different way, knowledge of the symptoms of childhood

depression. 16 of the 31 teachers involved were randomly assigned to receive instruction in childhood depression. This included a 25 minute video taped presentation about the symptoms of depression, followed by a question and answer session. Teachers were then encouraged to observe students over the next three days. The study found that while instruction in the symptomatology of childhood depression improved knowledge, it did not improve concordance rates between teachers and students on ratings of depression.

To summarise, there is evidence to suggest that familiarity in the form of stores of shared knowledge and time spent together improves our ability to judge the subjective experience of another person. We might therefore predict that teachers will be better at identifying internalising symptoms in children they have taught for longer. It is plausible, but untested, whether large class sizes will impede this process by reducing the time available to spend with each pupil, and whether familiarity as measured through years of teaching experience, makes a difference. Teachers with greater years experience may have greater status in the school, which, as described in the section below, may actually compromise their empathic accuracy.

2.3.2 Social status

Research into the role of gender in empathic accuracy suggests that increased interpersonal sensitivity found in women (e.g. Hall, 1994) might actually be a function of reduced status, not gender. In the Snodgrass interpersonal sensitivity paradigm (1985), two people are given tasks to do, after which they complete rating scales of their own and their partners' thoughts and feelings at different points of the interaction. In a study of 72 participants, Snodgrass (1985) randomly assigned the role of 'teacher' and 'learner' to members of each dyad. The teacher taught the learner letters of the signed alphabet. The study showed that participants in the subordinate role were much more sensitive to the thoughts and feelings of the teacher than the teacher was to them.

Snodgrass further investigated this 'subordinate' phenomenon in a boss/employer situation. In 'employee' and 'boss' dyads, subordinates were found to be better at

judging their bosses' thoughts and feelings about them, than bosses were at judging their subordinates' thoughts and feelings about them, however subordinates were not as good at judging how bosses viewed themselves as bosses were at judging how subordinates viewed themselves (Snodgrass, 1992). Interestingly, and in contrast with findings from Hall (1984), Snodgrass found that when women were assigned leader roles as often as men, gender was not associated with interpersonal sensitivity (although see Mclure, 2000; Hall, Murphy, & Schmid Mast, 2006). Kenny, Snook, Boucher and Hancock (2010) found that after 'stereotype accuracy' was accounted for (i.e., the way bosses predict responses of subordinates in general), subordinates were actually better at both meta-accuracy (the extent to which an individual's perception of another person's view of them correlates with that other person's view of them) and partner accuracy (the extent to which an individual's perception of another person's thoughts and feeling correlates with that person's thoughts and feelings). It has been suggested that the reason subordinates are more sensitive to the thoughts and feelings of those in positions of power is because it is more important that they please their boss and earn rewards from them than the other way around (Galinsky, Magee, Inesi, & Gruenfeld, 2006). Alternatively, Snodgrass (1998) suggests that those in more powerful roles are more expressive about what they think of the subordinate than the other way around.

In support of Galinsky and colleagues' interpretation, a recent study by Pickett, Gardner and Knowles (2004) found that scores on a standardised questionnaire based measure of 'needing to belong' (Leary, Kelly, Cottrell, & Schreindorfer, 2006), which focuses on social desirability, that is, a desire for acceptance and need to avoid rejection, were positively associated with accuracy in identifying vocal tone, facial emotion and inferring thoughts and feelings in an empathic accuracy task.

To summarise, teachers are in a position of authority over pupils, which may actually put them at a disadvantage in reporting on children's internalising symptoms. Given the findings just described, it is possible that teachers with less authority, for example newly qualified teachers, may be better at identifying symptoms of anxiety and somatisation than those with more years of experience.

2.3.3 Responsibility

As reviewed in chapter 1, over the last fifteen years, schools have been encouraged to play a greater role in the wellbeing of their pupils. As part of directives such as SEAL and TaMHS, teachers are expected to be able to identify children suffering from psychological distress. Whether this ascribed responsibility has led to improved recognition of children's internalising symptoms has not been investigated, but there is evidence from clinicians that those who perceive themselves to be responsible for others' mental health, and believe that children's mental health is of fundamental importance, may show increased identification of symptoms.

In a survey of 1600 members of the American Academy of Pediatrics, Heneghan et al. (2007) found that paediatricians who thought that it was their responsibility to identify maternal depression, and believed that maternal depression has an extreme effect on children's mental health, were more likely to report identifying symptoms of depression in mothers. Unfortunately, this study did not investigate how accurate the paediatricians were in identifying maternal depression. It is also unclear what mechanisms link feelings of responsibility with the identification of symptoms.

Verhaak (1988) explored factors associated with the detection of psychological complaints among 30 general practitioners during 50 videotaped interviews reviewed by five trained observers. He found that practitioners who had an open conversational style (characterised by highly correlated factors of interest, empathy, encouragement, purposive probing and clarification; the proportion of the time they looked at the patient and patient centred behaviour) were more sensitive to psychological aspects of complaints. Marks, Goldberg and Hillier (1979) reported that interest and concern shown by 55 general practitioners during interviews with 2098 patients (as observed by a research psychiatrist) was associated with the strength of the correlation between their assessments and patient responses on the General Health Questionnaire.

In conclusion, the prominence of children's mental health in a school's ethos, and teachers' individual feelings of responsibility and interest in children's emotional wellbeing are likely to vary, and may impact on teachers' recognition and identification of symptoms in children.

2.3.4 Other psychosocial characteristics

Although a great deal of attention has been paid to individual differences in empathic accuracy, there are few well established correlates (Ickes et al., 2000). Davis and Kraus (1997) carried out a meta-analysis of 32 individual difference variables using 30 interpersonal accuracy measures. Their strongest findings were a reliable but modest association between intelligence and interpersonal accuracy ($r = .23$) and reliable, but again modest, associations with the following aspects of cognitive style: cognitive complexity, high field independence and low levels of rigidity and dogmatism. They also reported that measures of positive psychological wellbeing were positively associated with better awareness of others' thoughts and feelings, whereas negative measures were not negatively associated with awareness of others' thoughts and feelings.

More recently, Hall, Andrzejewski and Yopchick (2009) carried out a meta-analysis of 215 independent studies, with the aim of determining which psychosocial characteristics are associated with interpersonal perception, defined as "accurate judgment or recall of others' behaviour or appearance" (p.149). They defined psychosocial characteristics as personality traits, social and emotional functioning, life experiences, values, attitudes and self concept. They reported small but significant positive correlations between interpersonal perception and empathy, affiliation, extraversion, conscientiousness, openness, tolerance, and an internal locus of control, however their effect sizes were very small, and studies they assessed mainly used just one measure of interpersonal perception: the profile of nonverbal sensitivity (Rosenthal et al., 1979).

The few findings from Davis and Kraus (1997) and Hall et al. (2009), are small in size, and in Hall et al. (2009) they focus on non-verbal measures of sensitivity. The studies can, however, provide an indication of what sort of teacher might be better

at identifying internalising symptoms in children. The findings gain credence when we look at evidence from psychiatric literature on which clinicians are best at assessing symptoms in their patients. In support of Davis and Kraus' modest findings on intelligence, Goldberg et al. (1982) found that physicians with high academic ability made more accurate assessments of psychiatric symptoms among their patients. Hall et al. (2009) suggested that conscientiousness and tolerance was associated with nonverbal sensitivity. The suggestion that tolerance is associated with empathic accuracy is supported by Robbins et al. (1994) who found that physicians who blamed depressed patients for causing, exaggerating or prolonging their depression made fewer assessments of psychological distress, and were less accurate in those assessments than those who did not see patients as contributing to their condition, while Kolko and Kazdin (1993) found that parent-child disagreement on externalising symptoms was related to low parent acceptance of the child. Hall et al. (2009) also note that extraversion has been associated with nonverbal sensitivity; while Goldberg, Steele, Johnson, and Smith (1982) found that outgoing, self confident physicians made more accurate psychiatric assessments of their patients.

2.3.5 Affective empathy

Whether there is an association between affective empathy and empathic accuracy remains unclear. Several studies have failed to find an association (Davis & Kraus, 1997; Ickes et al., 1990; Levenson & Ruef, 1992); but a more recent study by Zaki, Bolger and Ochsner (2008) found that there was an association between empathy and empathic accuracy, using a continuous affect rating paradigm, when expressiveness of the target was taken into account. In order to draw conclusions here, more studies are needed which take into account both the 'perceptiveness' of the perceiver and the 'expressiveness' of the target. A lack of association between affective empathy and empathic accuracy could also be a function of the self-report measures of affective empathy used. Studies are needed which examine affective empathy in other ways, for example, physiological measures which take into account changes in the central and autonomic nervous system, or paradigms which

compare empathic accuracy for specific thoughts, feelings and emotions the perceiver has experience of, as opposed to ones they have not.

One study which has looked at the effect of similar experience on empathic accuracy was that carried out by Hodges et al. (2010). Women who had never been mothers, those who were pregnant with their first child, and those who had just given birth were measured on emotional and cognitive empathy towards new mothers. Although women who had experienced the same life events as the targets expressed greater empathic concern and reported greater understanding of the new mothers, they were no better at estimating individual thoughts. This finding suggests that, in the current study, experience of anxious or somatic symptoms in teachers may encourage affective empathy towards pupils, but not necessarily empathic accuracy.

2.4 Teachers' psychological wellbeing and empathic accuracy

Teaching is widely considered to be one of the most stressful professions (Kyriacou, 2001) and so the potential impact of teachers' mental health on empathic accuracy is particularly relevant here. The association between psychological wellbeing and empathic accuracy is a particular focus of this thesis, and the reasons why teachers' psychological wellbeing may be associated with empathic accuracy will be explored later in the chapter. First, the prevalence of stress, anxiety and depression in teachers will be reviewed.

2.4.1 Prevalence and definitions of stress

Media reports of psychological problems suffered by teachers have become increasingly prevalent in recent years. For example, in 2011 Channel 4 news reported figures from the Office of National Statistics which showed that in 2009, 63 primary and secondary school teachers took their lives, compared to 35 in 2008, an increase of 80 per cent ("Teacher suicide rate," 2011). At the end of 2012, figures obtained by a Freedom of Information act by the Guardian newspaper revealed a 10% increase in the number of teachers taking stress leave over the previous four years. In 15 local authorities there was a 50% rise in stress absences ("Rise in teachers off work with stress," 2012). More recently, in 2015, the BBC

reported that stress levels among teachers in England were 'soaring' ("Teacher stress levels in England," 2015).

These media reports of high levels of stress in teaching are supported by research. For example, in the Bristol Stress and Health at work study, (Smith, Brice, Collins, Matthews, & McNamara, 2000), an epidemiological survey which involved over 17,000 randomly selected people from the Bristol electoral register, 41.5% of teachers reported high levels of stress at work, making them the most stressed profession of all, followed by nurses and professional and support management. A few years later, 44% of the teachers surveyed in a study carried out in Scotland (Dunlop & Macdonald, 2004) reported that they found their job either very (35.6%) or extremely stressful (8.4%). Studies such as these used a single item measure on a Likert scale to measure *perceived* stress making the findings problematic to interpret, however, and overall research into stress in teachers is compromised by the construct's poor definition.

The word stress is defined in a number of ways in the psychological literature. In some cases 'stress' is used to mean 'stressor', namely an agent, condition, stimulus or event that causes stress to an organism. For example, Flouri, Buchanan, Tan, Griggs, and Attar-Schwartz (2010) measure 'life stress' as the number of adverse life events experienced, and 'area stress' through the index of multiple deprivation. The DSM-5 (APA, 2013) also utilises this interpretation of stress (i.e., a causal factor) in its description of disorders such as post traumatic stress disorder and acute stress disorder. Alternatively, stress has been defined as an individual's physiological, behavioural and emotional response to a 'stressor'. For example, Warr and Wall (1975) define occupational stress as tension, anxiety, fear, discomfort and related psychological disorders arising from a non-optimum work situation. In this definition the focus is on an individual's reaction to a stressor, rather than the stressor itself. This interpretation of the meaning of stress has its roots in the work of Hans Selye, who claimed that stress is the non-specific response of the body to any demand placed upon it (Selye, 1973). Later models of stress include both stressor and response, for example transactional models define stress as the discrepancy between the demands placed upon an individual, and their ability to

cope with these demands. Drawing on the work of Lazarus and the perception of threat (Lazarus & Folkman, 1984), Kyriacou (2001) claimed that three things need to be present for a teacher to perceive a situation as threatening. Firstly they must feel that they have to deal with the demands that are placed on them, secondly they must feel that they will not be able to successfully meet those demands, and thirdly they must feel that not successfully meeting the demands will have negative consequences. Later in this chapter, reactions to stress in the form of anxiety and depression will be reviewed for their potential association with empathic accuracy. In this section, the role of stressors will be explored.

2.4.2 Sources of stress in teaching

A number of studies have investigated sources of stress in teaching. Drawing on the work of Travers and Cooper (1996) and Pithers and Soden (1998) among others, Kyriacou (2001) concluded that the following ten sources of stress were the most predominant, with the first two being unique to the teaching profession: teaching pupils who lack motivation, maintaining discipline, time pressures and workload, coping with change, being evaluated by others, dealings with colleagues, self-esteem and status, administration and management, role conflict and ambiguity and poor working conditions. In a study focused solely on primary school teachers, Kokkinos (2007) developed a 63-item survey scale to measure potential sources of stress in teachers, based on previous research and pre-survey interviews with teachers. After administering the survey to 447 primary school teachers, eleven factors were identified. These were students' behaviour, managing students' misbehaviour, decision making, relationships with colleagues, role ambiguity, poor working conditions, appraisal of teachers by students, work overload, appraisal of teachers, time constraints and specific teaching demands e.g. teaching pupils with special educational needs. Other sources of stress identified in the literature include large class sizes and a lack of professional opportunities (Travers & Cooper, 1993; Travers & Cooper, 1996).

2.4.3 Prevalence of anxiety and depression in teachers

The increasing evidence that teachers perceive themselves to be 'very stressed' (Kyriacou, 2001) suggests that teachers have poorer wellbeing and suffer from

greater levels of anxiety and depressive symptoms, but to establish whether this is the case we need to examine evidence from measures with robust psychometric properties. As a precursor to this, it is useful to examine the demographic characteristics of key stage 2 teachers, to assess whether that puts them at greater risk than other adults of developing these common psychological disorders.

According to the latest Adult Psychiatric Morbidity Survey (APMS) carried out in England (McManus, Meltzer, Brugha, Bebbington, & Jenkins, 2009), 16.2% of adults currently meet diagnostic criteria for at least one common mental disorder (defined by them as mental conditions that cause marked emotional distress and interfere with daily function, but do not usually affect insight or cognition, and comprise different types of depression and anxiety). Meanwhile the 12-month prevalence rates of mood disorders in the UK have been estimated at 8.73% (equating to nearly 4 million people) and anxiety disorders at 18.2% (over 8 million people), (Fineberg et al., 2013). The anxiety figure is corroborated by Baumeister and Harter (2007) who reported a similar prevalence rate (between 12.4 and 18.1%) based on national surveys carried out in Australia, Germany, the Netherlands and the USA. Finally Kessler et al. (2005) reported lifetime prevalence rates of 28.8% for anxiety and 20.8% for mood disorders (16.6% for major depression).

The specific demographic characteristics of teachers may put them at greater risk of suffering from anxiety and depression than those indicated by general population prevalence rates. Nearly three quarters (73.3%) of teachers in England are female (Department for Education, 2013) but in primary and nursery schools the figure is even higher at 87% (Department for Education, 2011). A wealth of evidence strongly indicates that women are more vulnerable to developing anxiety or depression than men. In the APMS (McManus et al., 2009), 19.7% of women met criteria for a common mental disorder whereas only 12.5% of men did.

Furthermore women had higher levels of all categories of disorder apart from panic disorder and obsessive-compulsive disorder. McLean, Asnaani, Litz and Hofmann (2011) compared the 12-month and lifetime prevalence rates for anxiety in men and women in the United States using the NIMH Collaborative Psychiatric Epidemiology surveys and reported that the lifetime prevalence for any anxiety

disorder in women was 33.3% compared to 22% in men, and the 12 month prevalence of an anxiety disorder in women was 22.7% whereas for men it was just 13%.

Teachers' age range also puts them at risk of developing a mental disorder. Around half of teachers are aged between 30 and 50 years-old (Department for Education 2010, 2012) with around 20% to 25% below 30 years, and a similar number above 50 years. Prevalence estimates reported by Kessler (2005) suggest incidences of mental disorders steadily increase through adulthood before declining in older age groups, with depression peaking between the ages of 30-44 years, and generalised anxiety disorder peaking slightly later at 45-59 years. According to the APMS (McManus et al., 2009), the prevalence of a depressive episode, generalised anxiety disorder and mixed anxiety and depression is greatest among women aged 45-59, but for a depressive episode and generalised anxiety, women aged 35-44 were the next most vulnerable.

Although the age and gender of most teachers appears to put them at increased risk of developing common psychiatric disorders, their socioeconomic status may act as a protective factor. Using data from the National Comorbidity Survey in the United States, Kessler et al. (1994) reported that rates of affective and anxiety disorders decreased as income and education level increased, particularly in regards to anxiety disorders. This finding has been consistently repeated in the psychiatric literature (Eaton & Muntaner, 1999).

With the exception of socioeconomic status, teachers' demographic characteristics appear to put them at increased risk, in comparison to the general population, of developing a mental health problem, with perhaps a slightly higher risk of developing depression than anxiety. It is also plausible that the nature of the actual work women are more likely to do, such as teaching, contributes to this inflated risk, rather than their gender alone.

As described earlier, a growing body of research indicates that teaching is a stressful profession (Kyriacou, 2001) however unclear definitions of stress and the use of self-report single item Likert scale measures mean the contribution made to

our understanding of levels of psychiatric symptoms among the profession is limited. It is harder to identify studies which have investigated mental health in teachers using well validated measures. There are exceptions: Bauer et al. (2007) administered the General Health Questionnaire, a well validated measure of psychological distress, to 949 German teachers in grammar and secondary modern schools. Over a quarter (29.8%) of teachers reported significant mental health problems, which they compared to the 13% from a general population sample. Finlay Jones (1986) also used the General Health Questionnaire, in a survey of over 2000 school teachers in Western Australia, and reported that 17% had severe psychological distress symptoms, which they compared to 9% in a random sample of the urban Australian population.

Nagai, Tsuchiya, Touloupoulo and Takei (2007) went a step further and compared teachers' scores on the General Health Questionnaire to a control group of civil servants. They found high levels of minor psychiatric disorders in their sample of 403 Japanese teachers in elementary and junior high schools (children aged 6 to 15 years), but did not find any significant differences between teachers and their group of 611 participating civil servants.

A study by Kovess-Masfety, Sevilla-Dedieu, Rios-Seidel, Nerriere, & Chee (2006) compared the prevalence of diagnosed psychiatric disorders, namely anxiety and depression, in French teachers in comparison to a control group. The authors conducted a postal survey among individuals covered by the French healthcare provider MGEN (Mutuelle Générale de l'Education Nationale) which covers individuals working within the national education system but also among certain research institutes and ministries. Their sample featured 3,679 teachers (from both primary and secondary schools) and 1,817 non-teachers who they sent questions from a diagnostic instrument used to assess anxiety and depression in accordance with DSM-IV (APA, 1994) criteria (CIDIS: Composite International Diagnostic Interview Simplified) and the Hopkins Symptom Checklist, a well validated measure of anxiety and depression. On first analysis, the authors did not find a higher lifetime prevalence of any psychiatric disorder among teachers than other respondents; however after controlling for confounding variables, they did reveal a

higher risk of anxiety disorders, but in male teachers only. Mean scores of psychological distress did not differ between the two groups.

2.4.4 Anxiety, depression and empathic accuracy

Theoretically, there are a number of reasons why anxiety and depression may be positively, and negatively associated with empathic accuracy. As described in chapter 1, anxiety can be described as “a future oriented mood state in which one is ready or prepared to cope with upcoming negative events” (Barlow, 2002, p.64). High levels of autonomic arousal characterised by symptoms of anxiety such as an increased heart rate, breathlessness, and trembling reflect the body’s attempt to identify, and prepare for threat. Hyper-vigilance to the environment may assist empathic accuracy because of the increased attention paid to that individual’s environment, which in a teacher’s case, includes their pupils. A considerable amount of research provides evidence that individuals with high levels of anxiety and worry have an attentional bias towards threat cues in their environment (Hirsch et al., 2011; Macleod, Mathews, & Tata, 1986; Mogg, Mathews, & Eysenck, 1992). There is also evidence that these threat cues are processed more accurately. Surcinelli (2006) found that non-clinical participants who scored highly on a measure of trait anxiety were better at recognizing fearful expressions, while Gilboa-Schechtman et al. (2008) found that individuals with social phobia were better at labelling faintly angry and sad expressions as negative. Pupils’ negative facial expressions are just one sort of ‘threat cue’; anxious teachers may also show increased attention to and processing of other signs and symptoms of anxiety and somatisation, though this may depend on the extent to which these symptoms are deemed threatening to the teachers. Anxiety in teachers may facilitate the recognition of signs and symptoms of anxiety and somatisation in their pupils if they perceive these symptoms as being a threat (e.g., to their perception of themselves as a competent teacher, or simply a sign of threat to the pupils they feel responsible for).

Mild levels of depression have also been associated with better empathic accuracy. Weary and Edwards (1994b) suggest that expectations of helplessness, characteristic of depression, lead to a lowering of feelings of personal control and

“generalized self constructs about one’s uncertain or inadequate ability to fully understand or detect causal relations in the social world” (p.309). According to the authors these self constructs engender attempts to understand cause and effect relationships in the social world and so reduce uncertainty about why things happen. For example, Weary et al. (2006) found that causal uncertainty (as measured by a 14 item scale) was related to the consideration of social contexts, in addition to individual characteristics, when making judgments of other people; Vaughn and Weary (2003) found that individuals high in causal uncertainty were better at correcting biased judgments, and were more persuaded by strong, rather than weak, causal arguments; while Weary and Jacobsen (1997) found that, when presented with a task in which they had to interview others, those high on causal uncertainty chose questions that were likely to be more informative and in keeping with the goal of the interview.

In support of this ‘causal uncertainty’ theory, individuals with mild depression have been found to be more accurate in tasks where participants have to judge strangers’ emotional states by looking at pictures of their eyes (Harkness et al., 2005). They have also been reported to be more interested in understanding others’ personality and behaviour (Gleicher & Weary, 1991); more thorough when making judgements about the causes of somebody’s behaviour (for example, more likely to correct the ‘fundamental attribution error’ by taking into account situational constraint information (Yost & Weary, 1996)) and more interested in seeking out information about others (Hildebrandsaints & Weary, 1989). Given the relationship between anxiety and diminished control (Barlow, 1988, 1991; Beck, Emery, & Greenberg, 1985) and an external locus of control (Finch & Nelson, 1974; Nunn, 1988), perhaps it is not surprising that causal uncertainty has also been associated with trait anxiety (Weary et al. 1994b), as well as maladaptive coping (Chang, 2000); and even cardiovascular disorders (Kovacova, 2002). The construct of causal uncertainty has similarities to ‘intolerance of uncertainty’ identified as a cognitive vulnerability factor for generalised anxiety disorder (Carleton, 2012; Freeston, Rheume, Letarte, Dugas, & Ladouceur, 1994) and defined as “a tendency to react negatively to uncertainty on a behavioural, cognitive and emotional level”

(Buhr & Dugas, 2009, p.216). The construct developed, in part, from research which suggested that high worriers required more evidential proof before making decisions (Metzger, Miller, Cohen, Sofka, & Borkovec, 1990; Tallis, Eysenck, & Mathews, 1991). If this is the case, we might expect those with higher levels of intolerance of uncertainty to be more thorough and therefore make more considered judgements; conversely, the allocation of attention to worries, rather than a judgement task at hand, may lead to poorer decision making.

In addition to anxiety and depression; there are also reasons why symptoms related to other psychological syndromes may be associated with empathic accuracy, such as obsessive-compulsive disorder (OCD). Salkovskis (1996) proposed that OCD is characterised by beliefs that one is personally responsible for causing or preventing harm in regards to oneself or others. It is theorised that these perceptions give rise to behaviours such as checking, ordering and mental neutralising in an attempt to counteract unwanted thoughts or prevent outcomes which the sufferer finds subjectively unacceptable and has attached undue significance to. Higher levels of obsessive-compulsive symptoms in teachers may therefore be associated with greater feelings of responsibility for pupils' emotional wellbeing, which could lead to greater efforts in observing and understanding the emotions, thoughts and behaviours of their pupils. OCD has also been associated with intolerance of uncertainty (Calleo, Hart, Bjoergvinsson, & Stanley, 2010), with some evidence suggesting it is more closely associated with OCD than other anxiety disorders (Steketee, Frost, & Cohen, 1998).

Finally, if affective empathy, familiarity and knowledge of thoughts and feelings experienced by a target is associated with empathic accuracy, as has been discussed earlier in this chapter; teachers' own experiences of symptoms may help them correctly recognise symptoms in their pupils.

There are also reasons why anxiety, depression and obsessive-compulsive symptoms may be associated with decreased empathic accuracy, particularly when experienced in high levels. The cognitive biases found in anxiety and depression may have a negative, rather than positive impact on empathic accuracy. Anxiety

becomes a disorder when it is disproportionate to the threat in the environment. If anxious individuals notice more 'real' negative cues in the environment, yet attach too much significance to them, then this is likely to make them less empathically accurate. Robbins et al. (1994) found that clinicians who did better on nonverbal tests of sensitivity made more diagnoses of psychological distress, but were not necessarily more accurate. He argued that these clinicians may assign too much importance to transient signs of dysphoria or distress. In support of this argument, Frick, Silverthorn, and Evans (1994) conducted analyses of parent-child disagreement on anxiety symptoms as assessed by structured interviews. They found that maternal over-reporting of anxious symptoms was systematically related to the level of maternal anxiety. This over-reporting was found to be specific to maternal reports of anxiety, and not problems in general.

Cognitive biases found in depression may also distort interpretations of others' emotional states. Similar to Frick's findings with anxiety, a positive association has been found between maternal depression and discrepancies between mothers' ratings and the ratings of other informants on children's symptomatology (Briggs Gowan, Carter, & Schwab-Stone, 1996; Youngstrom, Izard, & Ackerman, 1999). These reports may reflect real increases in child symptoms, perhaps because the child displays certain symptoms in the presence of their mother that they did not display elsewhere or perhaps because depressed mothers have an increased awareness of the nature of these symptoms and so are better at identifying them. However, according to the 'depression distortion hypothesis' (Richters & Pellegrini, 1989) mothers project symptoms of their own disorder onto their children or are more sensitive to or overwhelmed by their child's problematic behaviour. In a community sample of 188 children aged between 9 and 12, mothers who reported high levels of both depressive and anxiety symptomatology tended to report more symptoms in their daughters that were not confirmed by either their daughters or teachers. Anxiety was the only unique predictor of reporting disagreements, and so the authors suggested distortions may be associated with both anxiety and depression, or perhaps more general dysphoria, rather than depression as such (Briggs Gowan et al., 1996). More recent evidence questions the direction of the

distortion, however. Bitsika et al. (2015) found that minimally anxious mothers underestimated their autistic son's levels of anxiety, in comparison with a clinician; whereas reports from mothers with higher levels of anxiety showed more agreement with a clinician. Evidence from community samples showing that parents report lower levels of anxiety than their children do on questionnaire measures of anxiety (Nauta et al., 2004) supports the idea that low levels of anxiety may lead to the underestimation of symptoms in others.

According to the DSM-5 (APA, 2013) the core symptoms of depression are persistent sadness and low mood, and loss of interest and pleasure in most activities. Other symptoms can include feelings of guilt or worthlessness, loss of energy, fatigue, weight loss or gain, insomnia, restlessness and problems concentrating. It may therefore be reasonably hypothesised that depressive symptoms will lead to a loss of interest in pupils' wellbeing, and a subsequent reduction in empathic accuracy. Seeing as empathic inference is a complex cognitive task involving memory and reasoning as well as knowledge and observation, high levels of depression may also deplete the cognitive resources teachers have at their disposal to assist them in this task. While mild levels of depression have been associated with increased empathic accuracy, Lee et al. (2005) reported that individuals experiencing major depression performed more poorly on a facial expression recognition task. High levels of anxiety and obsessive-compulsive symptoms may also create a cognitive load which depletes available resources available for accurate judgements of others' subjective experiences. Hayes, Hirsch and Matthews (2008) found that high worriers showed more evidence of restricted working memory capacity when worrying than when thinking about a positive topic, for example.

Gilbert, Pelham and Krull (1988) explored the role of cognitive demand in judgments of others' anxiety. Their research was based on the assumption that attribution judgments depend on an initial (automatic) categorization and characterization stage, in which causation is attributed to an individual themselves rather than the situation they are in, followed by a more demanding and complex correction stage during which situational constraint information is taken into

account. The researchers asked subjects to observe a target behaving anxiously in a situation which was anxiety inducing. Some subjects were also given an additional cognitive task to perform at the time. Subjects who were cognitively busy did not use the situational constraint information (e.g., the fact that the situation was anxiety inducing) when making judgments about the target's trait anxiety. This finding supports the argument that when individuals are cognitively busy, they are worse at making considered judgments about why others are behaving in a particular way.

These studies indicate that teachers with greater demands on their cognitive resources will be at a disadvantage when it comes to empathic accuracy. A limitation of these studies is that they use artificial measures of cognitive demand; however there is also evidence that real-life stressors can impact judgements of others' subjective experiences. Kolko and Kazdin (1993) for example, found that parent-child disagreement on the parent-reported Child Behaviour Checklist and the corresponding Youth Self-Report Scale (Achenbach, 1991) was related to heightened family stress as measured by the Children's Life Events Inventory (Monaghan, Robinson, & Dodge, 1979), which reflects both child specific (e.g. failing at school) and family oriented (e.g. death in the family) events among its 37 items. Grills and Ollendick (2003) examined moderators of concordance rates between child, parent and consensus agreement on a clinical interview for anxiety among 165 children and adolescents referred to a psychological clinic in America. Parents who reported low levels of conflict, which could be interpreted as a 'stressor', had better agreement with their children. The authors suggest that this is because families who are low in conflict have increased communication and so parents have a better understanding of the child's feelings and behaviours. No research was identified investigating the potential impact of stressors on teacher – child concordance rates. These studies indicate that stressors, as well as a psychological response to threat, can impact on individuals' understanding of others' subjective experiences.

The described theories and evidence suggest there may not be a simple association between symptoms of psychological disorders and empathic accuracy. It may be

the case that where there are lower levels of symptoms, causal uncertainty, intolerance of uncertainty and in the case of anxiety, hyper-vigilance, facilitate better understanding of others psychological states. Greater tolerance and heightened feelings of responsibility may mediate the relationship between psychological symptoms and empathic accuracy, or perhaps having experienced certain symptoms will help an individual recognise the signs in others. High levels of symptoms may have the opposite effect, with cognitive resources for this complex task depleted and perhaps among depressed individuals, a decreased lack of interest in those they would normally show attention to and concern for.

The only identified study to explore whether teachers' psychological wellbeing is associated with accuracy in identifying students with internalising symptoms was one carried by Auger et al. (2004). No relationship was found between US middle school teacher reports of either whether they themselves, or a friend/relative had experienced depression, and teachers' accuracy in identifying depressed students. A potential problem with this study was that teachers were not asked to complete a standardised scale of their own depressive symptoms, but to report on whether they had or had not experienced depression. Although a description of depressive symptoms was included in teachers' questionnaires, teachers may have had symptoms but not felt they were significant or severe enough to be categorised as depression. Furthermore, Auger and colleagues do not provide any information on whether they asked *when* teachers had suffered from depression. It is therefore not known whether teachers were depressed at the time when they completed the questionnaires.

In conclusion there is a lack of studies which explore the role of teacher anxiety, rather than just depression, in the identification of symptoms of anxiety and functional somatic symptoms in their pupils.

2.5 The current study: Aims and design

The aim of the current study was to investigate teachers' empathic accuracy in regards to anxiety and somatic symptoms in their pupils. It also investigated how teachers identify pupils as being anxious or somatising; whether certain subtypes or

patterns of symptoms in children are more likely to be recognised; and what factors in teachers are associated with better concordance between their reports of pupils' symptoms and pupils' self-reports.

The research was designed as a two stage study featuring mainly quantitative but also qualitative methodologies. Guided by the literature review in chapter 1, stage 1 involved collecting quantitative data on children's anxiety and somatic symptoms using two standardised self-report scales (the Spence Children's Anxiety Scale and the Children's Somatisation Inventory) and two simple 1-5 teacher rating scales (one for anxiety and one for somatic symptoms). Teachers were also asked to identify children with debilitating levels of anxiety and (separately) somatic symptoms and to provide brief qualitative descriptions to explain their choices. These two teacher measures were used to investigate how teachers' define and recognise anxiety and (separately) somatic symptoms and to make an assessment of teachers' sensitivity to the variation in symptoms experienced by *all* of their pupils. A sub-sample of parents were also asked to assess pupils' anxiety and somatic symptoms for comparison.

Following on from chapter 2, factors in teachers were assessed for any association with sensitivity towards the levels of anxiety and somatic symptoms experienced by their pupils (defined as the concordance between their ratings of pupils' symptoms and children's self-reported scores on standardised measures); with a particular focus on teachers' own mental health. In this chapter, teachers' affective empathy, cognitive demand, cognitive bias and intolerance of uncertainty were among the constructs discussed because these are potential mechanisms through which teachers' levels of depression, anxiety and obsessive-compulsive symptoms might plausibly affect their sensitivity to pupils' symptoms. Unfortunately it was beyond the scope of this thesis to include measurements of all these constructs in the research design. Other possible mediating factors such as teachers' levels of interest and feelings of responsibility towards pupils' symptoms, hypothesised to be associated with teachers' levels of depression and obsessive-compulsive symptoms respectively, were included, alongside questions regarding teachers' attitudes

towards the causes and presentations of pupils' symptoms. Lastly, demographic data including teaching status and years teaching were also collected.

In stage 2, semi-structured qualitative interviews with teachers were carried out with the aim of exploring how a smaller number of individuals in the profession define and recognise what they perceive to be anxiety and somatic symptoms in their students.

The quantitative data forms the focal point of this thesis, whereas the additional qualitative elements were designed to inject additional richness and depth to the thesis as a whole. Consistent with a post-positivist paradigm within a realist framework, the view is taken that there is a knowable truth regarding children's anxiety and somatic symptoms, and that despite limitations in the methodologies designed to measure these symptoms, children's self-reported data on well-validated quantitative assessments are a reliable way of measuring this reality. The ability teachers have to recognise pupils' symptoms is also seen as quantitatively measurable, although once again there are inevitable limitations to methodological attempts to assess it. In the qualitative elements of the study, teachers' accounts are viewed as being reflective of the reality of what they perceive and understand. In keeping with this, their perspectives on students' symptoms are viewed as being driven by personal and contextual characteristics, which might facilitate or hinder their measurable sensitivity to pupils' symptoms, as assessed quantitatively in the first stage. In addition to exploring the strategies that teachers use to identify children they perceive to be anxious or somatising, the qualitative data was therefore also seen as an opportunity to identify potential explanations for the findings from the quantitative data, regarding the relationship between pupils' self-reported symptoms and teachers' quantitative accounts of these symptoms.

Chapter 3 Hypotheses, Methodology and Measures

A number of hypotheses and subsidiary research questions were proposed. These are divided into three overarching hypotheses. The first relates to the association between teachers' ratings and children's self reports of anxiety and somatic symptoms; the second relates to the types or patterns of symptoms in children associated with better agreement with teachers' ratings; and the third relates to the factors in teachers which it was theorised would be associated with better and worse agreement with pupils' self-reported symptoms. The final research question: *how* teachers define and recognise anxiety and somatic symptoms in their pupils, was addressed through thematic analysis of qualitative data.

3.1 Hypotheses

3.1.1 Hypothesis 1

It is hypothesised that there will be a positive association between teachers' ratings of children's internalising symptoms and children's self-reports of symptoms.

Specifically, it is hypothesised that:

1. There will be a positive association between children's standardised self-reports of anxiety and teachers' ratings of children's anxiety levels.
2. There will be a positive association between children's standardised self-reports of somatic symptoms and teachers' ratings of pupils' levels of somatisation, when the effect of children's self-reported anxiety levels on teachers' somatic ratings have been controlled for.
3. There will be similar levels of agreement between children's and teachers' reports of children's anxiety and children's and teachers' reports of children's somatic symptoms
4. The hypothesised associations outlined above will be replicated when children's self-reports of symptoms are replaced with parents' reports of symptoms on the same standardised scales.

3.1.2 Hypothesis 2

It is hypothesised that certain types or patterns of anxiety and somatic symptoms reported by children and their parents will be more strongly associated with teachers' ratings of pupils' symptoms.

Specifically:

1. In terms of anxiety subtypes, teachers' reports of children's anxiety will show most agreement with children's self-reported social anxiety and least agreement with children's levels of obsessive-compulsive symptoms.
2. In terms of somatic symptoms, teachers' reports of somatic symptoms will show most agreement with children's self-reported headaches and symptoms relating to abdominal pain, and least agreement with children's self-reports of feelings of weakness or numbness.

3.1.3 Hypothesis 3

It is hypothesised that certain factors in teachers will be associated with better agreement between teachers' ratings of pupils' symptoms and pupils' self reports of symptoms of anxiety and somatisation. Specifically:

1. There will be a non-linear association between teachers' levels of anxiety, depression and OCD symptoms and their levels of agreement with children's self-reported anxiety and somatic symptoms, with a positive association at low and moderate levels and a negative association with severe levels of symptoms.
2. Teachers' positive beliefs about their responsibility towards pupils' emotional wellbeing will be associated with better agreement with children's self-reported anxiety and somatic symptoms.
3. Higher levels of teachers' self-reported interest in pupils' emotional wellbeing will be associated with better agreement with children's self-reported anxiety and somatic symptoms.

And finally,

4. The putative relationship between teachers' levels of OCD symptoms and sensitivity to children's anxiety and somatic symptoms will be mediated, in part, by their feelings of responsibility towards children's emotional wellbeing.
5. The putative relationship between teachers' level of depression and sensitivity to children's anxiety and somatic symptoms will be mediated, in part, by their interest in children's emotional wellbeing.

3.2 Sampling and recruitment

3.2.1 Sample size

It was hypothesised that there would be a small, positive association between children's self-reports of their symptoms on standardised scales and teachers' ratings of children's anxiety. G*Power 3.1 (Faul, Erdfelder, Lang, & Buchner, 2007) software was used to calculate the appropriate sample sizes for the quantitative aspects of the study. In order to achieve enough power to detect a small correlation ($r = .01$), with an alpha level of 0.05, calculations indicated that a sample of 1077 children was necessary, equating to around five schools with an average of eight key stage two classes each (equivalent to two form entry). As teacher characteristics were also of interest to this study, a decision was taken to include an additional school with the aim of increasing the sample of participating teachers to 48. Power calculations indicated that this number was enough to detect a small effect size ($d = 0.2$) with an alpha level of 0.05 in an independent samples t-test, and would provide an 81% chance of detecting a 10% variance in the outcome variable in a linear regression analysis with two predictors.

3.2.2 Selection of areas and schools

In order for the findings to be generalizable to a wider population, schools were selected where the percentage of children eligible for free school meals was close to the average for the South East of England (i.e., between 15 and 30%). In order to maximise the number of teachers, and pupils, per school participating, schools with

at least two-form entry were targeted first. Schools meeting these criteria within a reasonable distance from the IOE/researcher's home (within London and a maximum of 1.5 hours away by public transport) were randomly selected for approach. If a school declined to take part, another school meeting these criteria was randomly selected, and so on.

3.2.3 Recruitment of schools

Schools were initially telephoned in order to obtain the name, and if possible the email address, of the head teacher or other members of the senior leadership team. The head teacher, or appropriate member of staff was then sent a letter in the post, which was followed up with an email the week after, and subsequent telephone calls in a bid to make contact. The initial letter and follow-up email described the purpose of the study and also included a teacher information leaflet (see Appendix 1). The purpose of the original contact was to secure the school's agreement to participate in principle, and to arrange a time to visit to meet key stage two teachers in order to tell them about the study and gain their individual consent to take part.

3.2.4 Recruitment of teachers

If consent in principle was received from the head teacher, I visited the school to recruit individual teachers, normally during a staff meeting. During this meeting the nature and purpose of the study was explained, alongside what participation would mean for teachers and pupils. Teachers were informed that the study would investigate how recognisable symptoms of stress in pupils were, as well as levels of stress in teachers. They were informed that participation was voluntary, that they would be free to change their mind about taking part at any time, and that all information collected from both them and their pupils would remain strictly confidential. Details of the study were also provided on an information sheet which was handed out to teachers. After having their questions answered, teachers who were happy to participate were given letters to pass on to parents, via their pupils. These letters (see Appendix 2) explained the study to parents, and provided contact details so that parents could get in touch to opt their child out of completing the

questionnaire if they wished. Parents were also given the opportunity to opt out via the school.

3.2.5 Sampling for qualitative interviews

A subsample of ten teachers was interviewed in the second stage of the research. The aim was to interview a group of teachers representing a wide range of sensitivity towards pupils' internalising symptoms. In line with this aim, teachers' individual anxiety sensitivity scores (the standardised correlation coefficient between teachers' ratings of their pupils anxiety and pupils' self-reported anxiety on a standardised scale) were combined with somatic sensitivity scores (the standardised correlation coefficient between teachers' ratings of their pupils' somatic symptoms and their pupils' self-reported somatic symptoms on a standardised scale) before being divided into five equal sized groups. Two teachers in each of the five groups were randomly selected for approach. Teachers had been asked to indicate on their questionnaires if they were happy to be contacted about the interview stage of the research. If the selected teachers had not given their consent for contact, another teacher from the group was randomly selected and so on. Interviewing stopped once ten teachers had been interviewed.

3.2.6 Contacting teachers

Teachers were contacted using the email addresses they had provided on questionnaires. In the email (Appendix 7), teachers were reminded about their participation in the first stage of the research, and thanked for providing their contact details for the interview stage. Teachers were then invited to take part in a short (30-45 minute) interview at a time and place of their choosing. They were told the aim of the interview was to find out more about how teachers view emotional and stress-related problems in children, and stress in teaching. In cases where teachers did not reply directly to the email, they were telephoned a few days later, or emailed again.

3.3 The participating sample

3.3.1 Summary of the intended and achieved samples

The intention was to recruit 48 teachers/classes. 35 schools within the selection criteria described above were approached in order to achieve a final sample of seven schools (a response rate of 20%). In the seven participating schools, all 52 teachers were invited to take part and only one declined, resulting in a final sample of 51 teachers/classes (a response rate of 98%). One participating teacher completed the child rating form, but declined to complete the accompanying questionnaire regarding their own wellbeing resulting in a sample of 50 on this measure (a response rate of 96%). In the 51 participating classes, 1346 children took part. Parents of five children opted their child out of filling in the questionnaire, and two children opted themselves out of participating (an opt-out rate of 0.5%). Children in the final three schools to participate were given questionnaires to take home to give to their parents (n = 538). These questionnaires contained parent report versions of the SCAS and the CSI. There was a poorer response rate here as only a quarter (n = 144, 25.35%) were returned.

A total of 35 of the 50 teachers who completed wellbeing questionnaires (70%) indicated that they would be interested in taking part in the second stage of the research and provided contact details. A total of 27 of these teachers were contacted in order to achieve a final sample of ten qualitative interviews, in accordance with the stratified sampling approach described in section 3.2.5 (a response rate of 37%). Two teachers were interviewed in three of the five groups, as intended, however in group three (the middle quintile) only one teacher was interviewed and in group four (the group with the second highest sensitivity scores) three teachers were interviewed. Of those contacted only one teacher actively declined to take part, citing pregnancy as a reason. The others did not respond to contact attempts. In one of the latter cases the teacher was on maternity leave and in another the email address provided was no longer working.

3.3.2 Participating schools

Children in seven non fee-paying primary schools across six different London boroughs participated in this study. Six of the seven were community primaries and

one was a voluntary aided Church of England school. Demographic characteristics of the schools can be seen in Table 2. The percentage of children known to be eligible for free school meals ranged from 15.3% to 29.5%, and the percentage of children whose first language was known to be English ranged from 46.7% to 86.6%. The size of the schools ranged from 200 pupils (one form entry) to 695 pupils (three form entry). The most recent OFSTED reports ranged from outstanding (one school) to good (six schools). None were judged to be satisfactory or inadequate.

Table 2. Demographic characteristics of participating schools

	% known to be eligible for free school meals ^a	% pupils whose first language is known or believed to be English ^a	No. key stage 2 children ^b
School 1	29.5	76.0	222
School 2	18.6	72.2	142
School 3	27.9	66.7	112
School 4	17.6	86.6	324
School 5	15.3	75.4	219
School 6	20.2	53.7	112
School 7	19.5	46.7	207

Note. ^aAccording to local government data from 2010, ^bThis figure refers to the number of children in key stage 2 who completed questionnaires. All key stage 2 classes across the seven schools participated, except for one year 3 class in school 4.

3.3.3 Participating children

1346 children from the seven schools completed questionnaires. A total of 655 boys and 679 girls took part³. 361 participants came from year 3 (age 7-8 years); 336 from year 4 (age 8-9 years); 323 from year 5 (age 9-10 years) and 326 from year 6 (age 10-11 years).

3.3.4 Participating teachers

Of the 51 participating teachers who completed rating forms, 10 were male (19.6%) and 41 were female (80.4%). Teachers' ages ranged from 22 to 58 years old. The mean age was 36.41 years old (SD = 9.36). The number of years teaching also varied considerably (from no full years to 30 years). In the interviewed sample, seven of

³ Gender information was collected from participating children themselves by a question at the top of the questionnaire. Gender information was missing for 12 children. Children's names were only used for the purpose of assigning ID numbers and were not retained by the researcher. Therefore names could not be used to judge likely gender at a later date.

the ten teachers were female and the ages of participants ranged from 32 to 54 years. Further details regarding the characteristics of these ten teachers can be seen in Table 35, alongside the analysis of interview data.

3.3.5 Participating parents

Of the 144 participating parents, 84 were parents of girls and 60 were parents of boys.

3.4 Procedure

3.4.1 Classroom administration

Teacher rating forms and questionnaires, and child questionnaires were completed simultaneously, during classroom visits. For confidentiality purposes, unique identifying numbers, rather than participant's names, were used on questionnaires. To aid the distribution of children's questionnaires, each questionnaire featured a detachable cover sheet with the child's name on it. This cover sheet was removed following questionnaire completion to anonymise the data, leaving only a stamped ID number for identification.

On arrival in the classroom, I explained to the teacher how to complete the teacher rating form and questionnaire. Once the teacher had had any questions answered, and had begun completing the rating form, I addressed the class. Children were told that the study was aimed at finding out more about children's thoughts and feelings, and about how aware adults were of children's thoughts and feelings. The meaning of confidentiality was explained and children were reassured that the questionnaires were not a test. Examples of questions were given so that all children understood how to answer them. Children were given the opportunity to ask questions, and verbal assent was gained.

Questions were read out to children in years three and four, whereas children in years five and six were left to read the questions themselves, but encouraged to put their hand up if they had any questions or needed help. Where possible, the support of teaching assistants was utilised with children requiring additional support. Questionnaire completion took approximately 45 minutes for each class.

Children whose parents had opted them out, or those who opted themselves out of participating were given an alternative task to do (e.g. reading or colouring) in agreement with the class teacher.

After children had completed questionnaires, the cover sheets were removed and questionnaires were collected, alongside the teacher's completed rating form and questionnaire. Teachers' questionnaires also featured a removable page, on which participants were asked to tick a box to indicate whether they were happy to be contacted for the next stage of the research, and if so, to provide contact details. This sheet was detached from teacher questionnaires following collection. Although pupil's names were initially placed on teacher rating forms for ease of use, these were also removed once the data had been collected, leaving children's ID numbers only next to the ratings given to them by their teacher. After all the questionnaires had been collected, children and teachers were offered another opportunity to ask questions and thanked for their participation.

3.4.2 Parent questionnaire administration

Parent questionnaires were only completed by parents in the final three schools visited. Collecting parent data was not part of the original study design for a number of reasons. Children, rather than parents, were seen as the most reliable informants of children's internalising symptoms; it was predicted that not all parents would return questionnaires, giving rise to a potentially biased sample of respondents, and finally because all study costs, including printing and postage, had to be paid for by myself rather than a university department or grant. Despite the potential limitations, it was thought that parent data would provide an additional insight into teachers' sensitivity to children's symptoms, and so parent questionnaires were included into the study design in the final three schools. Questionnaires stamped with ID numbers but without names, were placed into envelopes with pupils' names on them, alongside an envelope with the school office address on it, and handed out to pupils to take home at the end of the classroom visit. Parents were asked to complete the questionnaire about the child who had brought it home, put it in the accompanying envelope, and then drop it off at a designated box in the school reception for collection.

3.4.3 Feedback to schools

Schools were sent emails to thank them for their participation in the research. The head teacher or school contact was later sent a report, detailing the findings from children's questionnaire data in their school.

3.4.4 Carrying out qualitative interviews

Efforts were made to carry out interviews in a way that facilitated the trustworthiness of the data. Developing rapport is a crucial part of the interview process (Reinharz, 1993) and so in order to help the participants to feel as comfortable as possible, as well as to reduce the burden of time and travel, teachers were invited to suggest the time and location for their interview. The majority of interviews took place at the teacher's school, but interviews also took place at the UCL Institute of Education and in a public house.

All interviews were face to face. After a quiet and comfortable space had been found to carry out the interview, teachers were thanked again for agreeing to take part. They were told that the interview was designed to learn more about how teachers view emotional and stress related problems in their pupils; their experiences working with different pupils; and their own experiences of stress. In order to increase the trustworthiness of the data teachers were reassured that everything they said in the interview would remain strictly confidential. Teachers were also reassured that they did not have to answer any questions they preferred not to and encouraged to ask any questions they might have at any point of the interview. Teachers were asked for their permission to record the interview and for anonymised quotes to be included in the thesis and possibly published in academic journals, then given a consent form to sign.

In order to encourage teachers to feel comfortable disclosing personal information and opinions, simple introductory questions were used to open the interview, building up to questions designed to elicit information relevant to the research question at hand. Prompts, probes and clarification seeking were used to gather more information where appropriate, but care was also taken to use silence effectively and not to rush the interviewee. The topic guide was used as a flexible,

rather than rigid tool to encourage fluidity. After the interview, teachers were thanked for their participation and told to call or email if they had any further questions or would simply like to discuss the research further.

3.5 Measures

3.5.1 Teacher rating form and questionnaire

Teachers were given a two-part rating form to complete, followed by a questionnaire assessing various aspects of teachers' psychological wellbeing.

The teacher rating form (see Appendix 3) was designed to be relatively quick and easy to fill in. Teachers were first instructed to rate each of the children in their class from 1 to 5, based on how anxious they thought they had been *over the last two weeks*, to mirror the time frame adopted on the children's internalising symptoms scales.

Teachers were told to do this by imagining they were putting the children in their class into 5 separate groups, with children who they thought were the least anxious receiving a '1' and children who they thought were the most anxious getting a '5'. Importantly, teachers were instructed to make use of all five categories. This was emphasised with the following instruction: 'At least one child should get a '1'; at least one child should get a '2'; at least one child should get a '3'; at least one child should get a '4' and at least one child should get a '5'.' It was also made clear to teachers that they did not have to put the same number of children in each category. Teachers were then asked to assign 1 to 5 somatic ratings to children, based on how much the teacher believed they had experienced, 'physical symptoms without an obvious physical cause' in the last two weeks. Teachers were told that, 'physical symptoms without an obvious physical cause might include aches, pains, upsets (e.g. tummy) nausea and tiredness. It would not include pain from an injury, like a broken leg'. Again teachers were instructed to make use of all five categories, and told that they did not have to have the same number of children in each group. Teacher rating forms featured these instructions on the top half of the first page, followed by four columns: child name, child ID number, a space for the anxiety rating and a space for the somatic symptom rating. Names

were included on the rating forms for ease of completion, and were removed afterwards for confidentiality purposes, leaving only the ID numbers and corresponding ratings.

In the second half of the rating form, teachers were asked to note down the ID numbers of up to three children in their class who they believed had 'debilitating' levels of anxiety, and also to write a short description of their symptoms for each identified child. Debilitating was described as 'causing significant distress or impairment'. Similarly teachers were asked to note down the ID numbers of up to three children in their class who they believed had 'debilitating' levels of physical symptoms, without an obvious physical cause. Teachers were told to leave the spaces blank if they did not believe there were any children in their class with debilitating levels of symptoms, and that if there were more than three, to note down the three with the most debilitating levels of symptoms.

The teacher questionnaire (Appendix 4) contained five separate sections. Three of these related to teachers' emotional wellbeing, and included a measure of depression, anxiety and stress, an obsessive-compulsive symptoms scale and a mental wellbeing scale. There was also a scale measuring sources of stress, and finally a series of questions about teachers' interest and attitudes towards pupils' emotional wellbeing. A wide range of measures of psychological wellbeing were included because most previous studies of teacher wellbeing have only asked teachers to indicate how stressed they are, rather than investigated the nature of their purported poorer mental health. Given the competing theories regarding the relationship between psychological wellbeing and empathic accuracy, it was also thought potentially enlightening to include a wider variety of symptom measures, such as questions relating to worry and positive wellbeing.

Teachers' depression, anxiety and stress

The Depression Anxiety Stress scale (DASS; Loviband and Loviband, 1995) comprises three self-report scales which measure depression (dysphoria, hopelessness, devaluation of life, self-deprecation, lack of interest/involvement, anhedonia, and inertia) anxiety (autonomic arousal, skeletal muscle effects, situational anxiety,

subjective experience of anxious affect) and stress (difficulty relaxing, nervous arousal, being easily upset/agitated, irritable/over-reactive and impatient).

The DASS was selected as being appropriate for this study for several reasons: it was designed with the aim of discriminating between anxiety and depression symptoms in community samples, which is important to this study as although anxiety and depression symptoms may have a common cause, the difference in their nature may lead to different associations with empathic accuracy (e.g. Harkness et al. (2005); its items are particularly relevant to the definition of teacher stress used in this study (Kyriacou, 2001); and studies indicate it is a valid measure of stress in the workplace (Nieuwenhuijsen, de Boer, Verbeek, Blonk, & van Dijk, 2003).

The original 42 item DASS has been shown to have excellent internal reliability (Cronbach's alphas of .90, .95 and .93 respectively for the anxiety, depression and stress scales and .97 overall); adequate convergent and discriminant reliability, and a robust three factor structure (Crawford & Henry, 2003). The shorter, 21 item version, which was used in this study, also has robust psychometric properties: Henry and Crawford (2005) reported Cronbach alphas of .93 for the total scale, and of .88, .82 and .90 for the depression, anxiety and stress scales respectively. In confirmatory factor analysis, they found the model with optimal fit had a quadripartite structure which consisted of a general factor of psychological distress, plus orthogonal specific factors of depression, anxiety and stress. Respondents were asked to indicate to what extent they experienced each of the 21 items over the last two weeks: '0' = not at all; '1' = to some degree or a good part of the time; '2' = a considerable degree, or a good part of the time and '3' = very much, or most of the time. Total scores could therefore range from 0 to 63.

Teachers' worry

The anxiety items on the DASS-21 measure physiological symptoms of anxiety only, and because the measure was partly designed to discriminate between anxiety and depression, it does not include symptoms, such as worry, which are common to both. In order to compensate for the lack of cognitive items on the DASS, two

additional items assessing worry, taken from a screening measure for generalised anxiety disorder, the GAD-7 (Spitzer, Kroenke, Williams, & Lowe, 2006) were also included. These were 'I was not able to stop or control worrying' and 'I worried too much about different things'. These two items were added on to the end of the DASS-21 scale and used the same response options as the DASS-21.

Teachers' obsessive-compulsive symptoms

Obsessive-compulsive symptoms were of particular interest to this study. Firstly, because strong feelings of responsibility for others and intolerance to uncertainty, both of which have been associated with greater empathic accuracy (Heneghan et al., 2007; Weary and Edwards, 1994b), have also been shown to be high among those with obsessive-compulsive symptoms (Salkovskis et al., 2000; Frost et al., 2007). Secondly, because studies into the mental health of teachers rarely diversify beyond 'stress', with the result that there is little research which investigates the nature and prevalence of other sorts of symptoms in teachers. The revised version of the Obsessive-Compulsive Inventory (OCI-R) is a short (18-item) but well validated scale of obsessive-compulsive symptoms (Foa et al., 2002). It is particularly relevant to this study as items can be divided into dimensions such as 'checking' (most strongly associated with inflated feelings of responsibility towards others) and 'ordering' (most strongly associated with intolerance of uncertainty). Respondents were asked to indicate to what extent they have been distressed or bothered by items in the inventory over the last month on a rating scale from '0' (not at all) to '4' (extremely). Total scores could therefore range from 0 to a possible 72.

Teachers' positive mental wellbeing

Davis and Kraus (1997) reported that measures of positive psychological wellbeing were positively associated with better awareness of others' thoughts and feelings, whereas negative measures were not negatively associated with awareness of others' thoughts and feelings. It was therefore decided that a short measure of positive psychological wellbeing should be included. The positively worded Warwick-Edinburgh Mental Wellbeing Scale (WEMWBS) has been shown to have robust psychometric properties (Stewart-Brown et al., 2011; Tennant et al., 2007).

It has also been used in occupational settings where it has been associated with positive working conditions (Bartram, Yadegarfar, Sinclair, & Baldwin, 2011). The inclusion of this scale had the added advantage of balancing out the negative items in other scales. Respondents were asked to indicate how much they had felt a particular way over the last two weeks on a scale from '1' (none of the time) to '5' (all of the time) meaning total scores could range from 0 to 70.

Teachers' attitudes and beliefs

A bespoke series of twelve questions was devised to assess teachers' interest and attitudes towards pupils' emotional wellbeing (see Section D of the Teacher Questionnaire in Appendix 4). One of these questions asked teachers to rate how interested they had been in pupils' emotional wellbeing.

Five of these questions related to teachers' feelings of responsibility for pupils' wellbeing. These questions were inspired by the Responsibility Attitude's Scale (RAS; Salkovskis et al., 2000) which was developed as an assessment of responsibility beliefs in obsessive-compulsive disorder. The question, 'It is a teacher's job to protect pupils from any sort of emotional distress' was adapted from the question, 'I must protect others from harm' on the RAS for example; while the question, 'I am too sensitive to feeling responsible for my pupils' emotional wellbeing' was adapted from the question, 'I am too sensitive to feeling responsible for things going wrong'. Other questions on the scale such as, 'Teachers are just as responsible as parents for pupils' emotional wellbeing' were newly devised and not obviously related to the RAS.

In addition to the five questions assessing teachers' feelings of responsibility for their pupils' wellbeing, and the one question on their interest in pupils' emotional wellbeing, teachers were asked six questions about the extent to which they believed pupils themselves had a role in causing, exaggerating and prolonging their own anxiety and physical symptoms. These were included because of evidence from Robbins et al. (1994) that physicians who blamed depressed patients for causing, exaggerating or prolonging their depression made fewer assessments of psychological distress, and were less accurate in those assessments than those who

did not see patients as contributing to their condition. Teachers were asked to indicate to what extent they agreed with these statements on a five point Likert scale ranging from 0 (not at all/disagree very much) to 4 (a lot/agree very much).

After administration in the first school, a series of minor changes were made to the questions in an attempt to improve the distribution of responses. This decision was only taken after original and revised versions of the questionnaire were piloted on a group of 42 employed or student teachers (31 of whom were studying for a PGCE at the Institute of Education), and the changes were found to improve the distribution of responses. The first change related to teachers' interest in pupils' emotional wellbeing. Teachers were originally presented with the statement, 'I've been feeling interested in my pupils' emotional wellbeing', and all teachers indicated they had felt this way either 'quite a bit' or 'a lot'. After piloting, this statement was changed to, 'I've been feeling very interested in my pupils' emotional wellbeing'. A small change was also made to questions relating to teachers' attitudes to the cause and presentation of anxiety and somatic symptoms in pupils: Teachers were asked to indicate to what extent they agreed that pupils caused, exaggerated or prolonged symptoms of anxiety and, separately, physical symptoms. The word 'often' (e.g., 'Pupils often cause their own anxiety') was added to these six questions. The questions relating to teachers feelings of responsibility (e.g., 'Teachers are just as responsible as parents for children's emotional wellbeing') remained the same.

3.5.2 Child questionnaire

The child questionnaire (see Appendix 5) comprised three sections: an anxiety scale, a somatic symptoms scale and a happiness scale.

Child anxiety

The Spence Children's Anxiety Scale (SCAS; Spence, 1998) was selected as the most appropriate measure of anxiety for this study for a number of reasons. Firstly, it is a multidimensional measure, developed to assess subtypes of anxiety described in the DSM-IV (APA, 1994). Its 44 items cover the following dimensions: generalised anxiety, panic/agoraphobia, separation anxiety, obsessive-compulsive symptoms, physical injury fears and six positive filler items. The inclusion of anxiety subtypes in

the scale was useful as it allowed the development and testing of hypotheses relating to which types of anxiety were most recognisable to teachers, through comparisons of the relationship between teacher ratings and each separate factor scale. Secondly, the SCAS is an increasingly popular scale which has been validated in a number of different cultures and settings (Essau et al., 2004; Essau, Sasagawa, Anastassiou-Hadjicharalambous, Guzman and Ollendick, 2011; McLaughlin, Stewart and Taylor, 2007), and has previously been used with this age group in the UK (Smith, Gibb, Neil, & Quay, 2012; Stallard et al., 2005). The scale is easy to administer and complete, with responses to each item measured on a 4-point scale from 0 to 3. Total scores could therefore range from 0 to 114.

The SCAS has been shown to have good test-retest reliability (a correlation coefficient of $r = .60$ over a six month period: Spence, 1997; and $.63$ over a period of a year: Spence, Barrett and Turner, 2003); strong internal consistency (Muris, Merckelbach, Ollendick, King, & Bogie, 2002; Muris, Schmidt, & Merckelbach, 2000); good convergent validity with other measures of anxiety (Chorpita, Yim, Moffitt, Umemoto and Francis, 2000) and high agreement with clinicians' reports of anxiety (Brown-Jacobsen et al., 2011). Reliability and validity were maintained in the SCAS when responses were changed to be more familiar to English primary school children and the time frame was adapted to cover the last two weeks only (Smith et al., 2012). In this study, the same changes were implemented and so SCAS response categories became 'not at all', 'a little', 'quite a bit' and 'a lot'. In the current study the scale showed good internal consistency (Cronbach's alpha = $.92$).

The six filler items on the SCAS broadly relate to self-esteem, and comprise the following: 'Other children liked me', 'I was good at sports', 'I was a good person', 'I felt happy', 'I liked myself' and 'I was proud of my school work'. Although these items were not originally developed to be a separate subscale on the SCAS; in a confirmatory factor-analytic study where these six items were entered as a seventh factor (Spence, 1997), five out of the six loaded greater than $.4$ on this seventh factor. In the current study, the internal consistency of the items was acceptable (Cronbach's alpha of $.67$, $n = 1346$) and the scale demonstrated divergent validity with the SCAS ($r = -.17$). In a previous study including 133 children aged 7 to 11

years (Smith et al., 2012), these filler items showed some degree of convergent validity with another measure of self-esteem, The Great Ormond Street Self Image Profile (GOSSIP: Dobbs, Monck, & Rowley, 1986); ($r = .31$), and some divergent validity against a measure of depressive symptoms in children, the Birlleson Depression Self Rating Scale (DSRS: Birlleson, 1981; Birlleson, Hudson, Buchanan, & Wolf, 1987); ($r = -.19$). The six SCAS items were each scored from '0' to '3' meaning total scores could range from 0 to 18.

Child somatisation

The Children's Somatisation Inventory (CSI: Walker and Green, 1989) is an American self-report questionnaire designed to assess somatic symptoms in children and adolescents. It was originally developed in relation to somatisation disorder in the Diagnostic and Statistical Manual of Mental Disorders (3rd ed., rev.; *DSM-III-R*; American Psychiatric Association, 1987) and, like the SCAS, has been used in several different countries including the Netherlands (Meesters, Muris, Ghys, Reumerman & Rooijmans, 2003) the Ukraine (Litcher, Bromet, Carlson et al., 2001) Poland (Essau, Olaya, Bokszczanin, Gilvarry, & Bray, 2013) and the UK (Vila et al 2009). In its original form it has 35 items which include headaches, nausea, tiredness, sore muscles and upset stomach, among others. Respondents are asked to report how often they have been bothered by symptoms in the last two weeks, in one of five categories: not at all, a little, somewhat, a lot and a whole lot.

The CSI has been shown to have strong internal consistency: for example, Garber, Walker and Zeman (1991) reported the co-efficient alpha to be 0.92. Other studies have reported similar levels of internal consistency alongside good convergent validity with other measures of somatic and emotional symptoms (Litcher, 2001; Meesters et al., 2003; Vila et al., 2009).

A 24-item version of the CSI has been shown to have a very strong correlation with the original, 35-item version (.99) and to have robust psychometric properties (Walker et al., 2009). For this study, the scale was further shortened to 18 items,

with six rarely endorsed items removed⁴. In a recent study this version was shown to retain good psychometric properties, with the removal of the six items making no significant impact (Smith et al., 2012). Reliability and validity was also maintained in the CSI when responses were changed to be more familiar to English primary school children (Smith et al., 2012). In this study, the same changes were implemented and so CSI responses became 'not at all', 'a little', 'some' 'quite a bit' and 'a lot'. Scores for each item ranged from '0' to '4'. A total score of for the 18 items could therefore range from 0 to 72. In the current study the 18-item scale showed excellent internal consistency (Cronbach's alpha = .91).

Research into the factor structure of the CSI has yielded differing results. Using exploratory and confirmatory factor analysis on a sample of 876 paediatric patients with chronic abdominal pain, Walker et al. (2009) concluded that the measure (in its 24-item form) comprised one large, general factor, representing multiple symptoms, but also less significant elements representing certain types of symptoms. More recently, using confirmatory factor analysis, Essau et al. (2013) reported that a four factor model (comprising pain/weakness, gastrointestinal problems, cardiovascular symptoms and pseudoneurological problems) demonstrated a better fit than a one dimensional model, in data from a community sample of 733 Polish young people aged 12-17.

In the current study, exploratory principal components analysis with a varimax rotation was conducted on the 18 included items. The Kaiser-Meyer-Olkin measure justified the sampling adequacy (KMO = .94). Before rotation, the first dominant factor (eigenvalue = 6.96) explained 38.7% of the variance, while two other factors with eigenvalues above 1 explained 13% of the variance between them. Following rotation, factor one explained 21.7% of the variance in CSI scores, factor two explained 18.7% and factor three explained 10.8%. Nine of the items clustered onto factor one, seven on factor two, and two on factor three. The items which clustered on factor one were from multiple domains, and included headaches, tiredness,

⁴ Following Smith et al. (2012) the items which were excluded were: 'Pains in your lower back', 'Difficulty swallowing', 'Losing your voice', 'Blurred vision (when things look blurry, even with glasses on)', 'Feeling bloated or gassy' and 'Pain in your knees, elbows or other joints'.

numbness/tingling and sickness from food. The seven items which clustered on factor two appeared to be predominantly, but not entirely, related to cardiovascular symptoms; they were feeling faint/dizzy, pain in the heart and chest, breathlessness, feeling sick or having an upset tummy, heart beating too fast, being sick or throwing up and pains in arms or legs. The third factor featured constipation and diarrhoea only.

Because, in the current study teachers' recognition of certain symptoms (headaches, stomach aches) rather than factors of symptoms (e.g., cardiovascular symptoms) were hypothesised to show better agreement with teachers' reports of children's somatisation, separate scores in line with these factors were not calculated for comparison with teachers' ratings.

Sources of happiness

A nine item 'sources of happiness' scale developed by Smith et al. (2012) formed the final section of the child questionnaire. Children were asked to what extent the following made them feel happy: friends or other children, schoolwork/lessons, TV or computer games, mum and/or dad, brothers/sisters, playing games or sports, being alone, break time and pets. Children were given the response options 'never', 'sometimes' and 'often', ranging from 0 to 2. This scale was included in an attempt to balance out the negativity of some of the items on the SCAS and CSI. It showed reasonable internal consistency given the small number of items (Cronbach's alpha = .55).

3.5.3 Parent questionnaire

The parent questionnaire (see Appendix 6) comprised two sections: An anxiety scale and a somatic symptoms scale.

Child anxiety

The anxiety scale used was the parent version of the Spence Children's Anxiety Scale (SCAS-P; Nauta et al., 2003; Spence, 1999). The SCAS-P includes identical items to the child version of the scale, adapted to the third person for parents to report on their child's symptoms. Like the child version, the scale can be divided into six subscales in accordance with anxiety disorders outlined in the DSM-IV (APA,

1994) including generalised anxiety, panic and agoraphobia, social phobia, separation anxiety, obsessive-compulsive symptoms and physical injury fears. Respondents rated the frequency of each item on a 4-point Likert scale ranging from 0 (not at all) to 3 (a lot). The validity of the parent report version was established by Nauta et al. (2003) who reported that the scale had excellent internal consistency (Cronbach's alpha of 0.89), good convergent validity with the child version of the SCAS and internalising items on the Child Behaviour Checklist (Achenbach, 1991) good discriminatory power between children with and without an anxiety disorder and support for its six-factor structure.

Child somatisation

Following Garber et al. (1991) parents were given a modified version of the Children's Somatisation Inventory (P-CSI) on which to report on their child's somatic symptoms. The scale featured exactly the same 18 items as those administered to children. Previous studies, using the original 35-item version of the P-CSI, have reported adequate convergent validity with the child version of the scale (Meesters et al., 2003). In the current study, the scale demonstrated excellent internal validity, with a Cronbach's Alpha of .91.

3.5.4 Qualitative teacher interview

A semi-structured qualitative interview was used to investigate how teachers defined and recognised internalising symptoms in their pupils. As well as asking teachers how they became aware of pupils experiencing anxiety and physical symptoms, and to provide real life examples of children they believed presented such symptoms, teachers were also probed for their experience of teaching pupils with specific sorts of symptoms, such as worry and obsessive-compulsive symptoms. Other aims were to explore teachers' attitudes towards pupils' emotional wellbeing, and to gather information on teachers' own experiences of stress and its potential impact on their recognition of symptoms in pupils.

The topic guide for the interview can be seen in Appendix 8. It began with simple introductory questions covering teachers' backgrounds and past experience, before moving on to teachers' perceptions of their role, the school ethos and training. Only

then were teachers asked about how they recognised anxious pupils and their experiences teaching children with various symptoms. In order to improve the trustworthiness of the data, teachers were asked to think about pupils they had worked with or were currently working with, and to describe these children rather than hypothetical examples of anxious or somatic children. Teachers were also asked about the nature and causes of stress in teaching. Again, in order to encourage teachers to provide good quality data, interviewees were gently probed about whether they had experienced certain symptoms associated with common mental disorders such as sleeplessness and racing thoughts. In order to close the interview in a positive manner, teachers were asked to describe the best things about teaching, and encouraged to provide any information they thought was relevant that had not been asked. The approach taken to qualitative analysis is described in further detail in the next section.

3.6 Data entry and analyses

3.6.1 Quantitative data analysis

For purposes of analysis questionnaires and rating forms were entered into IBM SPSS statistics 22. Following entry, data were cleaned. Any missing data were identified and checked, and out of range data were corrected. For the SCAS and CSI scales total scores were calculated. If a participant had responded to at least 75% of items, a total score was prorated on an individual basis, using that individual's responses on completed items. A total score was not computed for scales where less than 75% of items had been completed. SCAS subscale total scores were also prorated on an individual basis. For example, on the obsessive-compulsive subscale, if participants had responded to only four of the six items, an OCD total score was prorated on an individual basis, using that individual's responses on completed items. The OCD subscale score was not calculated if participants had completed fewer than four of the six items. As I was present during children's data collection, I had a good opportunity to check for any missing data and collect it at the end of the administration session.

After data cleaning and verification, descriptive, inferential and where appropriate, non-parametric analyses were used to explore the relationships between study variables. Correlations between teachers' ratings of pupils' symptom levels and pupils' self-reported scores were converted using Fisher's r to z transformation to create individual agreement or 'sensitivity' scores in the style of Snodgrass (2001), and these were then used as dependent variables in analyses with other variables.

3.6.2 Qualitative data analysis

The aim of the qualitative analysis was to explore ten teachers' understanding and experiences of pupils' internalising symptoms from their personal viewpoint, but also, to a lesser extent, to identify possible explanations for the mismatch between children's self-reported accounts and teachers' quantitative ratings, measured in the first stage. Thematic analysis (Braun & Clarke, 2006) was chosen as the most suitable analytic approach for the qualitative data primarily for its flexibility and rigour. Thematic analysis is used within a wide range of theoretical frameworks and to answer a wide range of questions. In this study it allowed me to adopt elements of an experiential approach by focusing on individual teacher's perspectives (e.g., how they defined anxiety) and personal experiences (how they made sense of symptoms in children they have taught). In contrast to Interpretative Phenomenological Analysis (Smith, Flowers, & Larkin, 2009), however, which focuses particularly on what is unique about individuals, and despite the relatively small number of interviews, I could ultimately prioritise the identification of patterns across the dataset, thereby identifying commonalities in teachers' definitions and strategies for identification. Thematic analysis, like grounded theory, facilitates the generation of contextually relevant meaning from the data. Akin to a grounded theorist, I wished to be open-minded to unanticipated insights within the data; however I also wished to accommodate the findings from my quantitative analysis in the questions I asked and my overall interpretation of findings. Again, the flexibility of thematic analysis meant that I could achieve both aims.

The analysis of the qualitative interviews followed Braun and Clark's (2006) six phases of thematic analysis. All the interviews were transcribed using transcript

notation adapted from Jefferson (2004). After being checked against the recordings for accuracy, transcriptions were imported into QSR international's NVivo10 software for analysis. After becoming familiar with the data through reading and re-reading, initial codes were assigned to each data item. These codes were then organised into identified themes which were reviewed and revised as necessary in relation to the initial codes and the data set as a whole. The themes were then named, and where appropriate refined further, to make sure each one held together logically and was distinctive from the other themes. Data analysis began before all the interviews had been completed. By the tenth interview it was felt that theoretical saturation had been achieved because patterns were recurring and new data was not leading to the generation of substantially new ideas (Fossey, Harvey, McDermott, & Davidson, 2002).

As described in section 3.5.1, qualitative data was also collected in the teacher rating form, where teachers were invited to provide brief written descriptions explaining why they had identified certain children as having debilitating levels of symptoms. Thematic analysis (Braun and Clark, 2006) offered a rigorous framework with which to analyse this data. In addition to this qualitative analysis, it was also thought informative, given the number of teachers participating ($n = 51$) to see what descriptions were most frequently used to describe symptomatic children. A numerical representation of the qualitative data was therefore applied in the form of content analysis on the identified themes and subthemes.

3.7 Ethics

Ethical approval was sought and obtained for this study in line with the University's doctoral student ethics procedure. I was also subject to a Disclosure and Barring Service (DBS) check.

3.7.1 Consent

All potential participants were informed about the purpose of the research and the requirements of participation before consent was sought. Parents were written to about the research and given an opportunity to opt their child out of completing the questionnaire beforehand. For children, extra time was spent explaining the

nature of research and confidentiality, and the procedure of the study before verbal assent was sought. To avoid any stigma or embarrassment to children who decided not to take part (or to those whose parents had opted them out), children were free to engage in an alternative activity agreed with the teacher (such as reading or drawing), if they wished. Teachers' consent to complete the rating form and questionnaire was documented with a consent form. As described previously, teachers were asked to indicate in a tick box at the end of the questionnaire whether it would be alright to be contacted with some more information about the second stage of the research. It was made clear that ticking this box did not commit teachers to taking part in the second stage of the research, as they would be given an opportunity to decide after they had heard more about it. Those sampled for the final stage of the research were fully informed about the purposes and requirements of the interview. Informed consent was then gained for this part of the research and documented with a consent form.

3.7.2 Risk and burden of taking part

It is possible that asking already symptomatic children and teachers to focus on anxiety/somatisation may be uncomfortable for them, and even increase symptoms. To minimise this possibility positive items were included in measures, so that the focus of the research did not rest exclusively on upsetting feelings and events. Two scales of anxiety and somatic symptoms were recently administered to children as part of a Department of Health funded study into stress in children, and no ill effects of questionnaire completion were reported. (During this previous study it was noted that several teachers expressed a desire for research into their own stress levels, so it was hoped that the opportunity to engage in such research would be welcomed).

To avoid expenses, and reduce time burden, teachers' interviews were carried out at a time and place of the participant's choosing. Potential participants were informed of approximately how long the interview would take, and that it would be tape recorded, before consent was sought. It was also made clear to participants before they consented to take part that they were free to stop the interview at any time.

3.7.3 Data storage and confidentiality

All data has been kept securely both electronically and in hard copy and is accessible only to myself and the research supervisor. As described earlier, to ensure confidentiality, each teacher and child was assigned a unique identifying number. This unique identifying number, rather than the participant's name, was used on questionnaires.

3.7.4 Ethical concerns and safeguarding

A plan of action in the form of a disclosures procedure was developed to deal with any instances where I became aware of information raising a high level of concern about safeguarding issues or a child's welfare. The plan was as follows: in the first instance, if it could be done discretely bearing in mind the classroom environment, the researcher would listen to the child before gently telling them of their concerns and saying that they would like to raise it with their teacher. The researcher would then find a suitable opportunity (e.g., after the class, in the staff room) to tell the child's teacher about their concerns. If the researcher were to become aware of information which raised a low level of concern, or niggling worries, the researcher would discuss the information with the research supervisor before taking any action.

If the researcher were to become aware of information which raised a high level of concern about a teacher's welfare (either during the first stage of research, or during the second, interview stage of the research) the researcher would state to the teacher that she would like to help, by putting the teacher in touch with a local helping agency for example. Again, this would be done discretely, e.g., when the teacher was alone. The researcher was fully briefed with details of appropriate local helping agencies and self-help organisations.

A possible ethical concern was that participants with debilitating levels of symptoms would be identified. High scores on questionnaire-based measures of anxiety and somatic symptoms were not considered as grounds for disclosure by the researcher to the class teacher as such measures are indicators of health and wellbeing and do not constitute a diagnosis on their own.

3.7.5 Other ethical concerns

An additional ethical concern was that teachers would feel reluctant to 'label' or identify children as anxious or somatising. It was made clear to teachers that the researcher would not be approaching the children they identified for any further research or intervention, and that teachers' ratings would remain strictly confidential. In practice, no teachers expressed any reluctance to label children in this way.

It was acknowledged that teachers might want to know whether they were right or wrong in identifying children who scored highly on measures of anxiety and somatic symptoms. This could not be done as it would be a breach of confidentiality. Instead teachers were provided with a brief report summarising the prevalence of the different sorts of anxiety and somatic symptoms in all the school's pupils, and differences in levels of symptoms by gender and year group.

Chapter 4 Results: Children's, parents' and teachers' reports of anxiety and somatic symptoms in children

There are four short results chapters in this thesis. The current chapter (chapter 4) reports preliminary findings on the levels of anxiety and somatic symptoms in 7-11 year old children as assessed through self-report, parent-report and teacher-report, and these symptoms' association with demographic characteristics such as gender. Chapter 5 reports quantitative findings relating to the first two overarching hypotheses, pertaining to the relationships between self-/parent-reports of anxiety and somatic symptoms in children and teachers' ratings and nominations; followed by an analysis of whether children with certain subtypes or patterns of symptoms are more likely to be identified as anxious or somatic by their teacher. Chapter 6 addresses the third overarching hypothesis, relating to factors in teachers associated with better concordance between their ratings and children's self-reported anxiety and somatic symptoms (referred to as teachers' 'sensitivity' scores). Finally, chapter 7 addresses the question of *how* teachers identify anxiety and somatic symptoms in their pupils through analysis of qualitative data from both teachers' questionnaires and interviews.

The current chapter begins by reporting the levels and distributions of participating children's anxiety and somatic symptoms as assessed by self-report (section 4.1), parent-report (section 4.2) and finally, teachers' ratings/nominations (sections 4.3 and 4.4).

4.1 Children's questionnaire data

4.1.1 Levels of anxiety and somatic symptoms

Children (n = 1338) reported a mean SCAS total score of 31.80 (SD = 19.35). This score is very similar to that originally reported by Spence (1998) among a community sample of 2052 Australian children aged 8-11 years (M = 31.3, SD = 17.3) and is also closely in line with other studies conducted in England (Smith et al., 2012; Stallard et al., 2005). It is somewhat higher than mean scores reported by samples of children aged 8-12 years in Japan (M = 22.4, SD = 14.9) and Germany (M = 22.9, SD = 14.2; Essau et al., 2004). Children (n = 1330) reported a mean CSI score

of 20.23 (SD = 14.63), which was again, similar to those previously reported (Garber et al., 1991; Litcher, 2001; Smith et al., 2012). As can be seen in Figure 1, scores on the SCAS ranged from 0 to 110 and followed a relatively normal distribution, though with a positive skew. Children’s CSI scores ranged from 0 to 72 and also followed a relatively normal distribution with a positive skew.⁵

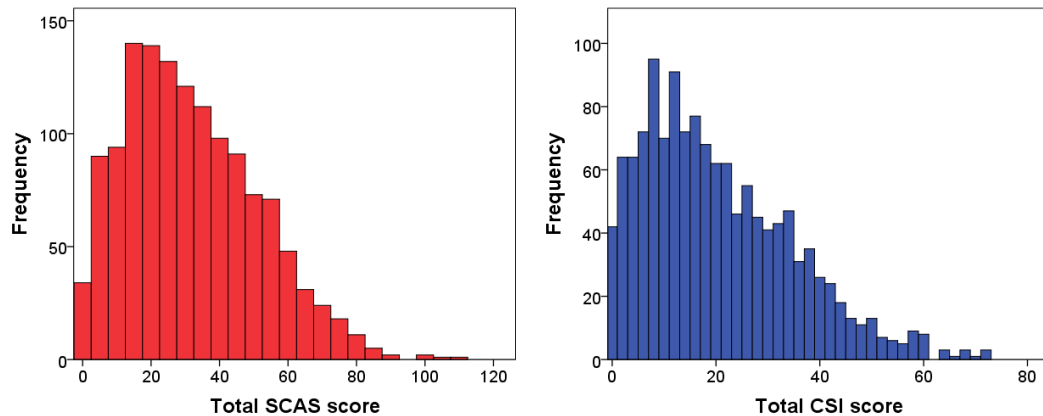


Figure 1. Frequency distributions of children’s mean total anxiety (SCAS) and somatic (CSI) scores

4.1.2 Anxiety and somatic scores by gender and age

As expected, girls reported significantly higher SCAS scores than boys. There was also a significant effect of year group on SCAS scores (see Table 3). Post-hoc (Tukey HSD) tests revealed statistically significant differences between all year groups, except for years 3 and 4, with younger children reporting higher levels of anxiety symptoms than older children. Girls reported higher levels of somatic symptoms than boys on the CSI, and younger children reported being significantly more bothered by somatic symptoms than older children. Post-hoc tests showed statistically significant differences between all year groups except for years 5 and 6.

⁵ Transformations did not improve the distribution of scores, which given the large sample size, were not deemed to be problematic.

Table 3. Anxiety (SCAS) and somatic (CSI) scores by gender and age: Descriptive statistics, t-test and ANOVA results

	SCAS totals			CSI totals		
	mean	SD	range	mean	SD	range
Boys	28.06	18.96	0 - 110	19.15	14.82	0 - 72
Girls	35.25	19.03	0 - 101	21.21	14.40	0 - 71
	$t(1324) = -6.89, p < .001, d = 0.38$			$t(1316) = 2.56, p = .01, d = 0.14$		
Year 3	36.67	19.03	0 - 101	23.47	15.67	0 - 72
Year 4	34.97	20.56	0 - 110	22.62	14.21	0 - 72
Year 5	29.74	18.63	0 - 83	18.25	13.69	0 - 65
Year 6	25.22	16.38	0 - 87	16.13	13.48	0 - 71
	$F(3, 1334) = 25.62, p < .001, \eta^2 = 0.06$			$F(3, 1326) = 20.03, p < .001, \eta^2 = 0.05$		

4.1.3 Anxiety and somatic scores by school.

Both SCAS and CSI scores varied significantly between schools (see Table 4) but the effect sizes were small. In order to investigate whether this difference could be attributed to levels of social disadvantage in the school catchment areas, the percentage of children eligible for free school meals (Table 2) was correlated with children's symptoms scores. On this rough measure, there was not a significant association with either SCAS ($r = .185, p = .691$) or CSI scores ($r = .022, p = .962$).

Table 4. Anxiety (SCAS) and somatic (CSI) scores by school: Descriptive statistics and ANOVA results

	SCAS totals			CSI totals		
	mean	SD	range	mean	SD	range
School 1	35.63	19.07	1 - 84	22.17	16.02	0 - 64
School 2	29.48	18.75	0 - 110	17.99	12.51	0 - 52
School 3	30.53	17.37	2 - 79	18.78	12.71	0 - 53
School 4	31.23	19.51	0 - 101	20.30	14.48	0 - 71
School 5	35.49	20.66	0 - 103	22.81	16.39	0 - 72
School 6	27.97	19.68	0 - 77	17.53	13.10	0 - 50
School 7	29.00	18.11	0 - 87	19.09	13.89	0 - 72
	$F(6, 1331) = 4.78, p < .001, \eta^2 = 0.02$			$F(6, 1323) = 3.39, p = .003, \eta^2 = 0.02$		

4.1.4 Relationship between anxiety and somatic scores

There was a moderate to strong correlation between children's SCAS and CSI scores ($r = .69, p < .001$). Correlations between total SCAS scores and subscale scores ranged from $r = .35$ for 'physical injury fears' (being scared of the dark, dogs, the doctors/dentists, insects, lifts) to $r = .66$ for the panic/agoraphobia subscale.

4.1.5 Most commonly reported symptoms

Of all the SCAS items, the most commonly reported symptom was 'I worried that something awful would happen to someone in my family'. Nearly a third of children (29.3%) said they had felt this way 'a lot' over the last two weeks, 13% 'quite a bit', a quarter (24.8%) 'a little' and a third (32.5%) 'not at all'. The next most commonly reported symptom was 'When I had a problem, my heart beat really fast'. A quarter of children said they felt this way 'a lot' over the last two weeks.

Of the six domains of symptoms assessed, obsessive-compulsive symptoms were the most frequently endorsed. More than half of children said they 'had to do some things in just the right way to stop bad things happening' at least 'a little', for example. A total of 16% of children said they had felt this way 'a lot' over the last two weeks. Similarly, more than half of children said they had been 'bothered by bad or silly thoughts or pictures' in their mind at least 'a little' in the last two weeks; a third were bothered by this 'quite a bit' or 'a lot'. The second most commonly reported domain of symptoms was generalised anxiety (comprising items such as 'I worried about things') followed by social anxiety (comprising items such as 'I felt afraid that I would make a fool of myself in front of people').

Fears and anxieties related to school were less common. Only 10% of children said they had felt scared when they had to take a test 'a lot' over the last two weeks, but around half said they had felt this way either 'a little' or 'quite a bit', leaving 40% of children who had not felt scared of tests at all in this time period. The vast majority of children (72.8%) responded 'not at all' to the item 'I had trouble coming to school in the mornings because I was nervous or afraid'. Only 5% of children said they felt that way 'a lot' over the last two weeks; but that does equate to 61 key stage two children over seven schools.

There are five response options on the CSI (compared to four on the SCAS): ‘not at all’, ‘a little’, ‘some’, ‘quite a bit’ and ‘a lot’. The most commonly endorsed symptom on this scale was ‘feeling tired’. A quarter of children said they had been bothered by this ‘a lot’ over the last two weeks. The next most commonly reported symptom was ‘headaches’. Only a third of children said they had not been bothered by these at all over the last two weeks, while a fifth reported being bothered by them ‘quite a bit’ or ‘a lot’. The third most commonly reported symptom was ‘pain in your arms or legs’. Only 37% of children had not been bothered at all by these over the last two weeks. Around a quarter indicated that they had been bothered by these symptoms either ‘quite a bit’ or ‘a lot’.

4.1.6 Self-esteem and happiness

Children reported a mean score of 13.0 (SD = 3.48) on the six SCAS positively worded ‘filler’ items relating to self-esteem, with scores ranging from 0 to 18. Boys reported significantly higher levels of self-esteem ($M = 13.42$, $SD = 3.57$) than girls, ($M = 12.67$, $SD = 3.35$; $t(1324) = 3.96$, $p < .001$, $d = .23$). There was a tendency for self-esteem to decrease with age ($F(3, 1334) = 3.51$, $p = .02$, $\eta^2 = 0.01$); children in year 3 reported significantly higher levels of self-esteem ($M = 13.46$, $SD = 3.71$) than children in year 6 ($M = 12.62$, $SD = 3.26$).

Children reported a mean score of 12.97 (SD = 2.65) on the happiness scale, with scores ranging from 0 to 18. Once again, boys reported significantly higher scores on this scale ($M = 13.25$, $SD = 2.68$) than girls ($M = 12.71$, $SD = 2.61$; $t(1274) = 3.64$, $p < .001$, $d = .20$). Scores did not differ significantly by year group ($F(2, 1284) = 1.02$, $p = .39$).

4.2 Parents’ questionnaire data

4.2.1 Levels of parent-reported anxiety and somatic symptoms

The 144 partaking parents reported a mean SCAS score of 15.33 (SD = 12.75) and a mean CSI score of 5.98 (SD = 8.16). Although markedly lower than children’s self-reported scores, parent-reported SCAS and CSI scores showed relatively similar frequency distributions, with a positive skew, as displayed in Figure 2.

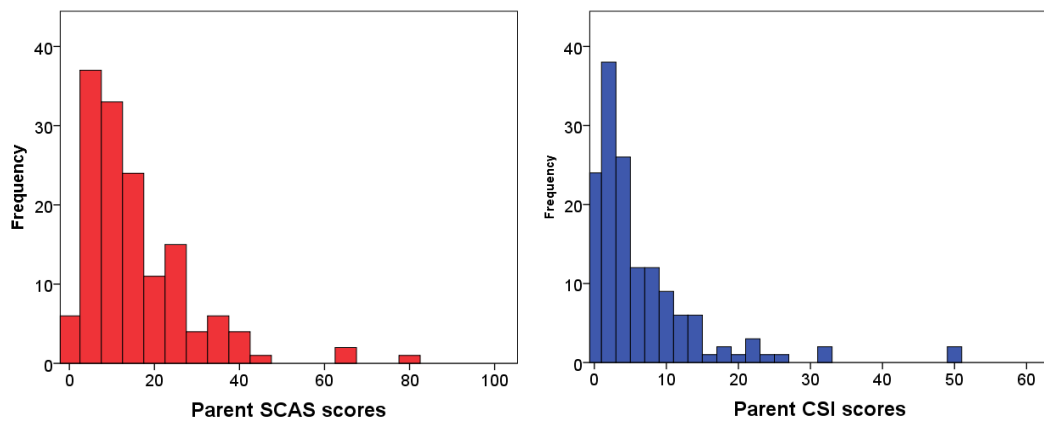


Figure 2. Frequency distributions of parent-reported mean total anxiety (SCAS-P) and somatic (CSI-P) scores

4.2.2 Parent-reported anxiety and somatic scores by gender and age

Despite following the same trend as children’s SCAS scores, parent-reported SCAS scores did not vary significantly by gender or by age. Parent-reported CSI scores did not vary by gender or age either (see Table 5).

Table 5: Parent-reported anxiety (SCAS-P) and somatic scores (CSI-P) by gender and age: Descriptive statistics, t-test and ANOVA results

	Parent SCAS totals			Parent CSI totals		
	mean	SD	range	mean	SD	range
Boys	13.47	10.55	0 - 42	5.27	7.07	0 - 32
Girls	16.67	14.03	2 – 78	6.49	8.86	0 - 50
	$t(142) = -1.49, p = .14, d = 0.26$			$t(142) = -.89, p = .38, d = 0.15$		
Year 3	17.68	14.43	1 – 78	6.24	8.68	0 - 49
Year 4	15.50	15.23	2 – 65	5.31	6.77	0 - 32
Year 5	14.79	8.70	3 – 43	6.13	6.10	0 - 24
Year 6	12.30	12.68	0 – 40	6.30	12.42	0 - 50
	$F(3, 140) = .89, p = .45, \eta^2 = .02$			$F(3, 140) = .11, p = .95, \eta^2 = 0.002$		

4.2.3 Relationship between parent-reported anxiety and somatic scores

There was a moderate correlation between parent-reported SCAS and CSI scores ($r = .50, p < .001$).

4.2.4 Relationship between parent-reported and child-reported anxiety and somatic scores

There was a moderate positive correlation between parent-reported and child-reported SCAS scores ($r = .49, p < .001$); and a more modest correlation between parent-reported and child-reported CSI scores ($r = .36, p < .001$). For subscale scores, parents and children showed most agreement on physical injury fears ($r = .53$) and least agreement on generalised anxiety disorder symptoms ($r = .34$) although this was closely followed by panic and agoraphobia ($r = .38$), separation anxiety items ($r = .38$), ocd items ($r = .38$) and social phobia items ($r = .40$).

4.3 Teachers' ratings

4.3.1 Distribution of teachers' anxiety and somatic ratings

Teachers assigned 1343 children two separate ratings from 1-5 based on how anxious and somatic they perceived each child in their class to have been in the last two weeks. For anxiety ratings, teachers were instructed to assign a '1' to those they perceived to be least anxious in the class and a '5' to those they perceived to be the most anxious in the class. This process was then repeated for somatic symptoms⁶. The distributions of teachers' anxiety and teachers' somatic ratings (see Figure 3) follows a broadly similar pattern to children's and parent's SCAS and CSI scores.

⁶ By definition, teachers' ratings of pupils' levels of anxiety and somatic symptoms are clustered within classes. Whereas the 1343 children's SCAS scores come from 1343 children, the 1343 teacher anxiety and somatic symptom ratings come from only 51 teachers. We might therefore expect there to be more similarity among teacher ratings within a class than between them. As described in the methodology section, however, teachers in all 51 classes were clearly instructed to make use of *all five ratings* on their pupils, and were therefore assigning relative rather than absolute ratings to children's internalising symptoms. The instructions to teachers meant that they were 'forced' to separate children in their class into five separate groups, although not necessarily into equally sized groups, circumventing any tendency to assign all children in the class similar scores.

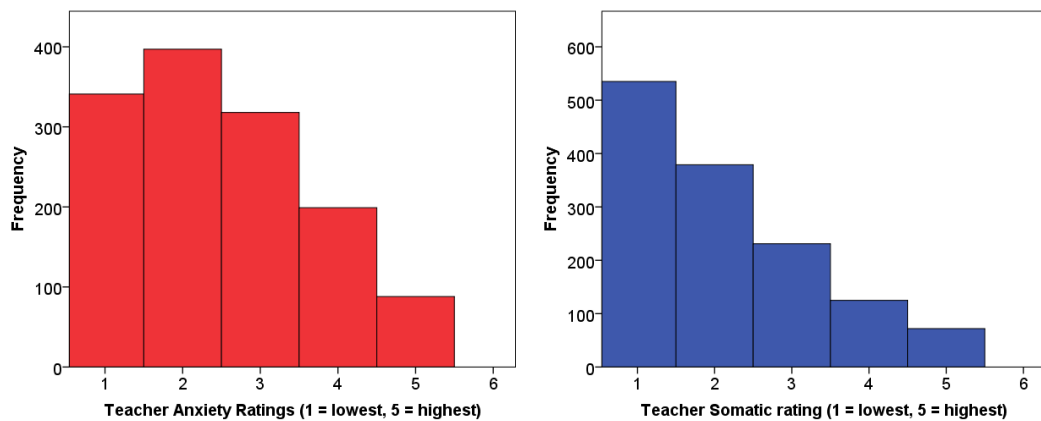


Figure 3. Frequency distributions of teachers' anxiety and somatic ratings

The median teacher anxiety rating for all 1343 children was '2'. The majority of children ($n = 397/29.5\%$) were given an anxiety rating of '2'. Most other children were assigned a rating of '1' ($n = 341/25.4\%$), or '3' ($n = 318/23.6\%$). Fewer children were assigned ratings of '4' ($n = 199/14.8\%$) or '5' ($n = 88/6.5\%$).

The median teacher somatic rating for all children was '2'. The most frequently assigned rating was a '1' ($n = 536/39.8\%$). Most other children were given ratings of '2' ($n = 379/28.2\%$) or '3' ($n = 231/17.2\%$). Again, fewer children were assigned a rating of '4' ($125/9.3\%$) or '5' ($n = 72/5.3\%$).

4.3.2 Comparison of child-reported symptom score distributions and teachers' rating distributions

In an attempt to compare the distribution of children's SCAS and CSI scores to teacher ratings in a more direct fashion, children's SCAS scores (which ranged from 0 to 110) were divided into five groups of equal width, based on the effective range of scores, ($110/5 = 22$ so 0 – 22 is SCAS group '1'; 23 – 44 is SCAS group '2' etc). The same was done for children's CSI scores ($72/5 = 14.4$ so 0 – 14 is CSI group 1; 15-29 is CSI group 2 etc). The median of this reclassified SCAS variable was 2, as was the mode. The median of the reclassified CSI variable was 2, and the mode was 1, just as in teacher ratings. These findings indicate that as a group, teachers' perceptions of the distribution of both children's anxiety and somatic symptoms scores are broadly in line with the distributions of children's self-reported scores on standardised measures (see Figure 4 below and Figure 3 above).

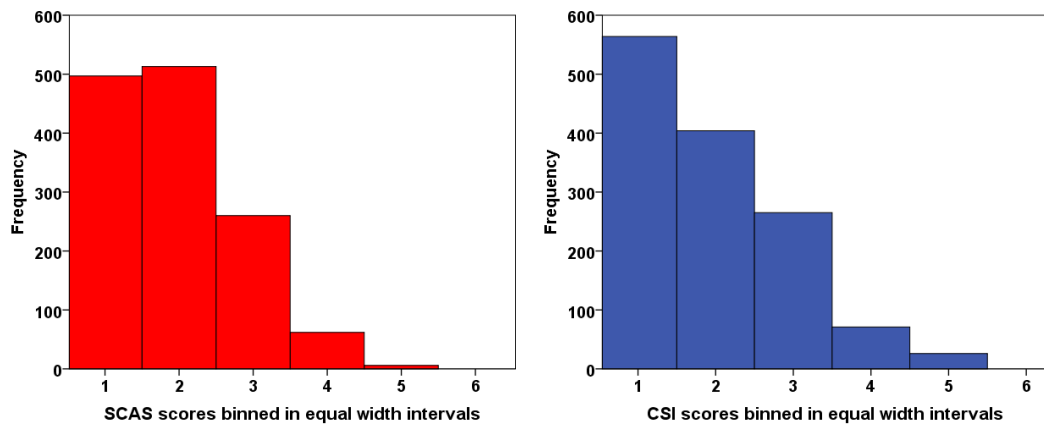


Figure 4. Frequency distributions of children's self-reported anxiety (SCAS) and somatic (CSI) scores when divided into groups of equal width intervals

4.3.3 Teachers' anxiety and somatic ratings by child gender

Whereas all teachers, regardless of school or year taught, were instructed to make use of all five of the same anxiety and somatic ratings on their class in a relative rather than absolute fashion; they were not instructed to make use of all five ratings for both male and female pupils. Analysis was therefore carried out to investigate whether the higher anxiety and somatic symptom levels self-reported by girls were mirrored in the teachers' ratings. As can be seen in Table 6, there were no significant differences in teacher ratings by gender, indicating that teachers do not perceive their female pupils as more anxious or somatic than their male pupils.

Table 6. Teachers' anxiety and somatic ratings by age and gender: Descriptive statistics and Mann-Whitney test results

	Teacher anxiety ratings (1-5)			Teacher somatic ratings (1-5)		
	mean	median	mode	mean	median	mode
Boys (n = 652)	2.49	2	2	2.14	2	1
Girls (n = 679)	2.46	2	2	2.10	2	1
U = 219,228, z = -.313, p = .76			U = 217,469, z = -.582, p = .56			

4.3.4 Relationship between teachers' anxiety and somatic ratings

A non-parametric Spearman's rho correlation coefficient calculated to determine the level of correlation between teachers' anxiety and somatic ratings revealed a moderately strong association between the two ($r_s = .65$, $p < .001$).

4.4 Teachers' nominations

Alongside the relative 1-5 ratings class teachers were asked to assign to all pupils, teachers were also asked to note down the assigned identity numbers of children in their class who they perceived to have 'debilitating' levels of anxiety. Debilitating was defined to teachers as 'causing significant distress or impairment'. In contrast to the 1-5 ratings, this section was based on teachers absolute rather than relative judgements; teachers were instructed to select between 0 and 3 children in their class who they believed had debilitating levels of anxiety symptoms, and then repeat the process for somatic symptoms (defined as physical symptoms without an obvious physical cause).

The 51 participating teachers identified 84 of a possible 153 (54.9%) children as having 'debilitating' levels of anxiety (the 51 teachers were instructed to identify a maximum of 3 children per class, which is why they could only identify 153 in total). Just under a fifth of teachers (9/17.7%) did not identify any children in their class as having 'debilitating' levels of anxiety. A total of 15 (29.4%) identified one, 12 (23.5%) identified two and 15 (29.4%) identified the maximum of three. Teachers identified exactly the same number of boys ($n = 42$) as girls ($n = 42$), and children were evenly distributed among year groups (year 3 = 19, year 4 = 22, year 5 = 20, year 6 = 23).

Teachers identified 63 of a possible 153 children (41.7%) as having 'debilitating' levels of somatic symptoms. Nearly a third of teachers (16/51, 31.4%) did not identify any children in their class as having 'debilitating' levels of somatic symptoms. The same number of teachers identified one child. Fewer (10/51, 19.6%) identified two children and only nine (17.6%) identified the maximum of three children. Once again, teachers identified similar numbers of boys ($n = 30$) and girls, ($n = 33$). Teachers of year 6 children identified more of their pupils as having 'debilitating' levels of somatic symptoms ($n = 20$) than teachers of children in other year groups (year 3 = 15, year 4 = 15, year 5 = 13) but this difference was not statistically significant ($\chi^2(3) = 2.12, p = .55$).

4.5 Summary

The aim of this chapter was to report preliminary results relating to the levels of anxiety and somatic symptoms in English school children as reported by children, parents and teachers, and to report on the association of these symptoms with demographic characteristics. In line with previous findings, these data indicate that girls self-report significantly higher levels of anxiety and somatic symptoms than boys; and that levels of symptoms decrease linearly with age from 7-11 years. Similar, but non-significant, trends were observed in parent-reported data. When asked to assign children in their class a rating from 1 to 5 on both anxiety and somatic symptoms (in a relative rather than absolute fashion) teachers did not assign girls in their class higher anxiety ratings than boys, and when asked to identify between zero and three children with 'debilitating' levels of anxiety and somatic symptoms (in an absolute rather than relative fashion), teachers of younger children did not identify more children than teachers of older children. Despite children in this study reporting relatively high levels of anxiety and somatic symptoms in comparison to the levels reported in some other countries, a fifth of teachers did not identify any children in their class as having debilitating levels of anxiety, and a third of teachers did not identify any children in their class as having debilitating levels of somatic symptoms. Teachers' anxiety and somatic ratings followed a similar distribution to children's self-reported symptoms, and there was an equally strong relationship between levels of children's anxiety and somatic symptoms as reported by teachers ($r_s = .65$) and children ($r = .69$).

Chapter 5 Results: Teachers' sensitivity to anxiety and somatic symptoms in children

This chapter reports quantitative data in relation to the first and second overarching hypotheses outlined in chapter 3. Firstly, results are reported in relation to the hypothesis that there would be a positive association between teachers' ratings of children's anxiety and somatic symptoms and children's self-reports/parent's reports of symptoms (sections 5.1 to 5.3). The results relating to the second hypothesis, that certain factors in children, such as their self-reported social anxiety, would be better associated with teachers' ratings than their self-reported obsessive-compulsive symptoms, are addressed in sections 5.4 to 5.7. Differences in the patterns and subtypes of symptoms in children nominated as having debilitating levels of anxiety and somatic symptoms by their teachers are reported in sections 5.8 to 5.11. Finally in section 5.12, the concept of teachers' 'sensitivity scores' is introduced. This is the concordance between teachers' reports of children's symptoms on a simple rating scale, and children's reports of their symptoms on standardised measures⁷. The relationship between teachers' sensitivity scores and demographic factors in teachers are reported in section 5.13, before further investigations of teachers' sensitivity scores, in respect to the third overarching hypothesis, are reported in chapter 6.

5.1 Correlations between children's and teachers' reports of children's symptoms

Teachers' ratings ranged from 1-5 only, and like children's self-reported symptoms, exhibited a slight positive skew. The non-parametric Spearman's rho correlation coefficient was therefore used to investigate the relationship between the entire set of teachers' ratings (N = 1343) and children's self-reported symptom scores on the SCAS and CSI. There was a small but significant positive correlation between children's self-reported SCAS scores and teachers' anxiety ratings (see Table 7).

There was also a small but significant positive correlation between children's self-

⁷ The Spearman's rho correlation coefficient between an individual teacher's anxiety ratings and their pupil's total SCAS scores was calculated, and then converted into Fisher's z scores so that they followed a normal distribution. The same process was repeated for somatic symptoms.

reported CSI scores and teachers' somatic ratings (see Table 7). In order to compare the two correlations, coefficients were converted using Fisher's r to z transformations. There was a similar relationship between teachers' anxiety ratings and child-reported SCAS scores as there was between teachers' somatic ratings and child-reported CSI scores (z difference = $-.37$, $p = .71$).

Table 7. Spearman's rho correlation coefficients between teachers' ratings and child-reported anxiety and somatic symptoms scores

	SCAS scores	CSI scores
Teachers' anxiety ratings	.14** (.16**)	.08** (.09**)
Teachers' somatic ratings	.16** (.18**)	.16** (.18**)

Note. Partial correlations controlling for age and school are in parenthesis. * $p < .05$, ** $p < .001$.

Because all teachers were instructed to make use of all five 1-5 anxiety/somatic ratings on their class, regardless of significant differences in children's self-reported anxiety levels by age group and school (as described in chapter 3), partial correlations were also carried out controlling for these variables⁸ (see Table 7). The slightly increased strength of the partial correlations likely reflects a suppressant effect of age and school differences on the original correlation with teachers' ratings.

Correlations were also calculated across the two symptom types to assess the relationship between children's SCAS scores and teachers' somatic ratings and vice versa. Children's SCAS scores appeared to be just as strongly associated with teachers' somatic ratings as they did with teachers' anxiety ratings, however the correlation between children's CSI scores and teachers' somatic ratings was significantly stronger than that between children's CSI scores and teachers' anxiety ratings (z difference = 2.13 , $p = .03$). A potential interpretation of this is that teachers use some (but limited, given the coefficient size) information, consistent

⁸ School and year group were transformed into dummy variables before being entered as control variables in the partial regression. By their very nature, teachers' ratings are clustered by teacher; however teachers were instructed to use all five 1-5 anxiety/somatic ratings, circumventing any tendency for them to assign similar ratings to children.

with children’s self-reported anxiety levels, to make both anxiety and somatic symptom judgements; but do not use information consistent with children’s self-reported somatic symptoms to make anxiety judgements. In support of this, a multiple regression analysis with teachers’ anxiety ratings as the dependent variable, revealed that children’s SCAS scores, but not their CSI scores, significantly predicted teachers’ ratings (see Table 8). Meanwhile, in a multiple regression analysis with teachers’ somatic ratings as the dependent variable, both children’s CSI scores and SCAS scores significantly predicted teachers’ ratings (see Table 9)⁹. (For further discussion of the use of linear regression with this data please see section 5.7).

Table 8. Children’s symptom scores as predictors of teachers’ anxiety ratings.

	B	Std B	β	p
Children’s SCAS scores	.009	.002	.151	<.001
Children’s CSI scores	-.001	.003	-.012	.751
R²	.021			
F change	13.90, <i>p</i> <.001			

Table 9. Children’s symptom scores as predictors of teachers’ somatic ratings

	B	Std B	β	p
Children’s CSI scores	.009	.003	.115	.002
Children’s SCAS scores	.005	.002	.073	.049
R²	.030			
F change	20.57, <i>p</i> <.001			

5.2 Correlations between parents’ and teachers’ reports of children’s symptoms

The subsample (n = 144) of parent-reported anxiety and somatic scores were also correlated with teachers’ ratings. There was a small but significant positive correlation between parent-reported total SCAS scores and teachers’ anxiety ratings, and a small but significant positive correlation between parent-reported total CSI scores and teachers’ somatic ratings (see Table 10). As with child-reported scores, there was a similar relationship between anxiety scores and anxiety ratings

⁹ Positive skews in the distributions of both children’s and teachers’ data remained following transformations. Multiple regression analysis carried out using log transformed and square root transformed data revealed the same pattern of results.

as between somatic scores and somatic ratings (z difference = $-.18$, $p = .86$). As for the different informants, although teachers' anxiety ratings correlated more strongly with parent-reported SCAS scores than they did with child-reported SCAS scores, this difference was not significant (z difference = $.58$, $p = .56$). Teachers' somatic ratings did not have significantly stronger associations with parent-reported CSI scores than child-reported CSI scores either (z difference = $.59$, $p = .56$).

Table 10. Spearman's rho correlation coefficients between teachers' ratings and parent-reported anxiety and somatic symptoms scores

	Parent SCAS scores	Parent CSI scores
Teachers' anxiety ratings	.18* (.21*)	.20* (.22*)
Teachers' somatic ratings	.23** (.24)*	.21** (.23*)

Note. Partial correlations controlling for age and school are in parenthesis. * $p < .05$, ** $p < .01$.

5.3 Differences in children's symptom scores by teachers' ratings

In order to investigate the small but significant relationship between teachers' ratings and child-reported symptom scores further, teachers' anxiety ratings were temporarily treated as categorical variables, and an analysis of covariance was carried out to compare mean child SCAS scores by 'group' (teachers' 5 ratings). Because year group and school were shown to be significantly associated with children's self-reported symptoms in chapter 3, these variables were entered as covariates. Children's SCAS scores differed significantly according to the anxiety rating assigned to them by their teacher (see Table 11 for descriptive statistics and ANCOVA results) and a test confirmed linearity ($F(1,1330) = 28.03$, $p < .001$). Post-hoc tests (Bonferonni) indicated that children assigned a teacher anxiety rating of '1' had significantly lower SCAS scores than children assigned a '3', '4' or '5'. Children assigned a '2' also had significantly lower SCAS scores than those assigned a rating of '3', '4' or '5'. The size of the effect was small however. At 38.06, the mean SCAS total score for children assigned the highest anxiety rating (5) by their teacher was only slightly higher than the mean score for all children (31.80);

whereas children with the highest 20% of SCAS scores had self-reported SCAS totals ranging from 50 and higher, and a mean SCAS score of 61.6.

An analysis of covariance comparing mean child CSI scores by group (teachers' 5 ratings), with year group and school entered as covariates, was also significant. Post-hoc tests (Bonferonni) revealed that children given a somatic rating of '1' had significantly lower CSI scores than children assigned a score of 2, 3, 4 or 5. Children given a somatic rating of '2' also had significantly lower CSI scores than children given a '4'. Once again, a test confirmed linearity ($F(1, 1322) = 36.48, p < .001$).

Table 11. Child-reported anxiety and somatic symptom scores by teachers' ratings: Descriptive statistics and ANCOVA results

Teachers' anxiety rating	SCAS scores			Teachers' somatic rating	CSI scores		
	mean	SD	range		mean	SD	range
1 (n = 341)	28.70	17.97	0 - 87	1 (n = 533)	17.63	13.25	0 - 72
2 (n = 397)	29.63	18.67	0 - 92	2 (n = 376)	20.36	14.90	0 - 70
3 (n = 318)	34.77	20.51	0 - 110	3 (n = 231)	22.50	15.28	0 - 72
4 (n = 199)	33.85	19.42	0 - 87	4 (n = 123)	24.84	14.69	0 - 68
5 (n = 88)	38.06	19.32	0 - 103	5 (n = 72)	23.70	17.18	0 - 72
$F(4, 1321) = 9.93, p < .001, n^2_p = 0.03$				$F(4, 1313) = 11.31, p < .001, n^2_p = 0.03$			

The same tests were carried out using parent-reported SCAS scores (see Table 12). Although parent-reported SCAS scores increased as teachers' anxiety ratings increased, these differences were not significant, probably owing to the smaller sample size (only a quarter of the parents in the three schools where parent data were collected returned questionnaires, n = 144) and small numbers in the higher groups. The mean score among the few children assigned a '5' is approximately 50% higher than those assigned a '2', '3' or '4'. Parent-reported CSI scores did vary significantly by teachers' somatic ratings, but perhaps because of their conservative nature, Bonferroni post-hoc tests did not reveal significant differences between individual groups. Again, linearity was confirmed ($F(1,139) = 10.38, p = .002$).

Table 12. Parent-reported anxiety and somatic symptom scores by teachers' ratings: Descriptive statistics and ANCOVA results

	Parent SCAS scores			Parent CSI scores			
	mean	SD	range	Teachers' somatic rating (n = 144)	mean	SD	range
Teachers' anxiety rating (n = 144)							
1 (n = 64)	13.16	9.67	0 - 43	1 (n = 81)	4.74	6.01	0 - 32
2 (n = 35)	16.03	16.95	3 - 78	2 (n = 33)	5.03	7.00	0 - 31
3 (n = 21)	16.62	12.09	2 - 39	3 (n = 19)	9.53	11.63	0 - 49
4 (n = 16)	16.75	14.40	2 - 39	4 (n = 7)	12.00	17.29	0 - 50
5 (n = 8)	23.50	9.61	2 - 65	5 (n = 4)	11.50	4.65	0 - 17
$F(4, 134) = 1.29, p = .28, n^2_p = 0.04$				$F(4, 137) = 3.02, p = .02, n^2_p = 0.08$			

5.4 Correlations by child gender and age

In order to assess whether there was greater agreement between child-reported symptom scores and teachers' ratings for girls than boys, or among certain age groups, Spearman's rho correlation coefficients were calculated separately for boys and girls, and for children in different year groups (see Table 13). Correlation coefficients were generally low, ranging from .09 to .23, and did not differ significantly by child gender for either anxiety (z difference = -1.31, $p = .19$) or somatic symptoms (z difference = .19, $p = .85$). Correlation coefficients did not differ by year group for either anxiety or somatic symptoms (all $ps \geq .09$).

Table 13. Spearman's rho correlation coefficients between teachers' ratings and child-reported symptom scores, by child gender and age

	Correlation coefficient (teacher anxiety rating and child SCAS)	Correlation coefficient (teacher somatic rating and child CSI)
Child Gender		
All male	.12** (.13**)	.18** (.18**)
All female	.17** (.20**)	.15** (.17**)
Child Age		
All year 3	.13* (.15*)	.13* (.14*)
All year 4	.22** (.22**)	.23** (.23**)
All year 5	.17** (.16*)	.22** (.19**)
All year 6	.09 (.09)	.12* (.12*)

Note. Partial correlations are in parenthesis. For correlations by gender, partial correlations control for year group and school. For age, partial correlations control for school. * $p < .05$, ** $p < .01$.

Spearman's rho correlation coefficients by gender and age were also calculated between the smaller number of parent-reported symptom scores and teachers' ratings. Correlations were slightly higher for parent data, and significant for girls, but not boys (see Table 14), although the difference in the size of the associations between the genders did not reach significance for either anxiety (z difference = $-.49$, $p = .63$) or somatic symptoms (z difference = $-.12$, $p = .90$). Associations between teachers' anxiety ratings and parent-reported SCAS scores were similar among the different year groups; however parent-reported CSI scores had higher correlation coefficients with teachers' somatic symptom ratings among children in year 5 and 6 than in years 3 and 4. Probably because of the small sample sizes, the difference between correlation coefficients between year 4 ($n = 36$) and year 5 ($n = 47$) did not quite reach significance (z difference = -1.85 , $p = .06$).

Table 14. Spearman's rho correlation coefficients between teachers' ratings and parent-reported symptom scores, by child gender and age

	Correlation coefficient (parent SCAS)	Correlation coefficient (parent CSI)
Child Gender		
All male	.14 (.18)	.20 (.23)
All female	.22* (.26*)	.23* (.25*)
Child Age		
All year 3	.23 (.24)	.02 (.05)
All year 4	.23 (.16)	.01 (.01)
All year 5	.19 (.23)	.41** (.41*)
All year 6	.19 (.19)	.38 (.40)

Note. Partial correlations are in parenthesis. For correlations by gender, partial correlations control for year group and school. For correlations by age, partial correlations control for school. * $p < .05$, ** $p < .01$.

5.5 Correlations by anxiety subtype

One of the central aims of this thesis was to explore how teachers judge children as anxious, and what information they are using to make these judgements. In the next chapter, analysis of the qualitative data addressing this question is reported: firstly from the rating forms, on which teachers were given space to describe why they nominated certain children as having 'debilitating' levels of symptoms, and secondly from the ten qualitative semi-structured interviews that were conducted

with teachers. In the current chapter, the relationships the various SCAS subscale scores have with teachers' anxiety ratings are reported. Table 15 shows Spearman's rho correlation coefficients between teachers' 1 – 5 anxiety ratings and children's self-reported SCAS subscale scores, and correlations between teachers' 1 – 5 anxiety ratings and parent-reported SCAS subscales scores.

Although teachers' anxiety ratings were more strongly associated with children's self-reported social phobia/panic agoraphobia scores than physical injury fear scores (see Table 15), these differences were not great and did not reach significance (z difference = -1.57, p = .12). When the same comparisons were carried out using parent-reported anxiety scores, the generalised anxiety subscale score was the only subscale to correlate significantly with teachers' ratings. The correlation was significantly stronger than for the obsessive-compulsive symptoms subscale (z difference = 2.10, p = .04).

Table 15. Spearman's rho correlation coefficients between teachers' anxiety ratings and child/parent-reported anxiety subtype scores

	Correlation coefficient (Child SCAS subtypes)	Correlation coefficient (Parent SCAS subtypes)
SCAS subscales		
Panic Agoraphobia	.13** (.14**)	.13 (.13)
Separation Anxiety	.10** (.11**)	.14 (.16)
Social Phobia	.13** (.14**)	.13 (.16)
Physical Injury Fears	.07** (.08**)	.09 (.10)
Obsessive-compulsive	.11** (.12**)	.04 (.04)
Generalised Anxiety	.12** (.13**)	.29** (.28*)

Note. Partial correlations, controlling for year and school, are in parenthesis. * p < .05, ** p < .01.

It was hypothesised that there would be a stronger association between teachers' somatic ratings and certain items on the CSI. Specifically it was theorised that items relating to headaches and patterns of symptoms relating to abdominal pain would be most strongly associated and items relating to numbness and weakness would be most weakly associated. Once again, the non-parametric Spearman's rho correlation was used, this time to assess the relationship between individual CSI items (which ranged from 0 – 4) and teachers' ratings (1-5). Against prediction, the

CSI item most strongly associated with teachers' somatic ratings was 'feeling weak in parts of your body', ($r_s = .137, p < .001$), although it was closely followed by 'headaches' ($r_s = .135, p < .001$). There was only one CSI item not significantly associated with teachers' somatic ratings: 'loose (runny) poo or diarrhoea', ($r_s = .03, p = .27$). This item was significantly more weakly correlated with teachers' somatic ratings than the item relating to 'feeling weak in parts of your body' (z difference = 2.76, $p = .01$) and 'headaches' (z difference = 2.71, $p = .01$).

Among the parent-reported CSI items, the symptom most strongly related to teachers' somatic ratings was 'feeling faint or dizzy', ($r_s = .31, p < .001$). Seven other items were significantly associated with teachers' somatic ratings, with correlations ranging from $r_s = .28$ to $r_s = .21$: 'trouble getting your breath', 'feeling like you might be sick or having an upset tummy', 'being sick or throwing up', 'pain in your stomach', 'your heart beating too fast', 'food making you feel sick' and 'headaches'. The item most poorly associated with teachers' somatic ratings was 'numbness or weakness in parts of your body' ($r_s = -.03, p = .70$) closely followed by 'feeling weak in parts of your body' ($r_s = .04, p = .60$).

5.6 Correlations between teachers' ratings and children's self-reported self-esteem and happiness

Partly driven by the weak correlations between self-/parent-reported symptoms and teachers' ratings, a post-hoc decision was taken to investigate whether other aspects of the questionnaire, namely the six filler items on the SCAS and the 'happiness' scale, included for the purpose of overcoming a negative bias present in some items on the SCAS and CSI, showed a stronger relationship with teachers' anxiety and somatic ratings.

There was a small but significant negative correlation between children's scores on the six SCAS 'filler' items measuring self-esteem and teachers' anxiety ratings ($r_s = -.16, p < .001$), and a small but significant negative correlation between children's self-esteem scores and teachers' somatic ratings ($r_s = -.14, p < .001$). Similarly, there was a small but significant negative correlation ($r_s = -.14, p < .001$) between children's scores on the happiness scale and teachers' ratings of children's anxiety,

and a small but significant positive correlation between children's happiness scores and teachers' ratings of children's somatic symptoms ($r_s = .13, p < .001$). The size of these associations was therefore similar to those between children's total SCAS/CSI scores and teachers' ratings.

5.7 Regression analyses predicting teacher ratings

Hierarchical regression analyses were conducted to assess the relative contribution of different child-reported anxiety subtypes and other significant predictors, to teachers' anxiety and somatic ratings. There are some acknowledged limitations to the use of regression analysis here. First, non-parametric correlations were used in the previous section because teachers' ratings are limited to a 1-5 scale. While the use of non-parametric tests is ideal for this sort of data, the use of parametric regression analysis here was considered acceptable on the basis that the underlying concepts (of anxiety and somatic symptoms) are continuous and the intervals between points are equal. Parametric (Pearson's) correlations produced almost identical sized coefficients to the non-parametric tests. Second, by definition, teachers' ratings of pupils' levels of anxiety and somatic symptoms are clustered within classes. Multilevel linear models which address the similarity in scores within clusters (in this case, school classes) were not considered appropriate here, because teachers in all classes (and in all schools, year groups etc) were instructed to make use of all five anxiety ratings on their class, circumventing any tendency to assign children in their class similar scores. After careful consideration it was decided that linear multiple regression was the best and clearest way to answer the questions at hand, although the results must be interpreted with caution.

Checks were carried out before interpreting results of each analysis. None of the variables correlated with each other above $r = .66$ and all variance inflation factor (VIF) values were considerably below 10, indicating that multicollinearity was not a concern. Examination of standardised residuals and Cook's distance indicated that no outliers were unduly influencing either of the regression models (the maximum Cook's distance across both models was .02). In both analyses the Durbin-Watson statistic was close to two, indicating the assumption of independent errors had been met. Histograms and normal probability plots of standardised residuals

suggested that residuals were reasonably normally distributed, although with a slightly positive skew. This was deemed acceptable because of the large sample sizes ($n = 1278$ and $n = 1272$ respectively). Positive skews remained following transformations (log and square root) so data were not transformed. Scatter plots indicated homogeneity of variance in both models.

For the first analysis, teachers' anxiety ratings were the outcome variable (see Table 16). In step one, children's SCAS subscale scores were entered as separate variables, making a small but significant contribution to the model ($R^2 = .03$, $F(6, 1271) = 6.61$, $p < .001$). As can be seen in the table, panic and agoraphobia was the only subscale score to significantly predict teachers' anxiety ratings. Two additional variables were entered in step 2: the SCAS 'filler' subscale score, measuring self-esteem, and children's total happiness scores. This led to a significant improvement in the model (R^2 change = $.03$, $F(3, 1269) = 16.62$, $p < .001$), with both self-esteem and happiness scores independently predicting teachers' ratings. In the final model, panic and agoraphobia scores also remained a significant predictor of teachers' anxiety ratings. Despite identifying three independent predictors, the final model explained just 5.5% of the variance in teachers' anxiety ratings.

Table 16. Hierarchical regression analysis predicting teachers' anxiety ratings from child questionnaire data ($n = 1278$)

	Model 1			Model 2		
	B	Std B	β	B	Std B	β
Social Phobia	.021	.012	.068	.012	.012	.038
Panic Agoraphobia	.023	.010	.097*	.019	.010	.081*
Generalised Anxiety	.017	.013	.055	.016	.013	.054
OCD	.001	.011	.003	.006	.011	.022
Separation Anxiety	-.015	.012	-.051	-.019	.012	-.065
Physical Injury Fears	.007	.012	.020	.011	.012	.029
Self-esteem^a				-.035	.010	-.102**
Happiness				-.044	.013	-.096**
R²	.030			.055		
F change	6.61**			16.62**		

Note. ^a Self-esteem= total score from the 6 'filler' items on the SCAS. * $p < .05$, ** $p < .01$.

For the second analysis, teachers' somatic ratings were the outcome variable (see Table 17). Children's CSI scores were entered in step 1 (see Table 17), making a

significant contribution to the model ($R^2 = .03$, $F(1, 1270) = 38.01$, $p < .001$). Children's SCAS subscale scores were entered in step 2, making a small but significant improvement to the model (R^2 change = $.01$, $F(6, 1264) = 2.50$, $p = .021$). Children's generalised anxiety subscale scores were the only SCAS subscale score to significantly predict teachers' somatic ratings; however the contribution of children's separation anxiety scores bordered significance ($p = .057$) in an unexpected direction. In step 3, children's self-esteem and happiness scores again significantly improved the model (R^2 change = $.02$, $F(6, 1262) = 12.50$, $p < .001$). In this final model, children's CSI scores, generalised anxiety subscale scores, separation anxiety subscale scores, self-esteem and happiness scores all independently predicted teachers' somatic ratings. The final model accounted for around 6% of the variance in teachers' somatic ratings.

Table 17. Hierarchical regression analysis predicting teachers' somatic ratings from child questionnaire data ($n = 1272$)

	Model 1			Model 2			Model 3		
	B	Std B	β	B	Std B	β	B	Std B	β
Total CSI	.014	.002	.170**	.008	.003	.105**	.009	.003	.107**
Panic				.014	.010	.059	.011	.010	.047
Agoraphobia									
Generalised				.033	.013	.109*	.032	.013	.106*
Anxiety									
Social				.007	.012	.024	0.00	.012	.000
Phobia									
OCD				.010	.011	-.035	-.006	.011	-.021
Separation				-	.012	-.075	-.025	.011	-.087*
Anxiety				.022					
Physical				.009	.012	.026	0.12	.012	.033
Injury Fear									
Self-esteem							-.025	.010	-.075*
Happiness							-.043	.013	-.096*
R²	.029			.040			.059		
F change	38.01**			2.50*			12.50**		

Note. * $p < .05$, ** $p < .01$.

5.8 Self-reported anxiety scores in nominated children

As described in the methodology section, in addition to rating pupils' symptoms on a 1-5 scale, teachers were asked to nominate a maximum of three children they believed had 'debilitating' levels of anxiety. An independent samples t-test was carried out to see whether there was a significant difference in child-reported SCAS scores between children identified by their teachers as having 'debilitating' levels of anxiety, and those who were not identified as such. There was no significant difference in mean child SCAS scores between the 83 children identified as having debilitating levels of anxiety (and who completed SCAS questionnaires, as one child identified as such did not complete the full SCAS), ($M = 31.76$, $SD = 19.45$) and the 1255 who were not ($M = 32.25$, $SD = 17.81$; $t(1336) = -.223$, $p = .82$). There was also no significant difference in any of the SCAS subscale scores among children identified as having debilitating levels of anxiety by their teacher (all $ps > .61$). Children identified by their teacher as having debilitating levels of anxiety did have significantly lower scores on the six SCAS filler items measuring 'self-esteem' ($M = 13.17$, $SD = 3.38$) than those not identified as such ($M = 10.99$, $SD = 4.26$; $t(86.61) = 5.53$, $p < .001$, $d = 0.57$). They also had significantly lower happiness scores ($M = 12.03$, $SD = 2.79$ than those not identified as anxious by their teacher ($M = 13.04$, $SD = 2.64$; $t(1286) = 3.29$, $p = .001$), $d = 0.37$).

According to the authors of the SCAS, scores greater than one standard deviation above the mean (for that child's gender and age group e.g., 8-11 years) are indicative of sub-clinical or elevated levels of anxiety, although as Spence (1997) points out, some clinicians prefer to use a criterion of 1.5 standard deviations above the mean to provide an indication of anxiety at a clinical level (although further investigation in the form of a clinical interview is necessary for a diagnosis to be given). As a general indicator of teachers' ability to identify children who potentially have 'debilitating' levels of anxiety, it was thought useful to see how many children scoring 1.5 standard deviations above the mean on the SCAS were also identified by their teacher as having 'debilitating' levels of symptoms.

In the current study 121 children (9%) had SCAS scores of above 1.5 standard deviations above the mean for their gender¹⁰. Teachers were instructed to select up to three children who they believed had debilitating levels of symptoms. Because in some classes more than three children scored above 1.5 standard deviations above the mean for their gender on the SCAS, teachers could only identify a possible 88 of the 121 children reaching this threshold. Out of these 88 children, teachers only identified seven as having debilitating levels of anxiety, yielding a sensitivity rate of 7.95%. Interestingly, six of these seven children were boys and only one was a girl.

5.9 Parent-reported anxiety scores in nominated children

Among the 144 children in three of the seven schools whose parents also completed questionnaires, only seven were identified by their teacher as having 'debilitating' levels of anxiety. There was not a significant difference in parent-reported SCAS scores between these seven ($M = 19.00$, $SD = 9.63$) and the 137 children who were not identified as such by their teacher ($M = 15.15$, $SD = 12.89$; $t(142) = -.78$, $p = .44$).

Data from these 144 participants were also analysed to see how many children identified by their teacher as having debilitating levels of anxiety scored greater than 1.5 standard deviations above the mean for their gender on *either* the child SCAS *or* parent SCAS.

Five of the 60 boys whose parents returned questionnaires received a score above 1.5 standard deviations above the mean (for boys) on the parent SCAS. One of these five boys *also* self-reported a score of 1.5 standard deviations above the mean (for boys) on the child SCAS. Two additional boys self-reported above this criteria on the child SCAS (but not on the parent SCAS). None of these seven boys was identified by their teacher as having debilitating levels of anxiety. Of the seven boys who scored above the cut-off on either the parent SCAS or the child SCAS, none was given an anxiety rating of '5' by their teacher. One was given a '4', two boys were given a '3', two a '2' and two a '1'.

¹⁰ A total of 61 (9.4%) of the 650 boys in this study had SCAS scores reaching this threshold (total SCAS > 57); whereas 60 of the 676 girls (8.9%) had SCAS scores reaching this threshold (total SCAS > 64).

Seven of the 84 girls whose parents returned questionnaires received a score above 1.5 standard deviations above the mean (for girls) on the parent SCAS. Three of these girls *also* self-reported a score above 1.5 standard deviations above the mean on the child SCAS. An additional eight girls self-reported scores above the mean (for girls) on the child SCAS (but not on the parent SCAS). Of these 15 girls, one was identified by their teacher as having debilitating levels of anxiety. This girl scored above the cut-off on the parent SCAS but not the child SCAS. Of these 15 girls, three were assigned an anxiety rating of '5' by their teacher, one a '4', four a '3', three a '2' and four a '1'.

In cases where parents returned questionnaires, no class had more than three children reaching cut-off on one of the measures so it was technically possible for all 22 children to be identified as having debilitating levels of symptoms by their teacher.

5.10 Self-reported somatic scores in nominated children

An independent samples t-test was also carried out to see whether there was a significant difference in self-reported CSI scores between children identified by their teacher as having 'debilitating' levels of somatic symptoms, and those not identified as such. In this case the 63 children identified as having debilitating levels of somatic scores by their teacher (and who also completed the child CSI scale, as one did not) did have significantly higher CSI total scores ($M = 24.68$, $SD = 16.49$) than those who were not identified as such ($M = 20.02$, $SD = 14.51$; $t(1328) = -2.45$, $p = .01$, $d = .30$) but the effect size was small. Children identified by their teacher also had significantly lower scores of 'self-esteem' ($t(65.87) = 2.32$, $p = .02$, $d = .33$) and happiness scores ($t(1286) = 2.13$, $p = .04$, $d = .29$) but not significantly higher SCAS total or subscale scores (all $ps > .12$).

Overall 111 children had scores above 1.5 standard deviations above the mean for their gender on the CSI¹¹. Again, because in some classes more than three children scored above 1.5 standard deviations above the mean for their gender on the CSI,

¹¹ 53 (8.2%) of the 646 boys in this study had scores above this threshold (total CSI > 42) while 58 of the 672 girls (8.6%) had scores above this threshold (total CSI > 43).

teachers could only identify a possible 86 of the 111 children reaching this threshold. Teachers identified eight of these 86 children as having 'debilitating' levels of somatic symptoms (defined as physical symptoms without an obvious physical cause), yielding a sensitivity rate of 9.3%. Five of these children were boys and three were girls.

5.11 Parent-reported somatic scores in nominated children

Among the 144 children whose parents returned questionnaires, only six were identified by their teacher as having 'debilitating' levels of somatic symptoms. These children did not have significantly higher parent-reported CSI scores ($M = 6.00$, $SD = 5.10$) than the 138 not identified as such ($M = 5.98$, $SD = 8.28$; $t(142) = -.01$, $p = 1.00$).

Once again, data were analysed to see how many children identified by their teacher as having debilitating levels of symptoms scores above 1.5 standard deviations above the mean for their gender on *either* the child SCAS or parent SCAS.

Five of the 60 boys whose parents returned questionnaires received a score of above 1.5 standard deviations above the boy mean on the parent CSI. One of these boys also self-reported a score of above 1.5 standard deviations above the boy mean on the child CSI. An additional three boys self-reported a score of above 1.5 standard deviations above the mean on the child CSI. Of these eight boys, none was identified by their teacher as having debilitating levels of somatic symptoms. Of these eight children, none was given a somatic rating of '5' or '4' by their teacher. One was given a '3', five were given a '2' and two were given a '1'.

Five of the 84 girls whose parents returned questionnaires received a score of above 1.5 standard deviations above the girl mean on the parent CSI. Three of these five girls also self-reported scores above the girl mean on the child CSI. An additional four girls self-reported scores above this cut-off on the child CSI. Of these nine girls, none was identified by their teacher as having debilitating levels of somatic symptoms. Of these nine, none was given a rating of '5' by their teacher, one was given a '4', three were given a '3', one a '2' and four a '1'.

In one class, four children scored above the cut-off on either the parent or child CSI and so teachers could technically only have identified 15 of the 16 children who reached this threshold; however as described above, they identified none of them.

5.12 Correlations by teacher characteristics

Teacher characteristics were assessed to see whether they were associated with agreement between children’s self-reported scores and teachers’ ratings.

Unfortunately, only 51 teachers took part in this study, and so there is a somewhat limited scope for investigating individual differences in teachers. Nevertheless, hypothesised individual differences are explored in the following section and in the next chapter. Correlations between teachers’ anxiety ratings and children’s self-reported SCAS scores for individual teachers ranged from at their lowest, $r_s = -.30$, to $r_s = .50$ at their highest. Teachers’ somatic ratings and children’s self reported CSI scores encompassed a similar range, from $r_s = -.27$ to $r_s = .53$. As described in the methodology section, for the purposes of investigating factors in teachers associated with better or poorer sensitivity to pupils’ symptoms, the Spearman’s rho correlation coefficient between an individual teacher’s anxiety ratings and their pupil’s total SCAS scores was calculated, and then converted into Fisher’s z scores so that they followed a normal distribution. The same procedure was followed for somatic symptoms. From now on these correlation coefficients will be referred to as ‘sensitivity scores’. Table 18 presents mean Spearman’s rho correlation coefficients between teachers’ ratings and children’s and parents’ SCAS and CSI scores by teachers’ demographic characteristics.

Table 18. Anxiety and somatic symptom sensitivity scores by teacher gender and job title

	Teachers’ anxiety sensitivity scores (M, SD)	Teachers’ somatic sensitivity scores (M, SD)
Teacher Gender		
Male (n = 10)	.26 (.22)	.22 (.17)
Female (n = 41)	.13 (.21)	.16 (.21)
Job Title		
NQT ^a (n = 3)	.16 (.22)	.19 (.11)
Class Teacher (n = 40)	.15 (.22)	.19 (.21)
Senior Teacher (n = 6)	.22 (.18)	.06 (.17)

Note. ^aNQT = Newly Qualified Teacher

An independent samples t-test revealed a trend for higher anxiety sensitivity scores among male teachers than female teachers ($t(49) = 1.84, p = .07$), but no significant difference in somatic sensitivity scores between genders ($t(49) = .72, p = .48$). There were very few newly qualified teachers ($n = 3$) and few in senior positions ($n = 6$) making comparisons by status underpowered, but no trend by status towards significant differences was found for either anxiety ($F(2, 46) = .328, p = .72$) or somatic sensitivity scores ($F(2, 46) = 1.12, p = .34$).

At the time the scales were completed in each school, teachers at the school had been in charge of their class for the same number of weeks in that year, making it impossible to isolate familiarity with pupils from any other school effects on sensitivity scores. That said, there was no significant difference in teachers' anxiety ($F(6, 44) = 1.45, p = .22$) or somatic sensitivity scores ($F(6, 44) = 1.87, p = .12$) associated with school/the number of weeks in charge of their current class.

In order to investigate whether teaching experience was associated with teachers' sensitivity scores, a correlation coefficient was produced between teachers' sensitivity scores and the number of years teachers had been in the teaching profession. There was no association between years in the teaching profession and either anxiety ($r = -.17, p = .25$) or somatic sensitivity scores ($r = -.07, p = .65$). There was also no significant association between teachers' age and either anxiety ($r = .12, p = .43$) or somatic ($r = -.04, p = .80$) sensitivity scores.

5.13 Summary

The results presented in this chapter indicate a small but significant positive association between teachers' reports of children's anxiety and children's self-reported symptoms, and a similar sized relationship for somatic symptoms. The associations between teachers' ratings and pupils' self-reported symptom scores were similar across children's gender and age; although parents reported slightly better concordance on both types of symptoms for girls than boys, and better concordance on somatic symptoms for older children.

Generally, there were similar levels of agreement between children's reports of different sorts of anxiety and somatic symptoms and teachers' ratings. In a multiple regression analysis, children's panic and agoraphobia was the only anxiety subtype to significantly predict teachers' ratings. Children's self-reported generalised anxiety made a significant contribution to the variance in teachers' somatic ratings, over and above children's self-reported somatic symptoms, while, unexpectedly, children's separation anxiety made a significant, negative contribution. Children's self-esteem and happiness scores, originally included as positive 'filler' items, also made a significant contribution to the variance in teachers' anxiety and somatic ratings, with increased happiness and self-esteem associated with lower ratings. All the significant contributions were small in size.

Children nominated by their teacher as having 'debilitating' levels of anxiety had similar self-reported anxiety levels as those not nominated, and while those nominated by their teacher as having debilitating levels of somatic symptoms *did* have significantly higher self-reported somatic symptom scores, the effect size was small and teachers rarely identified children whose self-reported anxiety *or* somatic scores suggested clinical levels of symptoms.

Chapter 6 Results: Teachers' psychological health, wellbeing and empathic accuracy

This chapter reports quantitative data in response to the third overarching hypothesis outlined in Chapter 3. It was hypothesised that teachers' mental wellbeing, interest in and feelings of responsibility towards pupils' emotional wellbeing would be associated with their sensitivity to pupils' anxiety and somatic symptoms. The first part of this chapter reports findings from this study's 'Teacher Wellbeing' questionnaire, which included three well validated scales addressing different aspects of psychological wellbeing. These were the short version of the Depression Anxiety Stress scale (Loviband & Loviband, 1995); the Warwick Edinburgh Mental Wellbeing scale (Stewart-Brown et al., 2011; Tennant et al., 2007); the revised Obsessive-Compulsive Inventory (Foa et al., 2002), and a sources of stress scale. Wherever possible, teachers' scores were compared to published norms. This chapter goes on to present findings on the association between teachers' psychological wellbeing and their sensitivity to the levels of psychological distress experienced by pupils. In addition to questions relating to their wellbeing, teachers' questionnaires also featured a series of questions about their role in, and attitudes towards, pupils' emotional wellbeing. In the final part of this chapter, the association these attitudes have with teachers' mental health and sensitivity to pupils' emotional wellbeing is reported.

6.1 Depression, anxiety and stress

A total of 50 primary school teachers, from seven schools (female = 41, male = 9) completed the 'Teacher Wellbeing' questionnaire. The mean score on the short form version of the Depression Anxiety Stress scale (DASS-21) was 16.7 (SD = 11.42) and scores ranged from 3 to 47. Men's scores (M = 17.67, SD = 10.78) were not significantly different from women's scores (M = 16.49, SD = 11.67: $t(48) = .28, p = .78$), and scores did not significantly correlate with age ($r = .10, p = .49$). Figure 5 shows that DASS-21 scores were somewhat positively skewed.

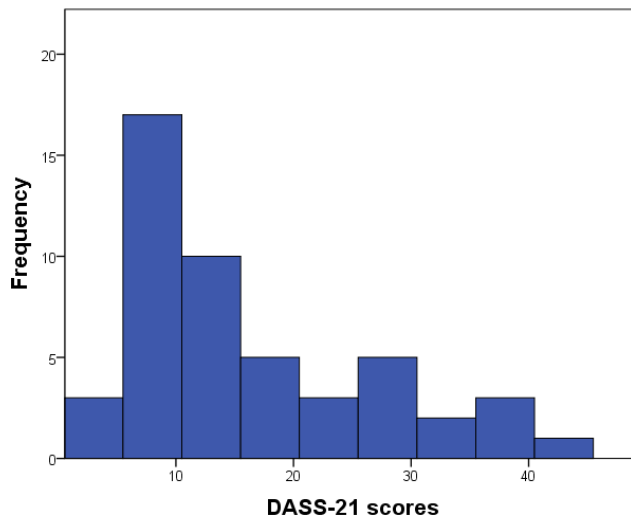


Figure 5. Teachers' Depression Anxiety Stress Scale (DASS-21) scores: Frequency distribution (N = 50)

Henry and Crawford (2005) reported a considerably lower mean score of 9.43 (SD = 9.66) for the DASS-21, using a sample of 1794 people (979 female, 815 male) broadly representative of the general adult United Kingdom population, with an age range of 18-91 years (mean age = 41 years). Therefore our findings indicate that teachers have elevated levels of depression, anxiety and stress compared to the general population. A possible alternative explanation of the differences in scores is the greater proportion of women in the current study. Henry and Crawford (2005) do not report normative data by gender on the DASS-21, but Crawford and Henry (2003) report significantly higher scores in women compared to men on the original 42 item version of the DASS. The DASS-42 mean score they report for women, at 19.9, is lower than would be expected from our sample, however, given that it includes double the number of items.

Descriptive statistics for the three scales, in comparison to those of Henry and Crawford (2005) can be seen in Table 19. Despite scores being much higher for each scale in the current study, the relationship between scores is similar in both studies, with anxiety scores being the lowest, followed closely by depression scores; and finally by stress scores, which are approximately twice as high as the depression scores (the DASS-21 features seven items for each subscale so this is a fair comparison). There was no significant difference in the current study between men

and women on any of the subscales, and there was no significant correlation with age on any of the three subscales.

Table 19. Descriptive statistics for teachers' DASS-21 depression, anxiety and stress subscale scores in this study in comparison to Henry and Crawford (2005)

		Current study (N = 50)	Henry & Crawford, 2005 (N = 1794)
Depression	M (SD)	4.44 (4.16)	2.83 (3.83)
	Range	0 - 16	0 - 21
Anxiety	M (SD)	3.94 (3.30)	1.88 (2.95)
	Range	0 - 12	0 - 20
Stress	M (SD)	7.92 (4.37)	4.73 (4.20)
	Range	1 - 20	0 - 21
Total	M (SD)	16.70 (11.42)	9.43 (9.66)
	Range	3 - 47	0 - 61

Loviband and Loviband (1995) specify cut-off scores for conventional severity labels for the DASS-42 (mild, moderate, severe and extremely severe). They argue that because the DASS-21 includes the full range of symptoms measured by the DASS-42, doubling the DASS-21 scores is equivalent to calculating scores from the full version, and this was confirmed by Henry and Crawford (2005) who compared data on the DASS-42 to the DASS-21 doubled and found nearly identical scores.

Therefore it was deemed acceptable to double teachers' scores on DASS subscales to investigate the distribution of scores among the severity labels. As can be seen in Table 20, approximately half of teachers fell into the 'normal' range for anxiety and stress scores, with a slightly greater proportion (66%) falling into the 'normal' range for depression scores. Between 12% and 21% of teachers' scores fell into the severe/extremely severe range for the three different subscales.

Table 20. Distribution of teachers' adjusted DASS depression, anxiety and stress scores (according to Loviband and Loviband's (2005) severity cut-offs).

	Normal	Mild	Moderate	Severe	Extremely severe
Depression (n/%)	33 (66%)	4 (8%)	7 (15%)	5 (10%)	1 (2%)
Anxiety (n/%)	27 (54%)	5 (10%)	8 (16%)	7 (15%)	3 (6%)
Stress (n/%)	28 (56%)	5 (10%)	10 (20%)	4 (8%)	3 (6%)

6.2 Worry

The anxiety subscale of the DASS focuses only on physiological aspects of anxiety (e.g. trembling, heart racing). It was therefore decided that two extra items be included to measure cognitive aspects of anxiety, in this case, worry. The following two items were taken from the GAD-7 (Spitzer et al., 2006), a screening measure for generalised anxiety disorder: 'I was not able to stop or control worrying' and 'I worried too much about different things'. Seven of the 50 teachers (14%) said they felt this 'very much, or most of the time' and the same percentage (7/50: 14%) said they felt this way 'a considerable degree, or a good part of the time'. Around a quarter (13/50: 26%) said they felt unable to stop or control worrying 'to some degree, or some of the time' meaning nearly half of the teachers (23/50: 46%) reported that they never felt unable to stop or control worrying. Teachers were even more likely to report worrying too much about different things. Only around a quarter (12/50: 24%) said they did not do this at all. Over a third (19/50: 38%) reported that this had happened, 'to some degree, or some of the time'. Nearly a quarter (11/50: 22%) said this happened, 'a considerable degree, or a good part of the time' and eight of the teachers (16%) said this happened 'very much, or most of the time'. When combined, these two items correlated strongly with the DASS stress ($r = .74, p < .001$) anxiety ($r = .72, p < .001$) and depression ($r = .68, p < .001$) subscales, providing convergent validity for the items.

6.3 Obsessive-compulsive symptoms

The Obsessive-Compulsive Inventory revised (Foa et al., 2002) is a short form of the Obsessive-Compulsive Inventory (Foa, Kozak, Salkovskis, Coles, & Amir, 1998). The mean score among the 50 teachers was 11.04 (SD = 8.25) with scores ranging from 1 to 28, with a single outlier scoring 38. Figure 6 shows that the scale scores had a somewhat positive skew.

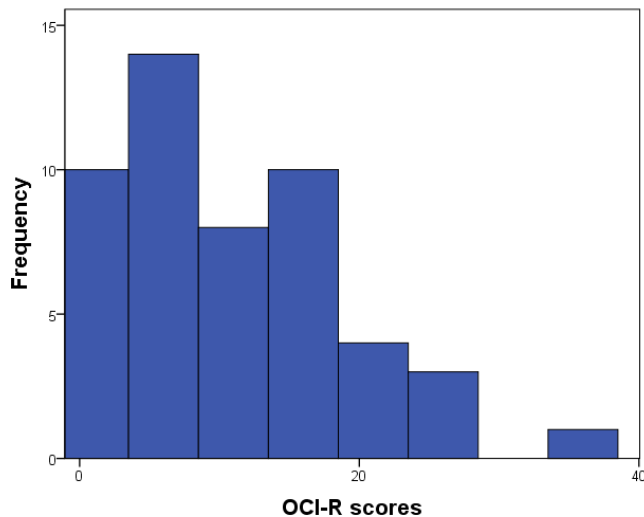


Figure 6. Teachers' Obsessive-Compulsive Inventory revised (OCI-R) scores: Frequency distribution (N = 50)

When validating this short version of the Obsessive-Compulsive Inventory, Foa et al. (2002) compared scores between adults diagnosed with OCD and a sample of 477 non-anxious controls, all psychology students at the University of Delaware. The mean scores reported here are considerably lower than among Foa et al.'s control group (M = 18.82, SD = 11.10). One possible explanation for the disparity in scores is the different age groups of the participants: in the current study the mean age of teachers was 36.41 years old, with a range from 22 to 58 years (SD = 9.36 years), which is considerably older than the age of undergraduate students, and it was noted that OCD symptoms tended to decline with age ($r = .28, p = .055$). There was no trend towards differences between the nine male and 41 female teachers on their obsessive-compulsive symptom scores. Foa et al. (2002) recommend a cut off score of 21 to indicate a clinical diagnosis of OCD; in this study 6 teachers (12%) scored 21 or more.

6.4 Wellbeing

Teachers scored a mean of 48.66 (SD = 7.28) on the Warwick Edinburgh Mental Wellbeing Scale (WEMWBS), with scores ranging from 32 to 63. Teachers' scores do not appear to deviate from the population norms reported by Stewart-Brown and Janmohamed (2008), who reported a mean score of 50.7, based on data from 1749 participants in two population surveys: The Scottish Health Education Population Survey 2006 (Wave 12) in a random sample of 16-74 year olds (Gosling, 2008) and

the ‘Well? What do you think?’ survey, on a random sample of the Scottish population aged 16 plus (Braunholtz et al, 2007). Like Stewart-Brown and Janmohamed, the current study did not find any indication of differences in scores between men ($n = 9$, $M = 48.22$) and women ($n = 41$, $M = 48.76$), and scores did not correlate significantly with age ($r = -.11$, $p = .46$). The scale scores followed a relatively normal distribution, as displayed in Figure 7.

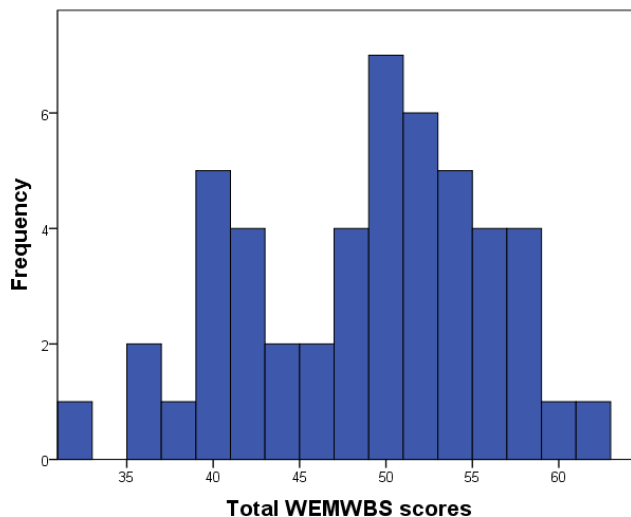


Figure 7. Teachers' scores on the Warwick Edinburgh Mental Wellbeing Scale (WEMWBS): Frequency distribution ($N = 50$)

6.5 Sources of stress

Kyriacou (2001) in the UK identified nine key sources of stress in teachers: teaching pupils who lack motivation, maintaining discipline, time pressures and workload, coping with change, being evaluated by others, dealings with colleagues, administration and management, role conflict and ambiguity, and poor working conditions. Here, these sources of stress were put together as a scale for the first time, with teachers asked to indicate to what extent they agreed that each of these nine items were a source of stress to them, on a Likert scale ranging from ‘not at all’ (0) through to ‘a lot’ (4). In the current study, the scale had a Cronbach’s alpha of .82 and adequate convergent validity (see Table 21) with established measures of psychological wellbeing. The mean total stress score was 16.26 ($SD = 6.50$). Scores ranged from 3 to 29. The most frequently endorsed source of stress was ‘time pressures and workload’. 72% of teachers reported that this was a source of stress ‘quite a bit’ or ‘a lot’. The next biggest source of stress among this sample of

teachers was 'being evaluated by others'. Over half of the teachers (52%) reported that this was a source of stress at least 'quite a bit'. Over a third of teachers also claimed 'teaching pupils who lack motivation' (38%) and 'administration and management' (also 38%) were sources of stress 'quite a bit' or 'a lot'. The least frequently endorsed sources of stress were 'poor working conditions' (78% reported that this was at most 'a little' stressful, while just 6% said it was 'a lot') and 'dealings with colleagues' (50% indicated that this was at most 'a little stressful' and only 2% said this became a source of stress 'a lot').

6.6 The relationship between different aspects of teachers' psychological health and wellbeing

Table 21 presents the correlations between the various measures for teachers. The Warwick Edinburgh Mental Wellbeing scale (WEMWBS) was most strongly negatively associated with the DASS-21 depression subscale. The WEMWBS was least strongly associated with the revised Obsessive-Compulsive Inventory (OCI-R) scores. Similar associations of moderate strength were found between each of the three DASS-21 subscales and the OCI-R. As expected the DASS-21 subscales were all strongly associated with each other, particularly the depression and anxiety subscales. DASS-21 anxiety and stress subscale scores were moderately associated with the WEMWBS. The 'sources of stress' scale was moderately associated with all outcome measures, apart from the OCI-R, with which it had a weaker correlation.

Table 21. Inter-correlations between teachers' psychological health and wellbeing scores

R	DASS-21 ^a	Dep ^b	Anx ^b	Stress ^b	OCI-R ^c	WEMWBS ^d	Worry ^e
DASS-21 ^a							
Depression ^b	.91**						
Anxiety ^b	.91**	.76**					
Stress ^b	.87**	.72**	.68**				
OCI-R ^c	.46**	.40**	.49**	.45**			
WEMWBS ^d	-.73**	-.80*	-.61**	-.56**	-.41**		
Worry ^e	.75**	.68**	.72**	.74**	.59**	-.53**	
Sources of Stress ^f	.52**	.37**	.51**	.47**	.31*	-.55**	.38**

Note. ^aDASS-21 = Depression Anxiety Stress Scale total; ^b Subscale scores of the Depression Anxiety Stress Scale; ^cOCI-R = Revised Obsessive-Compulsive Inventory total; ^dWEMWBS = Warwick Edinburgh Mental Wellbeing Scale total; ^eWorry, as measured by two items from the GAD-7 scale: 'I was not able to stop or control worrying' and 'I worried too much about different things'; ^fSources of Stress = Total score on the sources of stress scale, based on Kyriacou (2001). * $p < .05$, ** $p < .01$.

6.7 The relationship between teachers' psychological health and wellbeing and their sensitivity to levels of anxiety and somatic symptoms in their pupils.

One of the aims of this thesis was to investigate how teachers' psychological wellbeing affects their interactions in the classroom; specifically, their sensitivity to the levels of psychological distress suffered by pupils. It was theorised that there would be a positive association between teachers' sensitivity scores and their levels of depression, anxiety and OCD symptoms at low and medium levels, based on evidence linking mild depression to better judgements of emotional states (e.g., Harkness et al., 2005), because of the hyper-vigilance and attentional bias for threat cues associated with anxiety (e.g. Hirsch et al., 2011), and greater feelings of responsibility towards others and intolerance of uncertainty associated with OCD (Salkovskis et al., 2000; Frost et al., 1997). It was also hypothesised, however, that the burden or cognitive load of very high levels of symptoms would deplete the resources necessary for accurate empathic accuracy, so the association would be curvilinear rather than linear.

As a first step, Pearson's correlation coefficients were produced between scores on measures of wellbeing and teachers' sensitivity scores¹² (see Table 22). The revised Obsessive-Compulsive Inventory (OCI-R) scores showed a small to moderate association with anxiety sensitivity scores. As it was hypothesised that the cognitive burden of very high levels of OCD symptoms might decrease empathic accuracy, the correlation between OCI-R scores and teacher sensitivity scores, was repeated, but this time excluding individuals who scored 21 or above (the recommended clinical cut-off in Foa et al., 2002). Doing so did not improve the correlation with either anxiety sensitivity ($r = .28, p = .065$) or somatic sensitivity ($r = .149, p = .334$). Because there was one outlier in the distribution of obsessive-compulsive scores, a Spearman's rho correlation was also carried out between OCI-R scores and anxiety sensitivity scores. The strength of the non-parametric correlation was similar ($r_s = .28, p = .047$). A small positive association between teachers' anxiety sensitivity scores and their anxiety did not reach significance, and there was no association with teachers' depression scores. There were no significant associations between teachers' psychological wellbeing and their somatic sensitivity scores.

¹² Log transformations were carried out on the DASS-21 and OCD-R scores, to see if they improved the distribution of scores. Histograms and a Kolmogorov-Smirnov test showed that, post – transformation, scores on the DASS-21 still deviated significantly from normality ($D(50) = .126, p = .045$), but the OCD-R scores showed some improvement ($D(50) = .110, p = .185$). Transformed OCD-R scores correlated only very slightly better with teacher anxiety ratings ($r = .34, p = .02$) and not significantly so (z difference = $.16, p = .88$). This non significant effect, combined with a desire not to change the underlying construct being measured (Grayson, 2004) led to a decision to use untransformed scores in analysis.

Table 22. Inter-correlations between teachers' sensitivity scores and their depression, anxiety and obsessive-compulsive scores

R (p)	Anxiety Sensitivity Scores	Somatic Sensitivity Scores
Depression ^a	.08 (.57)	-.09 (.55)
Anxiety ^b	.18 (.20)	-.03 (.82)
OCI-R ^c	.31* (.03)	.11 (.47)

Note. ^aDepression = Depression subscale of the Depression Anxiety Stress Scale; ^b Anxiety = Anxiety subscale of the Depression Anxiety Stress Scale; ^c OCI-R = Revised Obsessive-Compulsive Inventory. * $p < .05$, ** $p < .01$.

In order to explore the relationship between obsessive-compulsive symptoms and anxiety sensitivity scores in more detail, separate correlation coefficients were calculated for each of the OCI-R subscale scores: washing, checking, ordering, obsessions, hoarding and mental neutralising. As feelings of responsibility are particularly characteristic of 'checkers' (Salkovskis et al., 2000), and intolerance to uncertainty has been associated with 'orderers' (Frost et al., 1997) it was predicted that these two factors would be most strongly associated with sensitivity scores. As can be seen in Table 23, the only significant correlation was found between the washing subscale score and anxiety sensitivity ($p = .02$). Although the checking scores were the next most closely associated subtype scores, this association did not reach significance ($p = .09$).

Table 23. Inter-correlations between teachers' sensitivity scores and their obsessive-compulsive subtype scores.

R (p)	Washing	Checking	Ordering	Obsessions	Hoarding	Mental Neutralising
Anxiety sensitivity	.33*(.02)	.25 (.09)	.20 (.20)	.10 (.48)	.19 (.18)	.09 (.54)
Somatic sensitivity	.20 (.16)	-.00 (.98)	.07 (.62)	-.07 (.62)	.23 (.12)	.03 (.85)

Note. * $p < .05$, ** $p < .01$.

The majority of teachers (40/50: 80%) scored '0' on the washing subscale; and so a decision was taken to compare anxiety sensitivity scores between those scoring '0' on this subscale and those who scored ≥ 1 . Although teachers who scored '0' on

this factor had lower anxiety sensitivity scores ($M = .14$, $SD = .21$) than those who scored ≥ 1 ($M = .26$, $SD = .20$), this difference did not reach significance ($t(48) = -1.60$, $p = .12$), perhaps in part due to the small sample size. A box plot (Figure 8), shows that an isolated extreme score is not responsible for the trend towards a difference between the groups.

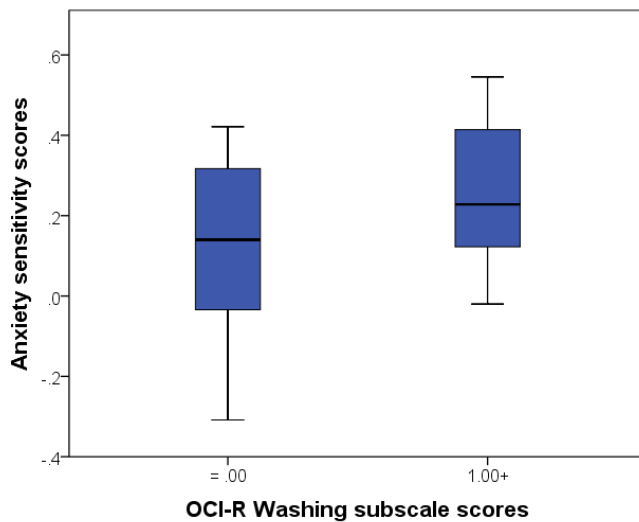


Figure 8. Box plot to compare teachers' anxiety sensitivity scores by their OCI-R 'washing' scores

Loviband and Loviband (1995) specify cut-off scores for normal, mild, moderate, severe and extremely severe levels of depression and anxiety on the depression and anxiety subscales of the DASS, which allowed an investigation of whether mild levels of depression and anxiety were more strongly associated with sensitivity to pupils' symptoms than scores in the normal or severe ranges, as hypothesised. Teachers' scores on the depression and anxiety subscales of the DASS were separately divided into three groups ('normal', 'mild/moderate' and 'severe/extremely severe') based on Loviband and Loviband's (1995) recommendations.

As can be seen in Figure 9 below, there was some support for the hypothesis, but not in a straightforward way. Teachers' anxiety sensitivity scores were higher among individuals with mild/moderate levels of depression symptoms than those with either normal or severe/extremely severe levels of symptoms; but while

individuals with severe/extremely severe levels of depressive symptoms had the lowest somatic sensitivity scores, individuals with mild/moderate and normal scores appeared to have higher levels of somatic sensitivity. In the second histogram, it can be seen that, in line with the hypothesis, teachers with mild/moderate levels of anxiety had higher somatic sensitivity scores than those with normal or severe levels of anxiety; however teachers' anxiety sensitivity scores were lowest among those with normal levels of anxiety, while teachers with mild/moderate and severe/extremely severe levels of anxiety had similar higher scores. A one way ANOVA showed a significant difference in teachers' somatic sensitivity scores by anxiety severity group, ($F(2, 47) = 3.64, p = .034, \eta^2 = 0.13$), with post-hoc tests (Tukey HSD) revealing that individuals with mild/moderate anxiety scores had significantly better somatic sensitivity scores ($M = .29, SD = .11$) than those with severe/extremely severe anxiety scores ($M = .08, SD = .19$). There were no significant differences for teacher's somatic scores by depression severity, or teachers' anxiety sensitivity scores by either anxiety or depression severity (all $ps > .38$).

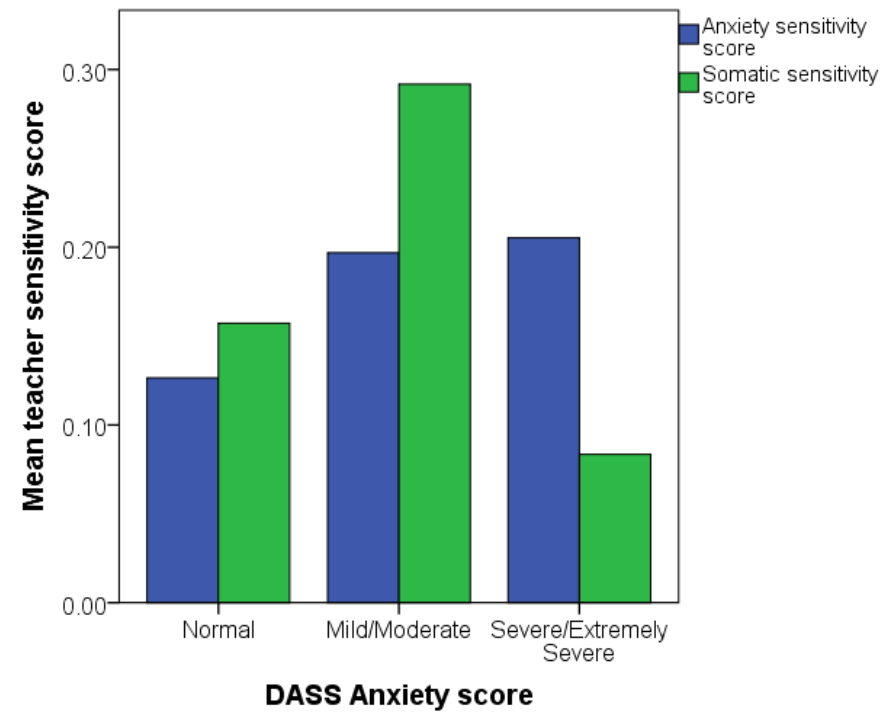
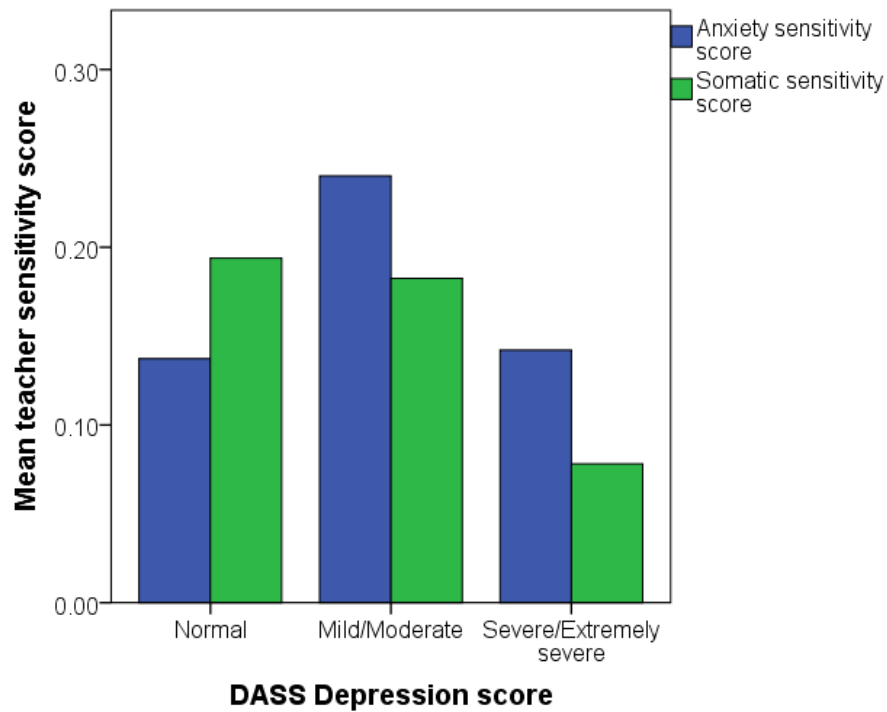


Figure 9. Anxiety and somatic sensitivity scores among 'Normal', 'Mild/Moderate' and 'Severe/Extremely Severe' scorers on the depression and anxiety subscales of the DASS-21.

Scores on other questionnaire measures related to psychological health and wellbeing were also investigated to see whether they offered any additional insights worthy of exploration in future research. As can be seen in Table 24, Pearson’s correlation coefficients did not suggest any significant relationships between these variables.

Table 24. Inter-correlations between teachers’ sensitivity scores and other psychological health and wellbeing scores

R (p)	Anxiety Sensitivity Scores	Somatic Sensitivity Scores
DASS-21 Stress ^a	.18 (.23)	-.04 (.77)
WEMWBS ^b	-.04 (.78)	.09 (.53)
Worry ^c	.09 (.52)	-.17 (.23)
Sources of Stress ^d	-.02 (.91)	.21 (.15)

Note. ^aStress subscale of the DASS-21; ^b WEMWBS = Warwick Edinburgh Mental Wellbeing Scale; ^cWorry as assessed as measured by two items from the GAD-7 scale: ‘I was not able to stop or control worrying’ and ‘I worried too much about different things; ^dSources of Stress = Total score on the sources of stress scale, based on Kyriacou (2001). * $p < .05$, ** $p < .01$.

6.8 The association between teachers’ and children’s psychological health and wellbeing

An unexpected finding was an association between children’s symptom scores and teachers’ psychological wellbeing. Unexpectedly, teachers’ total scores on the Warwick-Edinburgh Mental Wellbeing Scale showed a moderate and significant association with both children’s SCAS and CSI scores (see Table 25). Perhaps unsurprisingly, given their particularly strong association with teachers’ WEMWBS scores, teachers’ scores on the DASS-21 depression subscale showed a similarly strong relationship with pupils’ symptoms scores. The size of the relationship between children’s CSI scores and teachers’ scores on the ‘sources of stress scale’ was the strongest, but did not quite reach significance ($r = .56, p = .06$). None of the other measures assessing teachers’ psychological wellbeing showed a significant association with mean class symptom scores.

As described previously, children’s self-reported scores varied by school and by age group, with younger children more symptomatic than older children. None of the teachers’ psychological wellbeing scores varied significantly by school (all $ps > .58$)

although the small sample sizes might have had an impact here. Teachers' WEMWBS ($F(2, 46) = 3.29, p = .03, \eta^2 = .18$) and DASS depression scores ($F(2,46) = 3.46, p = .02, \eta^2 = .18$) did vary significantly by age group taught, implying that teachers of younger children have poorer wellbeing and greater depression than teachers of older children; but teachers of children in year 4, not year 3, showed the poorest mental health (see Table 26). Given the small sample size caution should be urged in interpreting these findings.

Table 25. Inter-correlations between mean child symptom scores and teachers' psychological health and wellbeing scores

R	WEMWBS ^a	Depression ^b	Anxiety ^b	Stress ^b	OCI-R ^c	Worry ^d	Sources of Stress ^e
SCAS class mean ^a	-.44**	.39**	.17	.16	.04	.20	.29
CSI ^a class mean	-.42**	.41**	.15	.12	.003	.21	.56

Note. ^aWEMWBS = Warwick Edinburgh Mental Wellbeing Scale; ^b Subscale scores of the Depression Anxiety Stress Scale; ^cOCI-R = Revised Obsessive-Compulsive Inventory; ^dWorry was measured by two items from the GAD-7 scale: 'I was not able to stop or control worrying' and 'I worried too much about different things'; ^eSources of Stress total. * $p < .05$, ** $p < .01$.

Table 26. Teachers' mean psychological health and wellbeing scores by year group taught

R	WEMWBS ^a	Depression ^b	Anxiety ^b	Stress ^b	OCI-R ^c	Worry ^d	Sources of Stress ^e
Year 3	47.15	5.23	4.08	7.23	9.77	2.38	13.91
Year 4	44.33	7.00	5.58	10.25	12.25	3.00	20.08
Year 5	51.46	3.08	3.31	7.69	12.62	2.15	16.00
Year 6	51.58	2.50	2.83	6.58	9.50	1.50	15.25

Note. ^aWEMWBS = Warwick Edinburgh Mental Wellbeing Scale; ^bSubscale scores of the Depression Anxiety Stress Scale; ^cOCI-R = Revised Obsessive-Compulsive Inventory; ^dWorry was measured by two items from the GAD-7 scale: 'I was not able to stop or control worrying' and 'I worried too much about different things'. * $p < .05$, ** $p < .01$.

Finally, as can be seen in Table 27, although none of the correlations reached significance when analyses were conducted separately for each year group, the strength of the association between children's mean symptom scores and teachers' WEMWBS and depression scores was strongest in younger children and weakest in

older children, indicating that the relationship between children’s anxiety/somatic symptoms and teachers’ wellbeing and depression could be moderated by a third variable linked to children’s age group.

Table 27. Inter-correlations between mean child symptom scores and teachers’ wellbeing and depression scores, by year group

R	Correlation between SCAS mean and WEMWBS ^a	Correlation between CSI mean and WEMWBS ^a	Correlation between SCAS mean and DASS Dep ^b	Correlation between CSI mean and DASS Dep ^b
Year 3	-.42	-.33	.42	.35
Year 4	-.33	-.44	.35	.43
Year 5	-.48	-.27	.02	.05
Year 6	.21	.08	-.03	-.05

Note. ^aWEMWBS = Warwick Edinburgh Mental Wellbeing Scale; ^b Depression subscale score of the Depression Anxiety Stress Scale. * $p < .05$, ** $p < .01$.

6.9 Teachers’ interest and attitudes towards pupils’ wellbeing.

Teachers were asked a series of questions regarding their interest, feelings of responsibility and attitudes towards pupils’ emotional wellbeing. Generally, teachers indicated that they were interested in their pupils’ emotional wellbeing. In response to the statement ‘I’ve been feeling very interested in my pupils’ emotional wellbeing’, no teachers answered ‘not at all’ or ‘a little’. Around a third (13/41: 31.7%) answered ‘some’; approaching half (18/41: 43.9%) answered ‘quite a bit’ and around a quarter (10/41: 24.4%) answered ‘a lot’¹³.

Teachers’ responses to questions regarding their feelings of responsibility for pupils’ emotional wellbeing can be seen in Figure 10. The overwhelming majority of teachers said they saw themselves as at least partly responsible for pupils’ emotional wellbeing. In keeping with this, less than a fifth of teachers (19.5%) disagreed that it was a teacher’s job to protect pupils from any sort of emotional distress. Interestingly, the majority of teachers agreed that teachers were just as responsible as parents for pupils’ emotional wellbeing (38% agreed slightly and 26%

¹³ As described in the methodology section, in order to improve the distribution of responses, this question was amended to include the word ‘very’ following administration in the first school and further piloting. Data from the first school was therefore excluded and so $n = 41$ rather than 50.

agreed very much). Even more teachers reported feeling just as responsible for their pupils' emotional wellbeing as their academic progress. Nearly half (44%) of teachers agreed very much with this statement, and a further 36% agreed slightly. Responses to the statement 'I am too sensitive to feeling responsible for my pupils' emotional wellbeing' were more normally distributed. Just over a quarter of teachers (28.6%) agreed slightly but only a small proportion (8.2%) agreed very much. A quarter (24.5%) neither agreed nor disagreed. A similar number reported disagreeing either slightly (18.4%) or very much (20.4%).

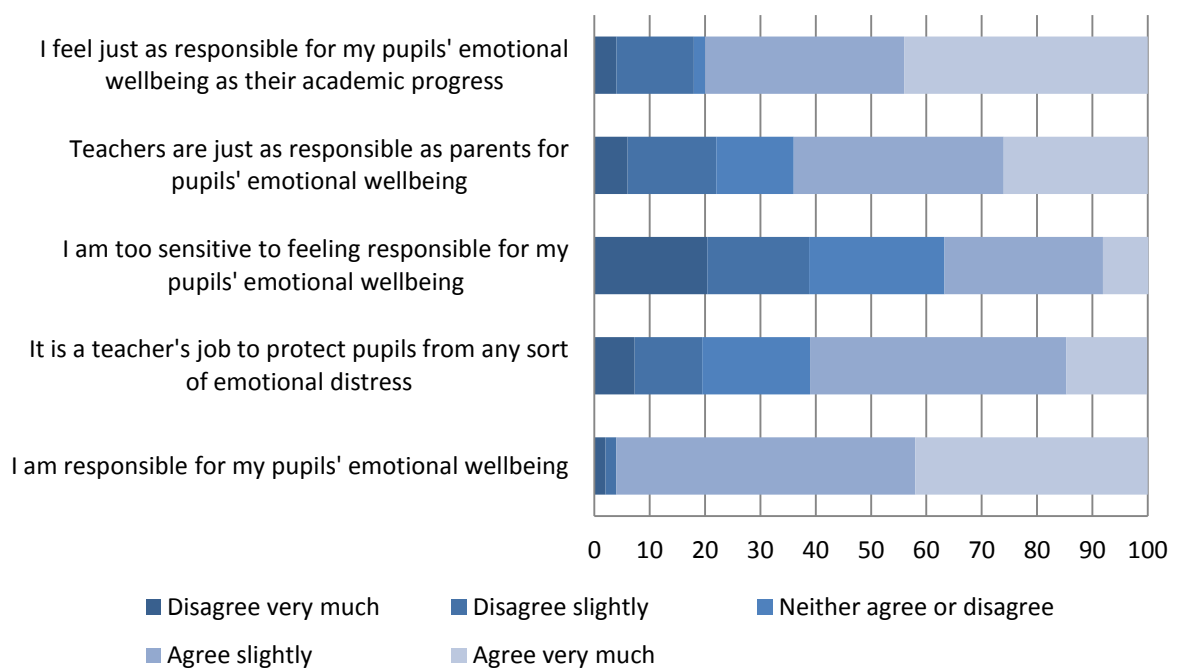


Figure 10. Teachers' responses (percentages) to questions about their feelings towards pupils' emotional wellbeing

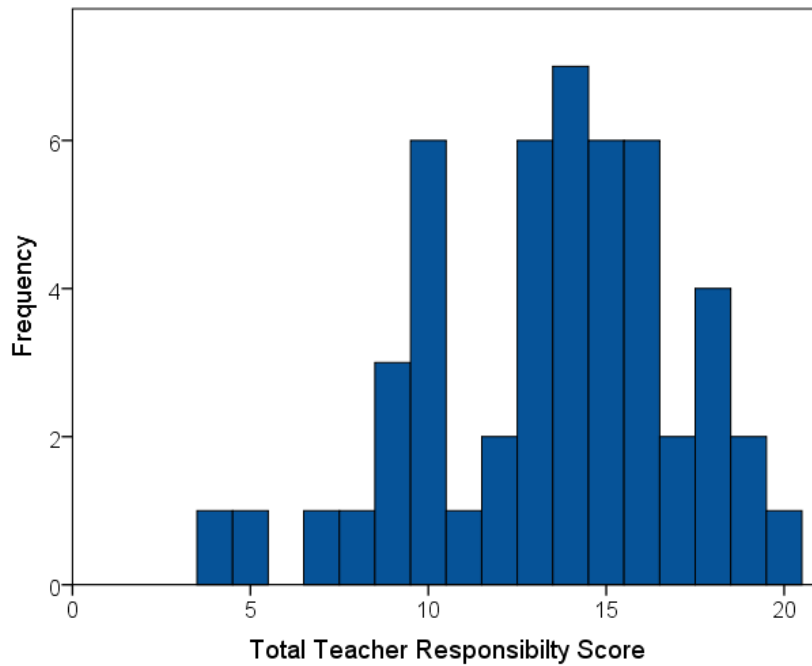


Figure 11. Teachers' total scores on questions assessing their feelings of responsibility towards pupils' emotional wellbeing: Frequency distribution (N = 50)

When assessed as a scale, the five responsibility questions showed good acceptable internal consistency, especially given the small number of items (Cronbach's alpha = .67) and a normal distribution (see Figure 11).

The extent to which teachers believed pupils were themselves responsible for causing, exaggerating and prolonging symptoms can be seen in Figure 12¹⁴.

Although no teachers agreed very much that pupils often caused their own anxiety, 39.9% agreed slightly with that statement. 22% disagreed very much and 14.6% disagreed slightly. A similar proportion reported disagreeing slightly that pupils often caused their own physical symptoms (39%). Although fewer teachers reported feeling that pupils caused their own physical symptoms (22% agreed slightly), a paired samples t-test revealed that this difference was not significant ($t(40) = 1.38, p = .18$).

While no teachers agreed very much that pupils often prolonged either their anxiety or their physical symptoms, in each case, over a quarter of teachers (29.3%

¹⁴ Again, these questions were amended after administration in the first school to include the word 'often' and therefore n = 41 rather than 50.

for anxiety, and 27.5% for physical symptoms) agreed slightly. Similar proportions disagreed, either slightly or very much (29.3% for anxiety and 32.5% for physical symptoms); leaving the majority in both cases neither agreeing or disagreeing (41.5% and 40%).

There were only two questions to which any teachers agreed very much: one teacher agreed very much with the statement ‘Pupils often exaggerate their own anxiety’ and one teacher agreed very much that ‘Pupils often exaggerate their own physical symptoms’. Attitudes towards anxiety and physical symptoms differed here. A majority (61%) agreed slightly that children often exaggerated their physical symptoms, whereas only 22% felt the same about anxiety. 36.6% of teachers disagreed at least slightly that pupils often exaggerated anxiety symptoms, whereas just 12.2% disagreed slightly that pupils often exaggerated their physical symptoms. A paired samples t-test revealed that mean scores differed significantly on this item for anxiety ($M = 1.78$, $SD = 1.01$) compared to physical symptoms ($M = 2.54$, $SD = 0.75$; $t(40) = -4.44$, $p < .001$).

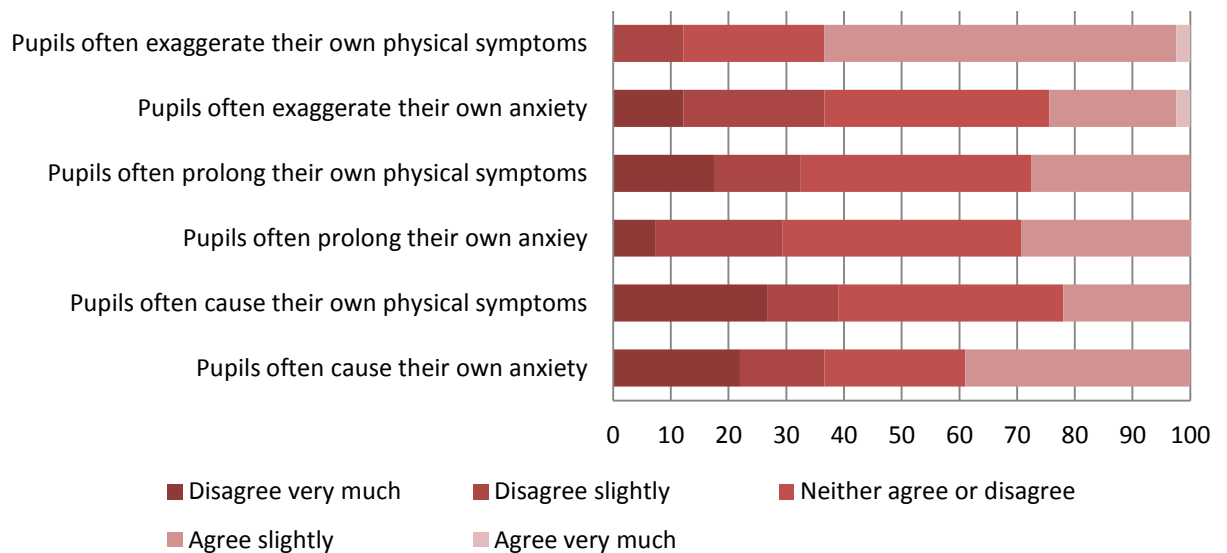


Figure 12. Teachers' responses (percentages) to questions about their attitudes towards the causes and presentation of pupils' anxiety and physical symptoms

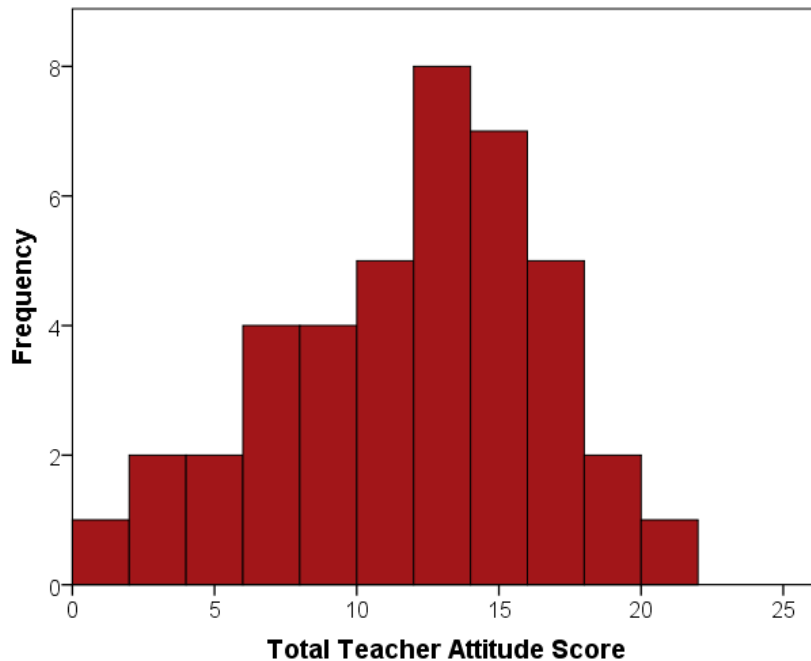


Figure 13. Teachers' total scores on questions assessing their attitudes towards pupils' emotional wellbeing: Frequency distribution (N = 41)

When assessed as a scale, the six items showed good internal consistency (Cronbach's Alpha = .86) and followed a normal distribution (see Figure 13).

6.10 The relationship between teachers' psychological health and wellbeing and their attitudes towards, and interest in, pupils' wellbeing

It was hypothesised that teachers' levels of depression would be associated with their interest in pupils' emotional wellbeing, with mild levels of symptoms associated with greater interest, and severe symptoms associated with reduced interest. There was no evidence of an association between depression subscale scores on the DASS-21 and responses to the question 'I've been feeling very interested in my pupils' emotional wellbeing' ($r_s = .15, p = .36$), even after those with severe/extremely severe depression scores were excluded ($r_s = .19, p = .27$). A chi-squared test of independence indicated that depression severity grouping (normal, mild/moderate and severe/extremely severe) was not associated with the responses given by teachers ($\chi^2 (4) = 3.34, p = .50$; Cramer's V = .20, $p = .50$). Scores on this question were not significantly associated with any other measures of wellbeing.

It was hypothesised that teachers' levels of obsessive-compulsive symptoms would be positively associated with their feelings of responsibility towards pupils' emotional wellbeing. Total scores on the OCI-R did not show any association with total scores on the Teacher Responsibility Scale ($r = -.004, p = .98$). Using the non-parametric Spearman's rho correlation, a significant positive correlation was found, however, between responses to one question: 'I am too sensitive to feeling responsible for my pupils' emotional wellbeing' and scores on the OCI-R ($r_s = .32, p = .027$). DASS total scores were also associated with responses to this question ($r_s = .41, p < .001$). In order to assess whether OCD symptoms made a unique contribution to the variance in responses to this question, a hierarchical regression analysis, with OCI-R total scores entered in the first step, and DASS-21 scores entered in the second step, was conducted (see Table 28). In step 1, OCI-R scores made a significant contribution to the variation in responses, as expected ($R^2 = 12.6, F \text{ change } (1, 47) = 6.79, p = .012$). However when DASS scores were entered in step 2, OCI-R scores no longer significantly predicted responses to this question (see Table 27). The inclusion of DASS-21 scores significantly improved the model fit ($R^2 \text{ change} = .11, F \text{ change } (1, 46) = 6.69, p = .013$), which explained 23.7% of the variance in responses to the question. The findings suggest that the relationship between obsessive-compulsive symptoms and perceiving oneself as too sensitive to feeling responsible for pupils' emotional wellbeing is not specific to obsessive-compulsive symptoms, but can be explained by more common distress symptoms.

Table 28. Hierarchical regression analysis predicting responses to the question 'I am too sensitive to feeling responsible for my pupils' emotional wellbeing'.

	Model 1				Model 2			
	B	Std B	β	p	B	Std B	β	p
OCI-R ^a	.055	.021	.355	.012*	.027	.022	.177	.231
DASS-21 ^b					.042	.016	.378	.013*
R ²	12.6				23.7			
F change	6.79*				6.69*			

Note. ^aOCI-R = Revised Obsessive-Compulsive Inventory; ^bDASS = Depression Anxiety Stress Scale.
* $p < .05$, ** $p < .01$.

Teachers' total scores on items assessing their beliefs about pupils' roles in causing, prolonging and exaggerating symptoms were not significantly associated with their

scores on the DASS-21 ($r = -.09, p = .57$) or any of the other measures assessing aspects of psychological wellbeing.

6.11 The relationship between teachers' attitudes towards, and interest in, pupils' wellbeing and their sensitivity to pupils' anxiety and somatic symptoms

Data were analysed to test the hypothesis that teachers who expressed greater interest in, and more responsibility for, pupils' wellbeing, would be more sensitive to their pupils' anxiety and somatic symptoms. Responses to the question 'I've been feeling *very* interested in my pupils' emotional wellbeing' did not correlate significantly with either anxiety sensitivity ($r_s = .24, p = .13$) or somatic sensitivity scores ($r_s = .29, p = .07$). Against the hypothesis, scores on the Teacher Responsibility scale were not significantly associated with anxiety sensitivity scores ($r = .05, p = .77$) or somatic sensitivity scores ($r = .14, p = .38$) either. Teachers' total scores on items assessing their beliefs about pupils' roles in causing, prolonging and exaggerating symptoms were in the expected direction but not significantly associated with anxiety ($r = -.20, p = .22$) or somatic sensitivity scores ($r = -.15, p = .35$).

6.12 Multiple regression analysis predicting teachers' anxiety and somatic sensitivity scores

Finally, regression analyses were carried out to assess the relative contribution of different factors shown to be associated with teachers' sensitivity scores. For the model predicting teachers' anxiety sensitivity scores, two variables were entered as predictors: teacher gender (step 1) and teachers' scores on the revised Obsessive-Compulsive Inventory (step 2).

Assumptions of hierarchical regression analysis were tested before interpreting results of each analysis. None of the entered variables correlated with each other more strongly than $r = .54$ and the highest VIF value was 1.4, indicating that multicollinearity was not a concern. Examination of standardised residuals and Cook's distance indicated no outliers were unduly influencing the regression models

(the maximum Cook's distance was .23). In each case the Durbin-Watson statistic was close to two, indicating independent errors. Histograms and normal probability plots of standardised residuals suggested that residuals were normally distributed, and scatterplots of standardised residuals versus predicted values indicated homogeneity of variance.

As can be seen in Table 29, teacher gender made a significant contribution to teachers' anxiety sensitivity scores in step 1. Being a male teacher was associated with better anxiety sensitivity scores. In step 2, teachers' revised Obsessive-Compulsive Inventory scores significantly improved the model, with increased obsessive-compulsive symptoms indicating better sensitivity. The final model explained about a fifth of the variability in teachers' anxiety sensitivity scores.¹⁵

Table 29. Hierarchical regression analysis predicting teachers' anxiety sensitivity scores.

	Model 1				Model 2			
	B	Std B	β	p	B	Std B	β	p
Gender	-.191	.074	-.347	.013*	-.172	.073	-.312	.023*
OCI-R^a					.007	.003	.269	.048*
R²	.121				.192			
F change	6.58*				4.13*			

Notes. ^aOCI-R = Revised Obsessive-Compulsive Inventory. * $p < .05$, ** $p < .01$.

For linear regression analysis predicting teachers' somatic sensitivity scores (Table 30), teachers' anxiety severity scores ('normal', 'mild/moderate' and 'severe/extremely severe') were entered as dummy variables, explaining approximately 13.4% of the variance in teachers' somatic sensitivity scores.

¹⁵ The interaction between teacher gender and OCI-R scores, computed using centred variables, did not make a significant contribution to the model.

Table 30. Regression analysis predicting teachers' somatic sensitivity scores.

	B	Std B	β	p
Mild/Moderate anxiety VS Severe/Extremely Severe anxiety ^a	-.208	.081	-.416	.013*
Mild/Moderate anxiety VS Normal anxiety ^b	-.135	.065	-.335	.044*
R²	.134*			
F change	3.64*			

Note. ^a As measured by the anxiety subscale of the Depression Anxiety Stress Scale

6.13 Summary

In summary, teachers in this study reported relatively high levels of depression, anxiety and stress compared to a normative sample; but similar levels of wellbeing and lower levels of obsessive-compulsive symptoms than those reported in studies with other populations. Teachers reported high levels of interest and feelings of responsibility towards their pupils' emotional wellbeing, and were more likely to think pupils exaggerated physical symptoms than anxiety symptoms. In a hierarchical regression analysis, teachers' gender (being male) and their obsessive-compulsive symptoms significantly predicted their anxiety sensitivity scores; while teachers with mild/moderate levels of anxiety had higher somatic sensitivity scores than those with symptoms in the normal or severe/extremely severe range. Teachers' psychological wellbeing was generally not associated with their interest in, feelings of responsibility for, or attitudes towards the causes and presentation of pupils' symptoms. Teachers' interest in, feelings of responsibility for and attitudes towards the causes and presentation of pupils' symptoms were not associated with teachers' sensitivity scores.

Chapter 7 Results: How teachers identify anxiety and somatic symptoms in children

In addition to investigating whether teachers can recognise anxiety and somatic symptoms in their pupils, this thesis also aimed to explore *how* teachers identified children as anxious or as experiencing somatic symptoms. This was achieved via the use of two different methodologies: teacher rating forms, and qualitative interviews. In the second part of this chapter, data from qualitative interviews will be presented, but to begin with, data from the teacher rating forms will be reported.

7.1 Qualitative data collected through teacher rating forms

As described in the methodology, on their rating forms teachers were asked to identify up to three children in their class who they believed had debilitating levels of anxiety, and up to three children who they believed had debilitating levels of somatic symptoms, defined as physical symptoms without an obvious physical cause. In addition, they were asked to write a short description of symptoms for each child they had identified. Responses were analysed using the principles of thematic analysis (Braun and Clark, 2006) with data analysed at the semantic level within a realist framework. The identified themes are reported in Table 31.

7.1.1 Teachers' written descriptions of children with 'debilitating' levels of anxiety

Emotional regulation

Teachers consistently identified not being able to control emotional responses as being a sign of anxiety among children. Crying was one of the most commonly reported symptoms, with descriptions ranging from "tearful" (ID25)¹⁶ to "*hysterical crying*" (ID42), "*crying at the drop of a hat*" (ID49) and "*crying for long periods of time*" (ID40). Children who could not control their anger or aggressive responses were also highlighted by teachers. Descriptions here included "*huffing a lot*" (ID2),

¹⁶ ID numbers refer to teachers, not children.

“volatile” (ID9) *“short tempered, physical, throws things, storms out of class”* (ID19) and having an *“over-reaction to losing”* (ID4).

Confidence

A lack of confidence was evident in many teachers’ descriptions of anxious children. Several specifically mentioned it in their descriptions, for example, teacher ID7 described a child as being *“easily defeated, doesn’t believe in himself”*; but it was also evident in related behaviours such as avoidance and withdrawal, which developed into a subtheme. Teachers identified children who tried to get out of certain tasks, for example, a child who *“will not try a task unless she feels she can succeed”* (ID16) and another who *“hates doing anything hard”* (ID19). Teachers also described children who were *“reluctant to try new things”* (ID13), *“reluctant to take part in paired group/whole class activities”* (ID10) and who *“give up easily”* (ID37). The description *“work avoidance”* was also used by two teachers (ID14, ID20). The word *“withdrawn”* was also mentioned by several teachers (e.g. ID2, ID10, ID14, and ID21) and several pupils were described as *“shy”* (ID9, ID45, and ID54).

The second subtheme noted here was ‘reassurance seeking’. Children were described who asked lots of questions and would not proceed with tasks independently without guarantees that what they were doing was correct. Typical descriptions included *“asks lots of questions”* (ID18), *“needs confirmation of what to do at every step, seeks approval”* (ID48) and *“very reluctant to embark on work unless she has checked with me that it will be right”* (ID39).

Anxious cognitions

Although less commonly reported, cognitive aspects of anxiety were emphasised in several of the teachers’ descriptions. These could be split into two main subthemes. The first related to worry. Unfortunately many teachers did not reveal how they came to be aware of children’s worries; however they described children with both pervasive worries e.g. *“constantly worrying”* (ID38) and specific worries, for example *“worries about maths homework”* (ID35) or *“team games”* (ID15). The second subtheme related to cognitive capacity and application of cognitive skill. *“Lack of focus”* (ID20), seeming *“distracted, switched off”* (ID25), having *“poor*

concentration" (ID15) and *"poor memory skills"* (ID12) were all identified by teachers as indicative of anxiety. One teacher also described *"confusion"* and *"daydreaming"* as symptoms of anxiety (ID52).

Physical symptoms

Common physical complaints such as *"tummy aches"* (ID40), *"feeling sick"* (ID25) and even *"feigning illness"* (ID53) were described as symptoms of anxiety by teachers, as well as *"tiredness"* (ID21) and being *"often off sick"* (ID42). Less commonly described were physiological symptoms of anxiety itself such as *"shaking"*. Only one teacher described this symptom (ID50). Descriptions of anxious body language were also rare, although one teacher described a *"lack of eye-contact, quiet speaking voice and stooped posture"* (ID31).

Contextual indicators

Another theme evident in the questionnaire data was the use of contexts to identify anxiety in children. Two subthemes were identified: academic contexts and peer contexts. In regards to the first of these, teachers identified anxieties specific to or exacerbated by subject matter, for example, teacher ID45 described a child who was *"fine in PE/music/art/math/other subjects but very anxious in literacy"* while another described a child with *"high anxiety, especially during assessments especially maths"* (ID13). More general fears related to learning were also identified, for example, *"fear of underachieving and not understanding"* (ID6) and *"very anxious about homework not being handed in"*. Relationships with peers also revealed anxiety in children, according to a number of teachers. One teacher noted a child who *"has not really established close friendships with peers"* (ID15), while another described a child who was *"isolated a little from others"* (ID47). Other teachers became aware of peer relationships causing problems in the classroom, for example, *"not able to work in a group, says he has no friends"*.

Table 31. Teachers' written descriptions of children with 'debilitating' levels of anxiety

Themes	No. children given this description (N = 84)
Emotional regulation	
Crying	20
Irritability	6
Confidence	
Avoidance/withdrawal	20
Reassurance seeking	9
Anxious cognitions	
Worry	10
Focus and concentration	12
Physical symptoms	10
Contextual indicators	
Academic	10
Peer relationships	8

Note: 84 children were identified as having 'debilitating' levels of anxiety by their teachers. The most commonly reported symptoms and overarching themes are reported here. N = 107 here as some children were described as having symptoms in multiple domains.

7.1.2 Teachers' written descriptions of anxiety for 'successful' and 'unsuccessful' nominations and in teachers with 'high' and 'low' sensitivity scores

As described in chapter 4, 121 children in this study (approximately 9%) self-reported anxiety scores that were indicative of clinical levels of anxiety (above 1.5 standard deviations above the mean for their gender). Teachers identified 84 children as having 'debilitating' levels of anxiety, but only seven children were in both groups. The descriptions teachers provided of these seven are reported below (see Table 32, column A). Next to them are descriptions of children identified as having 'debilitating' levels of anxiety symptoms by their teacher, whose self-reported Spence Children's Anxiety Scale scores fell into the lowest 9% (Table 32, column B).¹⁷

¹⁷ The original intention was to look at descriptions of children whose SCAS scores were 1.5 standard deviations below the mean, however for boys this was a minus number (M = 28.06, SD = 18.96). A decision was therefore taken to look at children identified as anxious by their teacher, whose SCAS scores were in the lowest 9%. This equated to a similar number of children.

It is important not to attempt to draw strong conclusions from these descriptions, given the very small sample size. Nevertheless, any commonalities and differences between the two may indicate possible areas for further exploration in future research. In terms of commonalities, both sets feature references to crying and difficulties related to school work and peer relationships. In terms of differences, the set of descriptions of children who also had high self-reported levels of anxiety (column A) features worry e.g., *“worries about too many things”* and *“sometimes worries”*. The other set (column B) does not include references to worry. Finally, the low SCAS score column features references to ‘acting out’, headstrong and irritable behaviours or symptoms in boys (e.g., *“disruptive when out of comfort zone”, “over emotional reactions, lack of control”*). It is apparent that the very small number of children in column B are exhibiting behavioural difficulties that may well require attention and extra support, but they do not self-report high anxiety.

Table 32. Descriptions of children with high and low self-reported SCAS scores who were nominated by their teacher as having ‘debilitating’ levels of anxiety

Column A: High child SCAS scores ^a (n = 7)	Column B: Low child SCAS scores ^b (n = 8)
<p>He justifies getting anything wrong and can't handle making mistakes. Very vivid dreams and tired. Child ID 524 (Boy aged 7), Teacher ID 21</p>	<p>ADHD and possible autism, unable to complete or start tasks. Does not cope well with change. Child ID 377 (Boy aged 7), Teacher ID 16</p>
<p>Worries about too many things, especially friendships, changes to the days plan i.e. activities – uncertainty causes a lot of worry. Child ID 764 (Boy aged 10) Teacher ID 28</p>	<p>Disruptive when out of comfort zone. Child ID 1188 (Boy aged 9) Teacher ID 43</p>
<p>Occasionally bursts into tears when reading. Extremely shy in work activities and has little self-confidence. Is fine in PE/music/art/maths/other subjects but very anxious in literacy. It is not regularly debilitating, but is occasionally. Child ID 1263 (Boy aged 9) Teacher ID 45</p>	<p>New to class, experimenting with different behaviour. Child ID 1207 (Boy aged 10) Teacher ID 43</p>
<p>Looking tired, sometimes worries. Often complaining of headaches. Child ID 1406 (Boy aged 7) Teacher ID 50</p>	<p>Over emotional reactions, lack of control. Child ID 113 (Boy aged 8), Teacher ID 4</p>
<p>Can get very distressed when his best friend is not in – begins to feign illness, or say he doesn't feel right. Has broken down in tears and had to be sent home on two occasions (one time when a cover teacher was in, in addition to his friend being away). Child ID 1477 (Boy aged 9) Teacher ID 53</p>	<p>Shy and unconfident. Will not read aloud in class and often finds it uncomfortable working with others. Child ID 197 (Girl aged 11), Teacher ID 9</p>
<p>Easily defeated, doesn't believe in himself. Looks teary regularly, looks down." Child ID 1307 (Boy aged 9) Teacher ID 47</p>	<p>Can be anxious/withdrawn during some subjects or group/whole activities Child ID 223 (Girl aged 10), Teacher ID 10</p>
<p>Can become upset when she can't do her work. Child ID 932 (Girl aged 8) Teacher ID 35</p>	<p>Recently has seemed to cry at the drop of a hat and doesn't seem/look healthy. Child ID 1368 (Girl aged 10), Teacher ID 49</p>
	<p>Flustered, anxious, frown on face. Confused with instructions and day dreaming. Child ID 1464 (Girl aged 10), Teacher ID 52</p>

Note. ^aHigh SCAS scores means children whose total mean SCAS scores were above 1.5 std dev above the mean for their gender (equating to the top 9%) . ^bLow SCAS scores means children whose total mean SCAS scores were in the lowest 9% for their gender (< 6 for boys and < 11 for girls).

An important caveat here is that scores above 1.5 standard deviations above the mean on the SCAS do not necessarily imply debilitating levels of symptoms, and a child scoring in the lowest tenth percentile on the SCAS may be experiencing different anxiety symptoms than those assessed by the SCAS, or may not have self-reported symptoms for various reasons. Nevertheless, as has been described previously, the SCAS has good psychometric properties, including convergent validity with clinical diagnoses of anxiety. It is also important to point out that the children teachers 'successfully' identified are a very small proportion of highly anxious children, and these identified children may not be typical of highly anxious children. Six of the seven 'correctly' identified children were boys, for example. (Although girls report significantly more anxiety than boys, teachers' failure to 'correctly' identify girls is not as surprising as it might have been, given that children who scored above 1.5 standard deviations above the mean *for their gender* were selected for comparison with teacher nomination, meaning there were equal numbers of boys and girls to select from).

Descriptions used by teachers whose anxiety sensitivity scores fell into the top twenty per cent of teachers ($n = 10$) were also compared with those used by those in the bottom twenty per cent ($n = 10$) in order to see if there were any obvious differences, at the teacher level, in the way they identified anxious pupils. Both groups identified the same number of children as having 'debilitating' levels of anxiety ($n = 19$).

Teachers in both groups described children having concerns about their abilities to achieve academically, disruptive behaviours and crying. Teachers with better sensitivity scores appeared to provide more examples of what children's concerns related to, for example, "*gets quite concerned and a little upset when there is less control e.g. going on a trip*", "*worries about changes to the day's plan, uncertainty causes a lot of worry*" and being "*worried about going to the toilet*". Their responses also appeared to focus on cognitions rather than just behaviours, for example reporting that a child was worried or anxious about friendship rather than that they had "*no friends*"). Shyness seemed to feature more often in the low

sensitivity group's responses. The teachers' descriptions: *"shy and unconfident"*, *"self-aware, quiet and very shy"*, *"lack of eye-contact, quiet speaking voice"* and *"quiet and can be withdrawn"*, were remarkably similar to each other. Once again, caution should be urged in interpreting these findings given the small sample size. Teachers' anxiety sensitivity scores relate to the relative anxiety ratings they gave to children in their class, whereas the descriptions relate to children they perceived as having 'debilitating' levels of symptoms. While they may provide some indication as to how teachers with better or worse sensitivity scores define and recognise anxiety, this should not be over-interpreted.

7.1.3 Teachers' written descriptions of children with 'debilitating' levels of somatic symptoms

On the whole, teachers reported specific physical ailments in their descriptions of identified pupils' somatic symptoms. Symptoms were divided into three main categories or themes. The first identified theme was common somatic symptoms. These included such complaints as stomach aches, headaches and feeling sick, and were by far the most frequent descriptions (see Table 33). Of the 63 children identified by their teachers as having 'debilitating' levels of physical symptoms, a total of 18 children were described as being identified because of stomach aches, eleven because of headaches and eight because of feeling sick. Non stomach- or head-based 'aches and pains' were common too (N = 7). A few teachers (N = 5) made reference to non-specific illness or symptoms, for example, *"complains of being poorly"* (ID25) or in another case *"complains about being unwell"* (ID28). Four children were identified because of their frequent absence from school.

Teachers also incorporated physical aspects of anxiety into their descriptions. The second identified theme, labelled as 'physiological symptoms of anxiety', covered accounts of pupils' nervous energy and panic. These included descriptions such as *"restless"* (ID43), *"trembles"* (ID51), *"shaky"* (ID21), *"tensing her body"* (ID50) and even *"panic attack"* (ID53).

Similarly to how they identified anxiety, teachers also used emotional outbursts to identify children as experiencing physical symptoms. These emotional responses

were grouped together into the final theme, labelled as ‘emotional responses’. Many teachers (N = 9) made reference to crying in their descriptions, while others referred to more aggressive outbursts. An example is teacher ID52 who used the following description of a pupil in her class: “*Red cheeks, raised voice, agitated, confused and sometimes angry*” to justify his inclusion on her list of children experiencing debilitating levels of physical symptoms.

Teachers also listed a whole array of other, rarer physical symptoms in their descriptions. These included “*bed wetting*” (ID13), “*goes to the toilet a lot*” (ID17), “*rash on different parts of the body*” (ID12) and “*blisters on feet*” (ID15).

Table 33. Teachers’ written descriptions of children with ‘debilitating’ levels of somatic symptoms

Themes	No of children given this description (N = 63)
Common somatic symptoms	
Stomach aches	18
Headaches	11
Feeling sick	8
Tiredness	5
Unspecified ‘aches and pains’	7
General illness/debility	5
Absence from school	4
Physiological symptoms of anxiety	6
Rarer physical symptoms	11
Emotional responses	
Crying	9
Anger	3
Sadness	2
Other behaviours (not physical)	10

Note. 63 children were identified as having ‘debilitating’ levels of physical symptoms by their teachers. All symptom types are reported here. N = 99 here as some children were described as having several different symptoms.

7.1.4 Teachers’ written descriptions of somatic symptoms for ‘successful’ and ‘unsuccessful’ nominations

As described in chapter 4, a total of 111 children in this study (around 8%) self-reported scores above 1.5 standard deviations above the mean for their gender on the Children’s Somatisation Inventory. Teachers identified 63 children as having debilitating levels of somatic symptoms. Only eight of these children were in both

groups. Once again the descriptions teachers provided of these eight children (see Table 34, column A) were analysed for clues to ‘successful’ nomination. They are compared with descriptions of children identified as having ‘debilitating’ levels of somatic symptoms, who reported the lowest CSI scores for their gender (column B).

Table 34. Descriptions of children with high and low self-reported CSI scores who were nominated by their teacher as having ‘debilitating’ levels of somatic symptoms

High child CSI scores (n = 8)	Low child CSI scores (n = 5)
Frequent complaints about belly ache, muscular ache (ID13) Child ID 289 (Boy aged 10) Teacher ID 13	Headaches Child ID 485 (Boy aged 11) Teacher ID 20
Extreme tiredness Child ID 486 (Boy aged 10) Teacher ID 20	Restless and physically uncomfortable often Child ID 1213 (Boy aged 10) Teacher ID 43
Complains of aches and pains or feeling tired Child ID 992 (Boy aged 8) Teacher ID 37	Usually is generally athletic and looking fit but recently has been poorly with aches and pains. Child ID 1363 (Boy aged 11) Teacher ID 49
Says he feels funny or a ‘bit sick’. Can become teary and in severe cases cannot be calmed down – had to be sent home when a carer teacher in and best friend was away – panic attack. Child ID 1477 (Boy aged 9) Teacher ID 53	Bursts into tears when someone says something she deems offensive. Child ID 197 (Girl aged 11) Teacher ID 9
Worry and concern verbally Child ID 86 (Boy aged 9) Teacher ID 3	Very thin, absence from school, tremor Child ID 839 (Girl aged 11) Teacher ID 31
Complains of headache/stomach ache Child ID 1141 (Girl aged 10) Teacher ID 41	
Will often express physical discomfort in legs or tummy – usually when PE sessions Child ID 1329 (Girl aged 9) Teacher ID 47	
Lots of tummy aches, problems going to the bathroom – cries wants her Mum Child ID 1439 (Girl aged 7) Teacher ID 51	

Note. ^aHigh CSI scores = children whose total mean CSI scores were above 1.5 std dev above the mean for their gender (equating to the top 8%) . ^bLow CSI scores = children whose total mean CSI scores were in the lowest 10% for their gender (<= 3). Only three nominated children had CSI scores in the lowest 8% of children for their gender so the criteria was adjusted from 8% to 10%.

The descriptions of somatic symptoms presented in Table 34 were much less detailed than for anxiety symptoms, and it is difficult to identify any clues as to why the teachers in column A were successful when so many others were not. One potential candidate for a successful strategy is recognising more than one physical symptom, which several of the teachers represented in column A do. This is important as high scores on the CSI are dependent on children endorsing several symptoms. Some of the descriptions in column A also indicate that teachers are aware, or have a theory, for the causes of the symptom (e.g., the child's best friend being away) indicating that teachers may have picked up on potential emotional triggers for the symptom, rather than any actual symptoms. Once again, caution should be urged in interpreting the findings from this limited number of descriptions.

7.2 Teachers' recognition and understanding of anxiety and physical symptoms in pupils: analysis of qualitative interviews

Qualitative interviews were carried out with ten teachers in order to investigate in greater detail how teachers defined anxiety and somatic symptoms in their pupils, and what factors guided their decisions to identify children as anxious or somatising. Individual characteristics of interviewed teachers can be seen below in Table 35. As it was the aim of the study to interview teachers from across the spectrum of sensitivity scores, a total sensitivity score (anxiety and somatic sensitivity scores summed) was computed for each teacher. These scores were divided into five equal groups (20% of cases in each), and two teachers were interviewed from each group¹⁸. Individual characteristics of interviewed teachers, along with their ID numbers, sensitivity scores and scores on the Depression Anxiety Stress scale can be seen below in Table 35. The majority of interviews were carried out with female teachers (7/10) and all teachers were in their thirties or forties. Teachers were interviewed at a place and time of their own choosing. The majority of interviews took place in the teacher's school (n = 7) however two took

¹⁸ With the exception of group three, from which one teacher was interviewed and group 4, from which three teachers were interviewed.

place at the UCL Institute of Education and one in a public house. A topic guide for the interviews can be seen in Appendix 8.

Table 35. Individual characteristics of interviewed teachers

ID	Gender	Years old	Years teaching	Anxiety sensitivity score	Somatic sensitivity score	Sensitivity group ^a : (1-5;1 = poorest 5 = best)	DASS ^b total score
13	Male	49	18	.40	.28	5	20
16	Female	47	10	.13	.46	4	11
20	Female	36	12	-.31	-.15	1	7
23	Male	45	9	.28	.30	4	39
24	Male	34	5	.05	.09	2	26
25	Female	34	2	.12	.05	2	22
29	Female	39	2	.18	.02	3	7
39	Female	54	15	.24	.41	4	12
48	Female	47	17	.03	-.10	1	7
53	Female	32	2	.42	.40	5	47

Note. ^a = Anxiety and somatic sensitivity scores were summed and then divided into 5 equal groups;

^bDASS = Depression Anxiety Stress scale

Interviews were recorded and transcribed verbatim, in line with practices described by Jefferson (2004), and NVivo 10 was used to organise the data. In order to identify how teachers identified anxiety and physical symptoms, transcribed interviews were analysed using the principles of thematic analysis (Braun and Clarke, 2006). Five themes were identified from teachers' accounts. These themes can be seen in Figure 14.

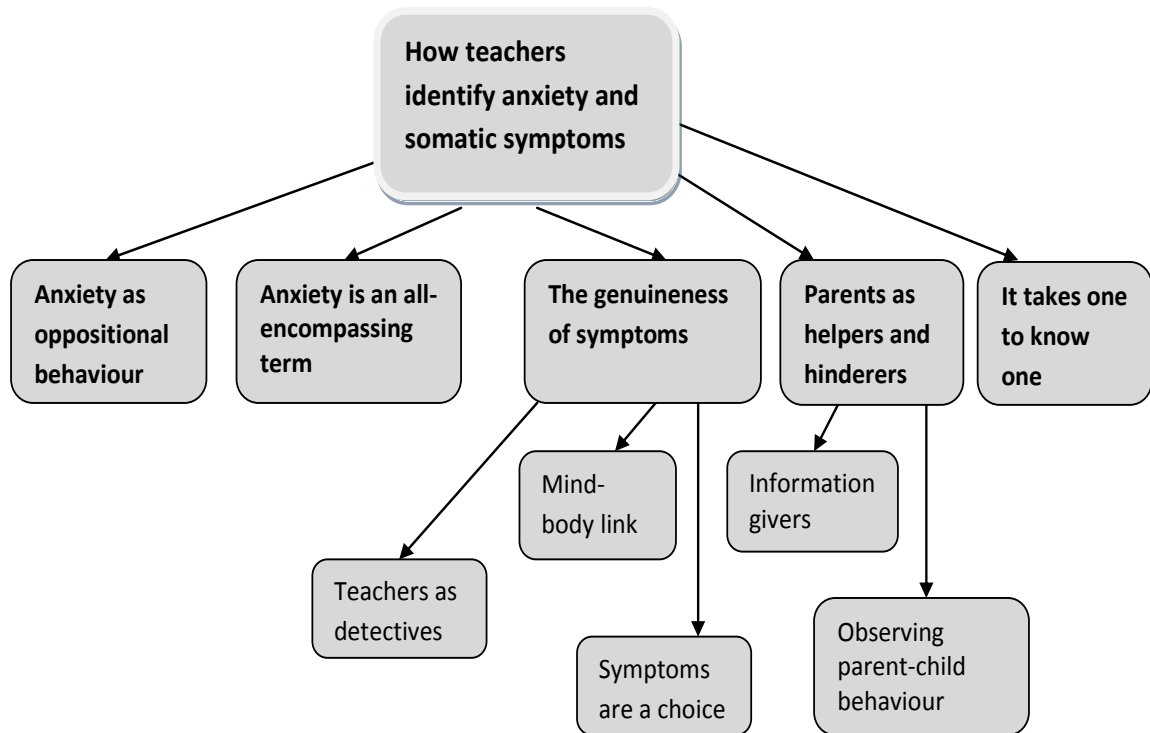


Figure 14. Themes and subthemes identified in teachers' interviews

7.2.1 Anxiety as oppositional behaviour

One of the most strongly recurring themes in the interview dataset was the perception that anxious children could be successfully identified by acting out or oppositional behaviour:

"They'll more often than not be the ones that I have to keep behind for a few minutes, you know they're more often than not the ones that have had detention." (ID24)¹⁹

Eight out of ten teachers (encompassing those with high and low 'sensitivity scores') described externalising symptoms in children as indicative of anxiety. These symptoms included irritability or anger:

"Children who get very cross when you ask them to do something a different way erm children who have tantrums when you ask them to change things, you know they want it their way." (ID16);

¹⁹ The ID number refers to the teacher.

“like one particular (.) very nice boy you know really really calm to start with and then issues have been happening (.) erm (.) and he kind of flares up and for him it manifests differently getting really really angry.” (ID13)

But also deliberately antagonistic behaviour: *“provoking other children”* (ID13); argumentative behaviour: *“arguing with their peers in the line”* (ID16); attention seeking: *“the ‘look at me’ behaviours really. Making noises. Silly remarks. Shouting out”* (ID20) and hyperactivity:

“Fiddling, jumping up and down when they don’t need to, shouting out, y’know they’re all compulsive things actually that they just do cos they can’t stop themselves. It really disrupts the flow of learning.” (ID24)

For some teachers, the rareness of the oppositional behaviour was what made it stand out, for example:

“Children that don’t normally have temper tantrums having a temper tantrum when they can’t figure out a sum or something like that, ‘I can’t do it, I can’t do it.’” (ID29)

For others, it was the lack of an obvious cause for the behaviour:

LN: *And what would lead you to conclude that a child’s negative behaviours were coming from anxiety rather than for another reason?*

ID20: *Erm (.) if it was, like sudden, so if it just started happening for no apparent reason. I’d think something had happened or something had changed ((long pause)) yeah.*

Anxiety was perceived as being at the root cause of oppositional behaviour, as opposed to simply coinciding with it:

“Arguments with other children. Problems in the playground can often be attributed to something.” (ID20);

“It seems that that anger which is a very sort of instantaneous bubbling up emotion, very strong, but it often seems to come from something deeper

where they are worried about something or they've got an anxiety. That will give them a shorter fuse or maybe something is sparked you know if there is a niggling anxiety in the background and something has suddenly sparked it that's what causes that sort of outburst.” (ID39)

7.2.2 Anxiety is an all-encompassing term.

A second theme identified within the dataset related to the definition of anxiety used by teachers. Anxiety as a concept was generally perceived as being interchangeable with the much broader concept of distress, and as such was used to refer to a huge range of behaviours and emotions in children, rather than having its own separate definition. Teachers in the sample found it difficult to isolate specific behaviours and emotions related to anxiety, as distinct from other symptoms, particularly unhappiness:

“(.) and then would do very big bad things like steal lots of money or lie about what adults have done to him and things like that, so that particular child, I'm not sure anxie- I think it is, I think he's an unhappy boy as I think a lot of children in that family are and I think if that's what you mean. He would be anxious about probably everything and anything.” (ID48);

“I can tell this particular boy is very anxious he always looks quite miserable it's hard to get a smile from him.” (ID24)

Crying, in particular, was identified as a sign of anxiety:

“The most normal forms of anxiety in my class is tearfulness.” (ID25);

“Specifically, the ones which are flashing red warning signs are children bursting into tears in the middle of the class.” (ID29).

Where unhappiness was not perceived as being a symptom of anxiety itself, it was perceived as being an inevitable consequence of anxiety:

“Last year I think the children felt anxious, and that led to unhappiness. They were unhappy because they were anxious. They felt unsafe. Erm. And that

causes stress and unhappiness. I'd have to kind of think a bit more and you as a psychologist probably know better how that works, the dynamic between stress and anxiety. Feeling unsafe, that leads to feelings of unhappiness, and that causes stress I would say." (ID23)

For one teacher, a wide and varied range of behaviours displayed following bereavement were seen as evidence of anxiety:

LN: Can you give me an example of a child that was anxious? Just describe, in that particular situation, what it was that you noticed.

ID29: There are two very obvious children in my class, both of whom have lost, one's lost a mother and one's lost their sister, his baby sister this year. Let's take the first girl child who lost her mother. She is an incredibly studious child and because she lost her mother she now wants to do brilliantly at school to make sure she proves herself to her (.) and you can tell when she gets anxious because she just sits there and goes really white and she can't even fake a smile which is what normally happens and you can see just there's no colour in her face and she's almost still. The other child is the complete opposite extreme and he was far more traumatised by the actual actions of having lost his sister. It was quite a horrible accident that happened, and he can't sit still, he can't stop fidgeting he can't stop talking because the moment he stops he has to think about it, so you can tell when he's having a bad day because the mild low level behaviour problems escalate to quite large low level behaviour problems.

The responses above imply a perception of anxiety as something that is caused by external events, rather than something inherent within the child, or an interaction between the two. When asked to describe an anxious child, teacher ID29 immediately described two children who had experienced tragic events while she had been their teacher and teacher ID23 described how 'the children' felt anxious; as a group, in response to certain events in the class. In keeping with this, teachers also described environmental family influences, such as pushy parental behaviour as indicators of an anxiety in children (see section 7.2.4).

In addition to unhappiness and behaviours following bereavement, anxiety and worry was described as indistinguishable from low self-confidence:

“I think lack of confidence and worry are probably similar.” (ID48)

These findings are in keeping with the results from the quantitative study, where it was shown that children’s scores on the SCAS ‘filler’ items, broadly measuring self-esteem, and the total scores on the sources of happiness scale, significantly predicted the anxiety ratings teachers assigned to pupils, over and above their SCAS scores. The interview data also suggested that, rather than being a distinct set of symptoms, anxiety was perceived as an underlying construct at the root of several other outcomes:

“Anxiety’s probably deeper (.) I think worry is more well I suppose worry might be more specific that there’s a specific thing that that the worry is focused on so it may just be that child is worried about their work but anxiety is probably I think a wider, you know, anxiety about everything really where there might be a root cause but it pervades everything.”

Teachers varied descriptions of anxiety symptoms and related behaviours extended to anxiety subtypes. When pressed to describe what obsessive-compulsive symptoms teachers had witnessed, teachers offered examples of behaviours that stretched the definition of obsessive-compulsive:

“One child in particular in year 1 has a need to touch other children and I think that’s the most, I’m just going through all of them, all the classes I teach. Erm, that’s probably the only one that really springs to mind.” (ID13)

“There’s a thing that a couple of children do, have done this year. And I know it’s something that kids do. Which is to chew. You know chewing their sleeve. So it’s just soaked you know.” (ID23)

Teachers’ inability to describe common examples of obsessive-compulsive symptoms such as repeated checking, washing and ordering, supports the finding from the quantitative stage of the study that obsessive-compulsive symptoms are

among those least easily identified by teachers. The interview data suggested that teachers were not unaware that pupils experienced these symptoms; around half of the teachers interviewed indicated that they thought these behaviours were common, but recognised them as “*harder to spot*” (ID25). Teacher ID13 pointed out that “*when they would wash their hands they would be in play time or they’d be in the toilet*” whereas Teacher ID16 suggested that “*you’re so busy with everything that you might not pick them up.*”

7.2.3 The genuineness of symptoms

The third central theme evident in the data set related to the perceived genuineness of common physical symptoms, such as headaches, stomach aches and nausea. Teachers drew a distinction between real and made-up symptoms, describing three types of physical symptoms in their interviews: genuine illnesses with a clear physical cause, ‘psychosomatic’ symptoms and made-up illnesses, with the lines often blurred between the second and third of these. Two teachers, who both had relatively poor somatic sensitivity scores, described children using illness as an excuse to get out of doing things they did not want to do. When asked if she had taught any children who complained of physical symptoms, teacher ID20 responded:

“Not through anxiety, only through work avoidance. I’ve got a tummy ache I need to go the medical room because I don’t want to do maths - that kind of thing” (ID20).

This sentiment was echoed by teacher ID25:

“It’s that time near Christmas and everyone is tired by Christmas and they start to use excuses, because they don’t want to do what you’re asking them to do but it’s amazing how fast it picks up when it’s the class party”.

Teachers’ questionnaire responses revealed that as a group, teachers believed that children were more likely to exaggerate physical symptoms than symptoms of anxiety. In line with this finding, it was evident from the interview data that while anxiety was seen as being feasibly time sensitive and linked to certain events or

activities, physical symptoms were only perceived as being 'genuine' if they continued throughout all activities:

"So they come in in the morning and say they're poorly and I normally say, let's give it until break time, and it depends on what they're doing, if they're doing something really fun they'll perk up and you go, oh ok, you weren't really very poorly you just didn't want to come into school that day." (ID25)

Teacher as detective A subtheme identified within this broader theme was the role of the teacher as 'detective' in uncovering whether symptoms in their pupils were 'genuine' or not. Teachers described using behavioural cues to make decisions about the genuineness of children's symptoms, although interestingly the behavioural cues perceived as being indicative of 'real' symptoms varied, even among the following two teachers, who both had relatively high somatic sensitivity scores:

"There's some children where you know they're actually sick because they go very very quiet, they almost don't speak to you they don't flag it up at all erm that's when you know they're, that's when I worry that this child is sick. When a child is persistently, regularly, making an effort to come to me saying 'oooh' you know when you can tell they're feigning it a little bit and they're regularly, and they're regularly coming to you, that's when I'm like I don't think you're really sick because you've got the energy to - you look fine, you're running around fine at play time." (ID53);

"The first approach will be, the child will say, 'I'm feeling unwell'. (.) 'Well it's nearly lunchtime so sit down and have a drink of water see how you feel'. Often, they won't mention it again. But if they then come back, you kind of look at them and they're not engaged and (.) you just kind of, you just know, that if they really are unwell then they'll keep telling you, actually, whereas, if it's just a one off they might forget about it." (ID13)

External factors were perceived as impacting on teachers' abilities to judge what was real and what was not:

“I say this is tricky, our classroom is very hot, it’s been very hot recently erm so that hasn’t helped, to try and deduct what’s going on” (ID25)

This same teacher described feeling bad if she got it wrong:

“Sometimes you do misjudge it, and you feel terrible, you feel absolutely awful, I do, but most of the time you can kind of judge it.”

Implicit in these statements was the perception that physical symptoms with a clear physical cause warrant action and intervention by the teacher, whereas complaints about physical symptoms without an obvious physical cause do not.

Mind body link The second subtheme identified within this overarching theme was anxiety or worry manifesting itself in physical symptoms. Several teachers described such symptoms and some teachers regarded such symptoms as being genuinely experienced by the child:

“If you’ve got anxious about something your tummy will ache.” (ID25);

“I think mind and body are very linked and I really think that y’know there might not be a physical reason for them having a tummy ache but I don’t believe that they’re going ‘what can I say can I say, I’ll make up a tummy ache’, I do believe they are experiencing those symptoms definitely.” (ID39).

In other accounts it was implied that although children were experiencing the symptoms, the symptoms did not have the same level of gravitas:

“He was actually sent home on one or two occasions and then I recognised it wasn’t actually, it was more psychosomatic. Mum brought it up with me as well, cos when he was sent home she was like ‘actually, he wasn’t unwell, like, he’s just worried.’” (ID53)

Symptoms are a choice A smaller subtheme identified within this broader theme was the idea that children had a choice over whether they experienced physical

symptoms, and symptoms of anxiety. In the teachers' questionnaires, a sizeable proportion of respondents agreed at least slightly that children caused or exaggerated their own symptoms. This perception was also evident in teachers interviews, where teachers with both high and low levels of their own symptoms, as measured by the Depression, Anxiety, Stress scale, identified children as active agents in their own experiences:

"I mean there's this whole thing where if you say you're sick, and you talk yourself into it enough, you are going to feel those symptoms" (ID25);

"I think they're feeling it but I think they're feeling it because they bring it on themselves. I think it's often psychosomatic. The girl who didn't want to do PE so her foot (.) she had had an operation on her foot but it hurt every time we did PE. I think she probably believed it hurt, but equally it hurt because she didn't want to do the PE lesson. 'Ooh I don't want to do that I'm worried about doing that so if I say my foot hurts I don't have to do that and it really is hurting'. I think it causes it if that makes sense. I'm not sure if it's actual physical pain or not because half an hour later when she got to play with the nursery kids she was absolutely fine! But I do think they genuinely feel pain (.) but whether it's actual pain and not just psycho- does that make sense?" (ID29)

Children were perceived as having influence over both anxiety and physical symptoms:

"The most normal forms of anxiety in my class is tearfulness. I have maybe 5 or 6 children who if they can't do something will immediately jump to tears and I'm actually quite a stern teacher in a sense, I say to them unless you're physically hurt or something's really upset you you're not allowed to cry because it doesn't solve anything." (ID25)

7.2.4 Parents as helpers and hinderers

Teachers emphasised the role parents played in guiding their identification of anxious children. Parents were seen as both assisting and obstructing this process.

Two subthemes were identified here: The first related to parent child behaviour and the second to information gathering.

Parent child behaviour Teachers described how witnessing children's behaviour when they were with their parents, helped them to identify them as anxious. One teacher, for example, when asked how she identified anxious children, described how *"they might be reluctant to leave their parents"* (ID16). Similarly, another teacher described how a school policy, in which parents were allowed to come into the classroom with their children in the morning, gave him added insight into his pupils' emotional states:

"You get a mix of the parents who can come in, because they haven't got work to do or whatever or they've got the time to do it and you get the ones, the needy children I would say, for want of a better way of describing them, like the one I mentioned whose Mum is there right until kicking out time. You know, he's at the door still hugging his Mum and it's those things, you know." (ID24)

It was not just children's behaviour around parents that teachers highlighted, but also parents' behaviour itself:

"There were some different children, but this one in particular, the parents are very pushy. They're always demanding more homework, more complicated homework. I know that his older brother went to a private school quite high attaining and that, that combined with what I was observing erm of the boy in my class made me feel that it's it's anxiety related and he sort of admitted himself that he gets stressed out in tests." (ID53)

This same teacher described the importance of using different sources, including parents, to help build a case for categorizing a particular child as anxious or somatising:

"I think it's just about putting the pieces together actually. When you meet the parents and you gauge what they're like, and you know like I said before

you know there are some who are demanding of their children, quite forceful, pushy, in maths in particular, ask for extra extra maths.” (ID53)

On more than one occasion, parental pushiness, accompanied teachers’ descriptions of anxious children, for example:

“When I think Mum, very very very full on parents, lovely parents, but really keen for her to make masses of progress.” (ID48)

Teachers described becoming aware of anxious behaviours in parents as well in children, and in noticing a link between the two. In one case, a teacher described how a group of parents voiced concerns over a fellow member of staff’s teaching. The way parents became involved with the issue was seen as symptomatic of their own anxiety, which in turn was perceived as impacting on the children:

“There’s kind of a feedback loop where it feeds into each other, they [the parents] are asking questions to have their fears confirmed at the end of the day, and they [the children] then pick up on that so they know what parents want to hear, but they say it, which makes the parents more anxious.” (ID23)

Parents as informers Teachers, particularly those with better sensitivity scores, emphasised the role parents played in helping them identify anxious or somatising children, by passing on relevant information. When asked about how confident he felt in identifying an anxious child, one teacher responded:

“I’m pretty sensitive actually; I feel I would be quite attuned to it, I like to think. The other thing is, parents do tell you. They do tell you.” (ID23)

Teacher ID23’s confidence in his ability to recognise symptomatic children gains some support from his anxiety sensitivity score, which was better than average. Other teachers also described parents voluntarily offering relevant information:

“So parents would say, ‘oh it’s really unusual but she no longer wants to come to school and she really loved to come to school, or he, but doesn’t, and that’s quite rare, I’m pleased to say.” (ID13);

“Mum brought it up with me as well, ‘cos when he was sent home she was like ‘actually, he wasn’t unwell, like, he’s just worried.’” (ID53).

In other cases, teachers brought up the symptoms with parents:

“The thing with anxiety is that you know, we do see parents as well, so you can always ‘they had a bit of a tummy ache today’, y’know, and it’s something you can just informally discuss, which is helpful.” (ID20).

Teachers also pointed out occasions where the information parents provided was viewed as problematic in some way. For example, for one teacher, the way the information was transferred was seen as inappropriate:

“There’s one boy in my class, he’s constantly anxious. He’s quite immature, he’s erm, from a very well off background for sure, he came from a private school, I think this school environment has been quite a shock for him, erm and his Mum says that in front of him stood there, which is often an issue.” (ID24)

Another teacher criticised parents for not passing on information which could help them recognise vulnerable children:

“Certainly parental splits cos that happens quite a lot you know unfortunately. And some parents are good at telling you it’s happening some aren’t so it’s much better to know.” (ID48)

7.2.5 It takes one to know one.

One additional small theme identified in the data set related to teachers own experiences of internalising symptoms. Teachers’ scores on the Depression Anxiety Stress scale in the first stage of the study indicated they experienced relatively high levels of psychological distress. In their interviews, teachers described in greater detail how their experiences affected them:

“I would get like tummy troubles in the morning before going into work just and I think that was aggravated by stress, cos when the holidays come round

it goes back to normal - but days when I'm working I'd sometimes be going to the toilet like four or five times before leaving for work cos like get stomach cramps and I knew that had something to do with like I don't know slightly irritable bowel I knew it was being aggravated by stress." (ID53);

"I do have trouble sleeping sometimes because when I turn the light out that's when I think about stuff. My brain has time to think because there's nothing else distracting me (.) it's not all the time otherwise you wouldn't see me looking like this I'd be asleep already but I have noticed that, y'know and again I can't track that throughout the year. There are more times where I just feel exhausted and that's when I get weepy if anything." (ID25)

In the quantitative data, there was not a clear relationship between teachers' own symptoms of psychological distress and sensitivity to internalising symptoms in pupils. Only one measure, the revised Obsessive-Compulsive Inventory, was positively associated with anxiety sensitivity, while mild/moderate levels of anxiety on the Depression Anxiety Stress scale were associated with better somatic sensitivity scores than 'normal' or 'severe/extremely severe' levels of symptoms. It was evident from teachers' interviews however, that regardless of their sensitivity scores, teachers perceived their experiences of anxiety and depression as helpful in identifying pupils' symptoms. For example, teacher ID24, who had relatively poor sensitivity scores, explained how:

"The fact I've gone through that means I can really recognise it and see it in them erm so I've got this quite tough side to me I'm known as being quite strict but there's another side as well that I do get, I feel I get what they're sort of going through erm if you've not experienced stress and anxiety it must be very hard to understand what it is and identify it." (ID24)

While the following two teachers, both with good sensitivity scores, described a similar perception:

"I think it makes you sensitive to to to children like I said kind of could sympathise with this boy who 'oh I don't quite feel right' why I suspected it

was more kind of being aggravated by his own anxiety erm cos of my experience.” (ID53)

“Struggling with stuff (.) definitely erm has helped me understand what they’re [experiencing] yeah sure.” (ID23)

Teachers did not describe symptoms of anxiety and depression as having a direct effect on their ability to recognise pupils’ symptoms, for example, in the case of anxiety, by making them hyper-vigilant to their environment. Instead, they described their experiences as affording them greater knowledge of why a pupil might be behaving in a certain way, and more empathy for that behaviour.

As a final point, an interesting additional finding from the quantitative stage of the research was a significant positive relationship between a class teacher’s psychological wellbeing and their class’s anxiety levels. Interviews were deemed a useful way of exploring the nature of this relationship. Although teachers recognised that stress from teaching had a negative impact on their home life and relationships:

“Teachers have said to me be careful don’t let it [affect your relationships] ‘we’ve seen lots of relationships fall apart especially at the start of teaching’” (ID53);

and that it could also have a negative impact on their work inside the classroom: *“I rush things, I make mistakes, I forget things” (ID16); “It can make you stressed with the children if you’re stressed and under pressure” (ID20)*”; the effect of teacher stress on pupils was generally perceived as being confined to the occasional bout of short temperedness, rather than any significant long term impact. One teacher, for example felt his pupils were oblivious to his depression:

ID23: This year I did suddenly kind of get very low (.) about four months ago, really low.

LN: I’m really sorry to hear that

ID23: Yeah I just kind of 'oh God' I sort of collapsed. And er and I just (.) I couldn't go in but it was only two days still and it was a Monday and a Tuesday I didn't go in, I was feeling fucking shite. And then I went in on the Wednesday and I got through it and I kind of think 'God, wow, I'm here but I'm not really here'. Erm, but you know, I don't think the children knew. You know. I don't think they knew.

Another described hiding his anxiety from pupils:

"I'd get to the end of the afternoon and I would feel [mimics deep and heavy breathing] (.) palpitations so on the surface I'm all calm they've had a very nice afternoon, I know they're quite engaged but (.) yeah." (ID13)

It was apparent that teachers did not perceive their anxiety or depressive symptoms as having an impact on their pupils. In turn, teachers mainly cited influences outside of the classroom for their own stress:

"It's the paperwork and the bureaucracy and the demands of assessment and government changes and things like that. If you could just come to work, stand in front of your class and teach it would be a great job." (ID20)

But they also pointed out the effect the emotional wellbeing of their pupils, had on them:

"Having been in secondary for 7 years which is a relatively long time and then coming to primary it's like bloody hell do they expect me to be a psychologist, a social worker, a teacher, managing TA's (.)" (ID13);

"You can't just switch off and not care it's really hard so that in itself is quite stressful. If there's particular children you're concerned about it's really hard on a Friday night or Saturday evening to be 'wahey kick back', you've got that niggling worry." (ID53)

The comments provide further insight to the findings from the quantitative teacher questionnaires, on which the majority of teachers indicated that they felt just as

responsible for children's emotional wellbeing as their academic progress, and in addition felt just as responsible as parents for children's emotional wellbeing. These accounts suggest that placing increasing responsibility for pupils' mental wellbeing on teachers may have implications for teachers' own mental health.

7.3 Summary

In summary, this chapter addressed the question of how teachers identify children they perceive to be anxious or somatising. It should be made clear that this is a different question than that of how teachers identify children who self-report (or whose parents report) high levels of anxiety or somatic symptoms; the data from the quantitative aspects of the study suggested that as a group teachers had only modest ability in identifying such children. Content analysis on the descriptions of children perceived as having 'debilitating' levels of anxiety, provided by the 51 teachers who completed rating forms, revealed that crying was the most commonly cited symptom, along with behaving in a way that was withdrawn or avoidant. Stomach aches were the most commonly cited 'physical symptom without an obvious physical cause', followed by headaches. Themes identified from a sample of ten teachers (sampled to include participants from across the spectrum of 'sensitivity scores' – the concordance between teacher's ratings of symptoms and children's self-reported scores) indicated a perception among teachers that anxiety could be identified through oppositional behaviour and the use of anxiety as an 'all-encompassing term' to refer to many different sorts of negative behaviour. In terms of somatic symptoms, teachers identified a distinction between genuine and non-genuine physical symptoms. Teachers also described how parents helped them come to decisions regarding children's symptoms, by the information they passed on but also by the way parents and children interacted with each other. Finally, there was a perception (by teachers whose ratings showed both better and poorer concordance with children's self-reported ratings) that teachers' own experiences with poor mental health helped them to recognise, and empathise with, anxious and somatic pupils.

Chapter 8 Discussion and Conclusions

This chapter begins with a consideration of the strengths and limitations of the study design. This is followed by a summary of key findings in respect to the hypotheses and the existing literature, and an outline of the original contribution of the research. The chapter finishes with suggestions for further research, and final conclusions.

8.1 Strengths and limitations of the current study

8.1.1 Design

One of the biggest strengths of this study was its use of both quantitative and qualitative methodologies in a two-stage design. This enabled an investigation of teachers' abilities to identify anxiety and somatic symptoms in their pupils alongside an investigation of how teachers make these decisions. Teachers' sensitivity to anxiety and somatic symptoms was measured in a number of ways. Teachers were not just asked to rate the anxiety and somatisation levels of all the pupils in their class but also to identify children they believed had 'debilitating' levels of symptoms, and provide qualitative data to explain why. Follow-up interviews with teachers allowed a deeper and more thorough investigation of a subsample of teachers' definitions of anxiety and somatic symptoms, and the symptoms recognisable to them.

Another advantage of the study design was the inclusion of parents', as well as children's reports of internalising symptoms, which has not been done in previous studies where teachers have been asked to nominate the most anxious children in their class. The fact that parent data were only collected in the last three schools was a limitation, however, partly attributable to financial resources available. Unlike teachers, parents had to complete questionnaires in their own time, and make the effort to drop them off at their child's school for collection, no doubt contributing to the relatively low participation rate of 25.4%, which, while not untypical for this sort of exercise, is another limitation of the study.

The way data collection was carried out was crucial to the study. Teachers completed rating forms and the 'Teacher Wellbeing' questionnaire during lesson time while I administered questionnaires to their pupils. This procedure no doubt contributed to the high participation rate: 51 of the 52 teachers who were asked to take part completed rating forms, and 50 completed questionnaires, limiting potential bias in the sample. This also had the practical benefit that, with the exception of those who consented to an interview, teachers did not have to give up any of their time outside of lessons to take part, but also from a research perspective ensured that both parties were reporting on children's symptoms during the same time frame ('over the last two weeks'). Being present while teachers and children completed questionnaires meant I could answer any questions participants had about the questionnaires and rating forms, and check for missing data, at the time.

The use of an opt-in rather than opt-out consent procedure, which in this case resulted in only five children being prevented from participating by their parents, was an important strength of the study design. This was considered acceptable, and approved by the ethics committee, since the research was not considered to pose anything more than a minimal risk to children. The resulting high participation rate meant that teachers were not constrained in who they could assign ratings to, or select as having 'debilitating' levels of symptoms, and contributed to a diverse and representative sample of children.

8.1.2 Sampling and power

The study benefitted from a large sample of 1346 children from seven schools across six London boroughs. This ensured a diverse selection of children within the parameters of the intended sample (schools where free school meal entitlement was in the average range for the South East of England), and the opt-out rather than opt-in procedure helped maximise the number of participants. Although power calculations informed the desired sample size of 48 teachers, and this was exceeded ($n = 51$), the study would have benefitted from a larger sample size of

teachers as some of the analyses on factors related to teachers' sensitivity scores were underpowered.

8.1.3 Measures

This study was based on the premise that even young children are valid informants of their own internalising symptoms. As outlined in the introduction, there is evidence to support this view (Brown-Jacobsen et al., 2011; Ialongo et al., 1995). Furthermore the research employed well-validated self-report measures of children's anxiety, the SCAS, and somatic symptoms, the CSI, both of which have previously been used in a UK context (Meesters et al., 2003; Vila et al., 2009; Walker & Greene, 1989). Although it is possible that in some cases, as Grills and Ollendick (2003) suggested, children may have lacked the cognitive or verbal maturity for the task, efforts were made to facilitate children's understanding of the items wherever possible: items were read aloud to children in years 3 and 4 (7-9 years), children were encouraged to ask questions about anything they did not understand, and teaching assistants were utilised wherever possible to assist children with poorer literacy skills. To facilitate children's understanding of the time frame for symptoms (the last two weeks) and to guide children's understanding of the response options on questionnaires such as 'a little' and 'a lot' children were taken through examples at the beginning of data collection. Another possibility is that social desirability may have affected children's responses, although efforts were made to reduce this effect where possible. Children were reassured the questionnaires were not in any way 'a test', and they were encouraged to fill in their questionnaires silently without any discussion with fellow pupils. They were also reassured that whilst their responses were not a 'secret' (they were free to talk to anybody they liked about their responses after class) they were confidential to the researcher which meant they would not be shared by her with others.

In the current study, the focus is on anxiety and somatic symptoms, rather than disorders; however it is interesting to note that an updated version of the Diagnostic and Statistical Manual of Mental Disorders (5th ed.; *DSM-5*; American Psychiatric Association, 2013) has been published in which some relevant changes

were made. Obsessive-compulsive disorder (symptoms pertaining to which are measured by the SCAS) is no longer included under the section on anxiety disorders; and the criteria for somatic symptom disorder has changed so that individuals need not present with a specific number of symptoms, nor must symptoms be necessarily medically unexplained, but symptoms individuals do present with must be significantly distressing and disruptive to everyday life, and be accompanied by excessive thoughts, feelings or behaviours in regards to those symptoms. These changes are relevant because to score a high total score on the CSI, children must endorse several somatic symptoms, and children's obsessive-compulsive symptoms contributed to their total SCAS scores; however these changes to the DSM were made after this study began.

This study also used well-validated measures of mental wellbeing in adults. The questionnaire given to teachers included the Depression Anxiety Stress Scale (Henry & Crawford, 2005), the Warwick Edinburgh Mental Wellbeing Scale (Stewart-Brown et al., 2011; Tennant et al., 2007) and the revised Obsessive-Compulsive Inventory (Foa et al., 2002). A particular strength was the assessment of different aspects of teachers' mental health, such as their depression, anxiety and obsessive-compulsive symptoms, when previous studies have assessed limited or less specific aspects of teachers' mental health (e.g., 'stress') which have not always been clearly defined, and have often been measured with only a limited number of questions. Some potentially mediating variables, such as teachers' interest in and feelings of responsibility towards pupils' emotional wellbeing were also assessed. It is a potential limitation of this thesis, however, that other variables, such as affective empathy, cognitive demand, cognitive bias and intolerance of uncertainty were not assessed in teachers directly.

While children completed detailed multi-item questionnaires on their symptoms, teachers used a simplistic 1-5 scale to provide a composite summary rating of pupils' anxiety and somatic symptoms. In some respects it would have been advantageous for teachers to complete comparable standardised scales of anxiety and somatic symptoms for every child in their class, and doing so would have allowed a more comprehensive assessment of teachers' sensitivity to a wide range

of anxiety and somatic subtypes and symptoms. In practice, such a methodology was not feasible given the demands it would have placed on teachers' time to complete two scales for each child in their class. By necessity, the rating scale employed was simplistic and limited in scope; yet in support of this decision, it provided information on teachers' perceptions of the anxiety and somatic symptoms across the whole of their class, thereby providing more detail than a simple nomination methodology would have afforded, while remaining quick and easy to complete. It also provided insight, independent of the filters of potentially sensitising questions, into teachers' perceptions and definitions of what anxiety is, and is comparable to methods which ask teachers to identify students for interventions or other support. This information would not have been provided by the administration of standardised scales to teachers.

Auger (2004), used a similar 1-5 rating scale in his assessment of teachers' accuracy in recognising depressive symptoms in 11-14 year olds, with one key difference. In the current study, teachers were asked to make relative, rather than absolute judgements of their pupils' anxiety and somatic symptoms. This was done to assess teachers' sensitivity to the variations in symptoms within their class, and so correlations between teachers' ratings and their pupils' self-reported scores could be calculated and standardised for use as dependent variables in further analysis. The use of a relative rating circumvented any tendency teachers might have had to assign all the pupils in their class the same or similar ratings, which would have reduced their potential to identify significant correlations with pupils' self-reported scores. A disadvantage of this method was that it did not assess teachers' abilities to identify pupils whose SCAS/CSI scores indicated potentially clinical levels of symptoms, and so this was assessed separately by asking teachers to identify any pupils they believed had debilitating levels of symptoms.

Although the bespoke questions relating to teachers' interest, feelings of responsibility and attitudes towards pupils' roles in causing, exaggerating and prolonging symptoms were piloted on student teachers, they would have benefitted from further development to maximise the distribution of responses, which remained limited on some questions even after adjustment. There is little

research which assesses teachers' attitudes towards their role in pupils' emotional wellbeing, however, and although the psychometric properties of the items included in this study could be improved, the data they provide is promising and suggest that this could be an interesting area for further research.

If it had been known that children's self-reported happiness and self-esteem, included as 'filler' items in the children's questionnaire, would prove to be stronger predictors of teachers' anxiety ratings than children's self-reported anxiety, then efforts would have been made to identify measures of these constructs with previously well established psychometric properties, or to develop more robust measures.

In conclusion, although there are some limitations to the study, these limitations do not undermine the validity of the findings or the original contribution they can make to the field.

8.2 Discussion of findings in respect to hypotheses and existing literature

8.2.1 Hypothesis 1 *It is hypothesised that there will be a positive association between teachers' ratings of children's internalising symptoms and children's self-reports of symptoms.*

There was a small but significant positive association between teachers' ratings of children's anxiety and both children's self- and parent-reported levels of symptoms. Children assigned low anxiety ratings by their teachers reported significantly lower levels of anxiety symptoms than those assigned medium or high anxiety ratings by their teacher, but the effect sizes were small. This is in keeping with studies which have found a small positive association between child and teacher reports of internalising symptoms where the three parties have used standardised scales (Achenbach et al., 1987; Miller et al., 2014), and also in keeping with a study by Headley and Campbell (2011) which found that teachers' reports of how likely they were to refer children to a guidance counsellor increased linearly with the level of anxious symptoms hypothetical pupils were described as having in vignettes.

While teachers were found to be sensitive, to a limited degree, to the variation in anxiety symptoms among their class, they struggled to identify those who may have debilitating levels of symptoms. Despite relatively high mean levels of symptoms reported by this UK sample of children in comparison to those found in some other countries, a fifth of teachers did not identify any children in their class as having 'debilitating' levels of anxiety. Those children who were identified by their teacher as having 'debilitating' levels of anxiety did not have significantly higher levels of symptoms than those who were not. Previous research in this area has produced somewhat contradictory results: Layne, Bernstein and March (2006) reported that children nominated by their teacher as being among the three most anxious in the class had significantly greater levels of anxiety on the Multidimensional Anxiety Scale for Children. In contrast, other studies have indicated that children who self-reported clinical or subclinical levels of symptoms were unlikely to be nominated by teachers as the most anxious in the class (Cunningham & Suldo, 2014; Dadds et al., 1997). Using a slightly different methodology to these two studies, in which teachers were asked to identify anyone they believed had 'debilitating' levels of symptoms, as opposed to the 'most anxious in the class', the present study found that less than ten per cent of children with elevated levels of anxiety (above 1.5 standard deviations above the mean) were identified, and rates of identification did not improve when either parent or child SCAS scores were used as indicators of debilitating levels of symptoms.

The present study extended previous research into teachers' recognition of pupils' internalising symptoms to somatic symptoms. It was hypothesised that there would be similar levels of agreement between teachers and children for anxiety and somatic symptoms, based on previous research that parent-child concordance rates are similar for somatic symptoms and anxiety symptoms (Meesters et al., 2003; Nauta et al., 2004; Smith et al., 2012). The findings from the current study were slightly different, as parents and children showed better agreement on total scores of the parent and child versions of the SCAS ($r = .49$) than the CSI ($r = .36$). A third of teachers did not identify any children in their class as having debilitating levels of 'physical symptoms without an obvious physical cause', compared to a fifth of

teachers who did not identify any anxious children. In keeping with the hypothesis, however, concordance between teachers' ratings and child and parent-reported somatic symptoms was remarkably similar to that found for anxiety. Teachers also correctly identified a similar percentage of children reaching the designated threshold for 'debilitating' levels of somatic symptoms (9.3%). Children identified as having 'debilitating' levels of symptoms did have significantly higher CSI scores than those who were not, but the effect size was small meaning in effect, teachers were relatively poor at identifying children with potentially clinical levels of symptoms.

Turning to theories regarding empathic accuracy, one interpretation of the small size of agreement between teachers' and children's reports of their anxiety and somatic symptoms is social status. Snodgrass (1992), suggested that individuals in positions of power were less empathically accurate than those in subordinate positions, an assertion supported by Kenny et al (2010) and Galinsky et al. (2006). Teachers' positions of authority over students may work against them in this circumstance. Another explanation could be that teachers as a group are not that familiar with their students, especially given the fact that teachers' have up to 30 children in their class. Although familiarity has not been as reliably associated with empathic accuracy as might be expected (Elfenbein et al., 2002) there is some evidence the two are associated (Zhang & Parmley, 2011).

In conclusion, the hypothesis that there would be a positive association between children's self- /parent-reported symptoms and teachers' ratings of children's symptoms was supported, but the strength of the relationship was weak, and teachers rarely identified children whose self-reported or parent-reported scores suggested clinical levels of symptoms. The implications of this finding are that teachers are not greatly sensitive to the variations in anxiety and somatic symptoms reported by their pupils, and may struggle to identify children who may benefit from further intervention or support.

8.2.2 Hypothesis 2 *It is hypothesised that certain types or patterns of anxiety and somatic symptoms reported by children and their parents will be more strongly associated with teachers' ratings of pupils' symptoms.*

It was theorised that teachers would be in a good position to observe signs of social anxiety, marked by a persistent fear of embarrassment or humiliation in social or performance situations, because of their ability to observe peer interactions and children's behaviour during social and academic challenges such as speaking in front of the class or tests. Conversely, it was theorised teachers would be least aware of obsessive-compulsive symptoms. Not only are many of these symptoms cognitive in nature (e.g., unwanted, and repetitive or intrusive thoughts, unnecessary and repetitive mental activities) but it has been claimed that secrecy is "a hallmark of childhood onset OCD" (Rapoport & Shaw, 2008, p.700), with many ritualistic behaviours characteristic of the condition carried out in private.

Partly in keeping with the hypothesis, teachers' reports of children's anxiety showed the strongest association with children's self-reported social anxiety and panic and agoraphobia. Only panic and agoraphobia scores, however, remained significant predictors of teacher ratings when each of the six subscale scores was entered as an individual score in a multiple regression analysis. This finding suggests that teachers are most strongly guided by children's panic and agoraphobia levels when making decisions on which children are anxious and is partly in keeping with the only other study known to investigate teachers' differential recognition of children's anxiety subtypes. Layne et al. (2006) found that children identified by their teacher as being in the top three most anxious children in the class had significantly higher levels of physiological symptoms of anxiety on the Multidimensional Anxiety Scale for Children, as well as symptoms of social anxiety and separation/panic. Layne et al. (2006) did not isolate subscale scores when assessing their association with nomination status, however, making comparisons difficult. It is important to note that similarities between this study and Layne et al.'s are confined to the rating scale, as in the present study children separately identified as having 'debilitating' levels of anxiety did not have greater levels of any of the six types of anxiety measured.

One possible interpretation for the finding is that items assessing panic and agoraphobia on the SCAS address physiological rather than cognitive symptoms of anxiety, and are therefore more readily observable by teachers. Another

interpretation is that items on the panic and agoraphobia scale, such as trouble breathing and feeling scared when there is nothing to be afraid of, more closely reflect how teachers' define anxiety, which perhaps pertains more closely to 'state' anxiety, defined as the body's short-term response to perceived environmental threat (e.g., physiological arousal), than trait anxiety, which has been used to refer to individual differences in the predisposition to experience symptoms of anxiety (Spielberger, 1966). In support of this interpretation, Headley and Campbell (2013) who administered teachers questionnaires asking them, hypothetically, how they would recognise an excessively anxious child, identified physical manifestations (which the authors defined as 'unconscious, uncontrollable bodily response to anxiety') as their most frequently cited responses. In the current study, however, few teachers cited physiological symptoms such as 'rapid breathing' or 'trembling' on their rating form as justification for why they had selected children as having debilitating levels of symptoms. An alternative explanation is that other behaviours or emotions mediate the relationship between panic and agoraphobia symptoms and teachers' anxiety ratings. Panic and agoraphobia was the SCAS subscale score with the strongest positive association ($r = .37, p < .01$) with the conduct problem scale on the Strengths and Difficulties Questionnaire in a UK sample ($n = 469$), for example (Essau et al., 2011). Perhaps it is these or other associated symptoms and behaviours which account for the predictive power of children's panic and agoraphobia scores.

The question of *how* teachers identify children they perceive to be anxious or somatising (as opposed to how they identify children as anxious or somatising who also self-report high levels of symptoms) was addressed more directly through the qualitative data. When asked to provide a short description of symptoms in those they had identified as having 'debilitating' levels of anxiety on their rating forms, crying was the most commonly cited symptom, along with avoidance behaviours. This finding is broadly consistent with two other findings: children's self-reported happiness and self-esteem were better predictors of teachers' anxiety ratings than children's self-reported anxiety and the definition of anxiety as an all-encompassing 'umbrella' term under which any negative behaviour or emotion might fall,

identified in teachers' interview data. Teachers also mentioned potentially disruptive behaviours such as irritability and poor attention as signs of anxiety on their rating forms, and the manifestation of anxiety as an oppositional behaviour was identified as a more dominant theme in interviews. This finding is perhaps not surprising given evidence that teachers are better at recognising externalising behaviours than internalising behaviours (Stanger & Lewis, 1993). In the absence of obvious symptoms, teachers' may be forced to rely on these more visible behaviours, whose potential for disruption might make them particularly salient to teachers. This is not to say it is a bad strategy; according to the DSM-5 criteria for generalised anxiety disorder, irritability and poor concentration are two of six (or three, for children) symptoms required to accompany excessive worry and anxiety to achieve a diagnosis (APA, 2013). The DSM-5 also outlines different criteria for social anxiety and phobias for children, in which anxiety may be expressed through crying and tantrums; whereas an impaired ability to concentrate is noted in the description of childhood OCD. A comparison of the written descriptions of pupils' symptoms between teachers with high and low anxiety sensitivity scores found many similarities between teachers' descriptions of anxious symptoms, but indicated teachers with better sensitivity scores may have more insight into the content of children's concerns, and their cognitions, in addition to their observable behaviours. Because many of the symptoms teachers described, regardless of their sensitivity scores, are not specific to anxiety disorders, the challenge teachers face in identifying anxious and somatic children is recognising whether anxiety and worry are at the root of, or co-occur with these behaviours, and in recognising children whose anxiety does not manifest in these symptoms.

In keeping with the hypothesis, parent-reported obsessive-compulsive symptoms were most weakly associated with teacher ratings, while parent-reported generalised anxiety was associated most strongly. In fact, parent-reported generalised anxiety showed the strongest association with teacher anxiety ratings of any of the child or parent SCAS subscale scores ($r_s = .29$). One interpretation is that generalised anxiety symptoms are indeed 'generalised' and are therefore pervasive in both home and school environments, or perhaps parents and teachers

are more likely to discuss children's general levels of worry and anxiety than specific fears or behaviours related to anxiety, such as obsessive-compulsive symptoms. Interestingly, parents and children showed less agreement on generalised anxiety than any other SCAS subscale, so the aspects on which parents and teachers agreed were not necessarily the same as the ones where parents and children agreed.

In line with the hypothesis, headaches were one of the two items on the Children's Somatisation Inventory most strongly associated with teacher ratings. In support of this finding, when teachers were asked to describe why they had identified children as experiencing 'debilitating' levels of somatic symptoms, headaches also featured prominently, being the second most frequently reported symptom. There are a number of potential explanations for why children's self-reported headaches were found to be a significant predictor of teachers' somatic ratings. Firstly, with the exception of feeling tired, headaches were the most frequently endorsed item by children on the CSI. Teachers may be more likely to be aware of 'common' symptoms, and unlike tiredness, teachers may perceive headaches as being less affected by a child's actions, such as staying up late or exercising, and more by individual differences. Secondly, children may find it less embarrassing and more socially acceptable to report headaches to their teacher than other items on the CSI, such as constipation and diarrhoea. Thirdly, children might be more affected by headaches in a classroom environment, where there can be loud noise and a need to concentrate, than sickness/tummy aches which could be related to food, or toileting related symptoms. Interestingly, although children's headaches were a better predictor of teachers' somatic ratings than stomach aches, stomach aches were cited more frequently on teachers' rating forms and mentioned more often in interviews, specifically in accounts which went on to become a theme on the genuineness of symptoms. Teachers appear to be just as aware of stomach aches as they are of headaches, but perhaps greater ambiguity over their nature and causes affected the relationship between the two measures.

Against prediction, the item 'feeling weak in parts of your body' on the CSI was just as strongly correlated with teacher somatic ratings as 'headaches'. This was not one of the most commonly endorsed symptoms by children, nor one of the least. One

potential explanation worthy of further investigation is that it reflects a latent variable related to more recognisable behaviours or symptoms.

Interestingly, children's self-reported generalised anxiety predicted teachers' somatic symptom ratings, but did not predict teachers' anxiety ratings. One possible implication of this is that teachers might be better at identifying children with generalised anxiety by using 'physical symptoms without an obvious cause' as a guide, rather than selecting who is the most 'anxious'. It is possible that teachers are inadvertently picking up on children with generalised anxiety by selecting children on the basis of their somatic symptoms only, but symptoms of anxiety and other emotional responses such as crying did feature in teachers' descriptions of children with debilitating levels of somatic symptoms, suggesting some teachers at least are identifying children as somatic through emotional rather than physical indicators. Unexpectedly, when assessed alongside the other anxiety subtypes, children's separation anxiety was significantly negatively associated with teachers' somatic ratings (and negatively, but not significantly, associated with teachers' anxiety ratings). This finding suggests children's worries about their home and family life are particularly untroublesome within a school context, although given the small impact these symptoms have on teachers' ratings; this finding should not be over-interpreted.

In conclusion, there was little meaningful difference in the association of different types and patterns of symptoms self-reported by children, and teachers' ratings, which were all relatively weak. No anxiety subtypes featured more strongly in those identified as having 'debilitating' levels of anxiety, or somatic symptoms, either. The significant contribution of children's self-esteem and happiness scores to the variation in teachers' anxiety and somatic symptoms, combined with the qualitative data, suggests that teachers often rely on behavioural indicators not unique to anxiety and somatic symptoms to guide their decisions.

8.2.3 Hypothesis 3 *It is hypothesised that certain factors in teachers will be associated with better concordance between teachers' ratings of pupils' symptoms and pupils' self-reports of symptoms on the SCAS and CSI*

It was hypothesised that there would be a non-linear association between teachers' levels of depression, anxiety and obsessive-compulsive symptoms and their sensitivity to children's anxiety and somatic symptoms. It was predicted that this relationship would be positive at low and moderate levels of symptoms and negative at high ones. Causal uncertainty theory (Vaughn & Weary, 2003; Weary & Jacobson, 1997) predicts individuals with depression will make greater efforts to detect causal relationships in their social environments in an attempt to reduce feelings of helplessness. This is supported by evidence linking depression to better judgements of individuals' emotional states (e.g. Harkness et al., 2005); anxiety is characterised by hyper-vigilance and has been associated with an attentional bias for threat cues (e.g. Hirsch et al., 2011), whereas an inflated sense of personal responsibility towards others is characteristic of OCD (Salkovskis et al., 2000). It was also hypothesised however, that the burden or cognitive load of very high levels of symptoms could deplete attention and working memory necessary to integrate information into judgements, and thus be negatively associated with sensitivity to pupils' symptoms.

Of the three measures, obsessive-compulsive symptoms had the clearest relationship with teachers' sensitivity scores, displaying a significant, albeit small, positive and linear relationship with teachers anxiety sensitivity scores. Salkovskis (1996) proposed that obsessive-compulsive disorder is characterised by beliefs that one is personally responsible for causing or preventing harm in regards to oneself or others. It is theorised that these perceptions give rise to behaviours such as checking, ordering and mental neutralising in an attempt to counteract unwanted thoughts or prevent outcomes which the sufferer finds subjectively unacceptable and has attached undue significance to. It was theorised that higher levels of obsessive-compulsive symptoms in teachers would be associated with greater feelings of responsibility for pupils' emotional wellbeing, and that this would lead to greater efforts in observing and understanding the emotions, thoughts and behaviours of their pupils. Against the hypothesis, there was no evidence that the relationship between OCD symptoms and teachers' anxiety sensitivity scores was mediated by teachers' feelings of responsibility to pupils, as measured by questions

in the teacher questionnaire. The majority of teachers indicated strong feelings of responsibility for their pupils' emotional wellbeing, however, so perhaps the lack of response distribution resulted in a failure to distinguish those with undue levels of responsibility beliefs. It is also possible that feeling responsible for children's wellbeing leads to greater efforts to observe and understand pupils' behaviour, but that these efforts result in inaccurate conclusions.

Another potential mechanism driving the small association between obsessive-compulsive symptoms and teachers' anxiety sensitivity is intolerance of uncertainty. This construct, defined as a tendency to react negatively to uncertainty on a cognitive, behavioural and emotional level (Dugas et al., 2004; Buhr & Dugas, 2009), has been implicated in the development of OCD (Calleo et al., 2010; Frost et al., 1997; Holaway, Heimberg, & Coles, 2006) where a desire for predictability is theorised to give rise to compulsions and rituals (Tolin, Abramowitz, Brigidi, & Foa, 2003). Individuals who are intolerant of uncertainty may be more thorough and considered in their assessments of others thoughts and behaviours, in a desire to draw conclusions and make the world a more controllable and predictable place. Intolerance of uncertainty has been identified as a cognitive risk factor for worry (Freeston et al., 1994), however, and so if this construct was behind the small positive relationship between teachers' anxiety sensitivity scores and OCD symptoms, we might have expected to find a similar relationship between sensitivity scores and this study's measures of anxiety and worry, although some research suggests intolerance of uncertainty is more strongly associated with obsessive-compulsive symptoms than other anxiety disorders (Steketee et al., 1998).

The lack of a correlation between teachers' depression levels and their anxiety sensitivity scores speaks against causal uncertainty theory, but perhaps it is co-occurring symptoms, such as OCD which have explained this link in the past. Alternatively, perhaps in depression additional processes are at play, such as poorer concentration, which 'cancel out' any benefits from causal uncertainty, particularly among those more severely depressed. In keeping with this, the pattern between depression and teachers' anxiety sensitivity scores appeared to be curvilinear, with

individuals with 'mild/moderate' levels of depression having better anxiety sensitivity scores than individuals with symptoms in the typical range or 'severe/extremely severe' levels of symptoms. But there was not a marked difference in sensitivity by depression severity, and unfortunately this is an instance where the small sample size prohibits interpretation of the findings. Interestingly, no relationship was found between individuals' levels of depression and their self-reported interest in pupils' emotional wellbeing, suggesting that even when teachers are struggling with high levels of depressive symptoms they remain interested in pupils' mental health, or perhaps felt reluctant to express their true feelings. The relationship between teachers' self-reported interest in pupils' wellbeing and their sensitivity scores bordered on statistical significance, suggesting the relationship between interest in others' wellbeing and ability to make judgements of their behaviour, is worthy of further research.

There were no linear relationships between teachers' psychological symptom measures and their somatic sensitivity scores, but individuals with 'mild/moderate' levels of anxiety had better somatic sensitivity scores than those with 'normal' and, particularly, 'severe/extremely severe' levels, and this difference accounted for over ten per cent of the variance in scores. It is hard to explain why individuals with mild/moderate levels of anxiety were more sensitive to children's somatic symptoms than to their anxiety symptoms, and why mild levels of depression did not follow a similar pattern. Perhaps different processes are at work in judgements of pupils' anxiety and somatic symptoms. One possible interpretation is that children's somatic symptoms might constitute more of a threat to hyper-vigilant, anxious teachers than children's anxiety symptoms, because teachers feel they have to act as a 'detective' to ascertain the causes and respond appropriately, but this is untested. Overall, caution should be urged when interpreting these findings due to the small sample sizes, and small effect sizes where there were significant results. Replication is needed before drawing any more definite conclusions.

The finding that being male better predicted anxiety sensitivity is not in keeping with the view that women are more empathically accurate than men, and goes against evidence such as that of McClure (2000) who concluded that there was a

female advantage in facial expression processing, and Hall, Murphy and Schmid Mast (2006) who found that females were better than males at recalling non-verbal behaviours. The only known study to compare teachers' gender in their sensitivity to pupils' internalising symptoms is that of Auger (2004) who did not find any differences between male and female teachers' sensitivity to depressive symptoms in their 11-14 year-old pupils. It may be a chance finding, but one untested possible explanation for the male advantage found in this particular study is the primary school context, and the characteristics of male teachers within it. Primary school teaching is not as common a career choice for males as it is for females. Therefore it could be theorised that while 'typical' women are attracted to the profession, males who choose primary school teaching have greater levels of interpersonal sensitivity than the 'typical' male. As only a fifth of the primary school teachers in this study were male ($n = 10$) and because of the small sample size, this finding should be interpreted with caution.

The lack of association between teachers' familiarity with pupils and their sensitivity to pupils' symptoms mirrors that of Auger (2004), who found that teachers' self-reported ratings of familiarity with pupils were not associated with their recognition of pupils' depressive symptoms. In this study, familiarity was measured as the number of weeks teachers had been in charge of their current class. Since all teachers in a school completed questionnaires on the same day, it was difficult to disentangle the effects of familiarity from any school effects, or time of year effects. Relationships with familiarity were not specifically hypothesised here, but future studies may benefit from coming up with clear definitions of it, and isolating it from other constructs when measuring its possible effects.

Finally, previous research by Robbins et al. (1994) found that physicians who blamed depressed patients for causing, exaggerating or prolonging their depression made fewer assessments of psychological distress, and were less accurate in those assessments than those who did not see patients as contributing to their condition, while Kolko and Kazdin (1993) found that parent-child disagreement on externalising symptoms was related to low parent acceptance of the child and Hall et al. (2009) suggested that conscientiousness and tolerance was associated with

nonverbal sensitivity. It was therefore theorised that teachers' attitudes towards children's role in the causation of presentation of symptoms might be positively associated with sensitivity to pupils' scores. This was not found, suggesting that attitudes to individuals' symptoms do not affect recognition of them. Interestingly, teachers' own psychological wellbeing was not associated with these attitudes either, implying that teachers with higher levels of depression, anxiety, worry, stress and lower levels of wellbeing were not more tolerant than the other teachers towards children displaying these symptoms.

In conclusion, the hypothesis that there would be a non-linear relationship between teachers' symptoms of anxiety, depression and obsessive-compulsive symptoms and their sensitivity to pupils' self-reported anxiety and somatic symptoms was only partly supported, and not in a straightforward way. Against hypothesis, teachers' feelings of responsibility for pupils' emotional wellbeing were not associated with better sensitivity towards pupils' self-reported symptoms; and nor were teachers' levels of interest in pupils' emotional wellbeing. Therefore the hypotheses that a relationship between teachers' obsessive-compulsive symptoms and their sensitivity to pupils' symptoms would be mediated by feelings of responsibility for pupils' symptoms, and that a relationship between teachers' depressive symptoms and their sensitivity to pupils' symptoms would be mediated by interest in pupils' emotional wellbeing, were also unsupported. The implications of this finding are that common symptoms of psychological distress do not confer a large advantage or disadvantage on teachers' sensitivity to children's anxiety or somatic symptoms, but that aspects of teachers' mental health, particularly their obsessive-compulsive symptoms and anxiety, are worth of further exploration in this respect.

8.3 Significant new findings

This study has generated several significant new findings. Although teachers' recognition and understanding of anxiety symptoms in their pupils has been investigated before (Cunningham & Suldo, 2014; Headley & Campbell, 2013; Layne et al., 2006), this is the first known study to assess teachers' sensitivity to anxiety symptoms among their entire class. Teachers' perceptions of the distribution of anxiety symptoms among their pupils was found to be reflective of the distribution

of children's self-reported symptoms on standardised scales. Teachers' perceptions of the levels of anxiety and somatic symptoms among pupils in their classes increased with the levels of anxiety and somatic symptoms reported by their pupils, but this was to a very limited extent. The overall picture based on data from teacher nominations is that teachers struggle to successfully distinguish pupils whose self-reported or parent-reported anxiety or somatic symptoms indicate significant distress or impairment.

As far as is known, this is the first study to assess teachers' recognition and understanding of somatic symptoms in their pupils. There are a few somewhat contradictory findings here. In some respects, teachers showed insight into the experience of somatic symptoms by their pupils. Teacher's ratings of their pupils' anxiety and somatic symptoms (defined for teachers as 'physical symptoms without an obvious physical cause') showed a strong positive association, suggesting teachers are well aware of the close links between the two sets of symptoms that children, parents and clinicians have reported in previous studies (and which parents and children report here). The finding that children's self-reported anxiety symptoms uniquely predicted teachers' judgements of the variation in their pupils' somatic symptoms, over and above children's self-reported somatic symptoms supports this view further. Lastly, children teachers identified as having debilitating levels of somatic symptoms also reported significantly higher scores on the Children's Somatisation Inventory suggesting, on first view, that teachers can and do recognise such symptoms. In effect, however, the effect size for that particular comparison was modest, only a small percentage of children who self-reported very high levels of somatic symptoms were identified by their teacher as having debilitating levels of symptoms, and a third of teachers did not identify any of the children in their class as having debilitating levels of somatic symptoms at all. These latter three findings indicate that in reality teachers find it relatively difficult to successfully recognise somatic symptoms, and in particular to distinguish children with potentially problematic levels of symptoms.

Findings from the other methodologies utilised in this study provide further insight into teachers views on children's somatic symptoms. Teachers' questionnaire data

indicated that teachers were more likely to believe children exaggerated their physical symptoms than their symptoms of anxiety, and interviews revealed that teachers drew a distinction between 'real', psychologically-driven and made-up physical symptoms. While anxiety was seen as being genuine regardless of whether it was time sensitive or linked to certain events or activities, somatic symptoms were only perceived as being 'genuine' if they continued throughout all activities. These findings suggest that teachers view physical symptoms without an obvious physical cause (functional somatic symptoms) as less valid than those with an obvious physical cause. This perception could act as a barrier to the identification of children whose *functional* somatic symptoms are significantly distressing.

Significant new findings also include the strategies teachers used to identify anxiety and somatic symptoms in their pupils. It is clear that teachers' do not identify children as anxious through the symptoms of anxiety measured in the Spence Children's Anxiety Scale (SCAS). While the SCAS measures symptoms of panic, generalised anxiety, social anxiety, phobias, separation anxiety and OCD in line with the DSM (4th ed.; *DSM-IV*; American Psychiatric Association, 1994); teachers identify children they perceive as anxious through crying, low confidence in relation to (or avoidance of) learning, poor focus and concentration, oppositional behaviours such as irritability and unhappiness. Given how well validated the SCAS is as a measure of children's anxiety, the relatively modest association between children's total and subscale anxiety scores and teachers' ratings suggests that these strategies are not optimal for this purpose. By linking the qualitative data with a quantitative assessment of teachers' sensitivity to pupils' symptoms, however, the study indicated that sometimes the same behavioural indicators might be used to draw conclusions with varying success. Crying featured in 'successful' and 'unsuccessful' teacher nominations, for example. This last point underscores the difficult task teachers have in this respect.

Although research has investigated the potential impact of parents' anxiety on their reports of their children's anxiety (De Los Reyes & Kazdin, 2005), this is the first known study to have investigated the effects a teacher's anxiety may have on their reports of children's symptoms. Two significant new findings from this study were a

positive association between teachers' obsessive-compulsive symptoms and their sensitivity to pupils' anxiety and a curvilinear relationship between teachers' anxiety and their sensitivity to pupils' somatic symptoms. Although these are intriguing new findings, their interpretation is limited by a relatively small sample size of teachers. They are therefore in need of replication before any definite conclusions can be drawn.

There were also some interesting new findings unrelated to the study hypotheses. Teachers were found to have higher levels of depression and anxiety than normative data for comparable adults suggest, and the finding that over a fifth of teachers had reported scores indicative of severe levels of anxiety, and over a tenth had scores indicative of severe levels of depression was particularly striking. Although previous studies have indicated that teaching is a stressful profession (Kyriacou, 2001; Smith et al., 2000), none was identified which used psychometrically reliable and valid scales to specifically assess depression, anxiety, obsessive-compulsive symptoms or teachers' wellbeing in the UK. The extent to which teachers indicated feeling responsible for pupils' emotional wellbeing, supported by the qualitative interviews, was also of note, with over a quarter of teachers agreeing 'very much' with the idea that they are just as responsible as parents for children's emotional wellbeing and over half indicating they agreed at least slightly.

Another finding outside of the study hypotheses was the association between teachers' levels of wellbeing and their pupils' mean self-reported anxiety and somatic scores. This association was more evident with teachers' depression, wellbeing and sources of stress scores and not so evident with their anxiety and worry scores, suggesting that environmental influences were at play here. The association between children's self-reported symptoms and teachers' depression and wellbeing scores appeared to be moderated by children's age, with a stronger association between teachers' depression and wellbeing scores and children's symptom scores in younger (children's) age groups than older age groups. One potential explanation is that children's anxiety and somatic symptoms manifest themselves or more frequently co-occur with challenging behaviours such as

tantrums or crying in younger children; and when anxiety manifests itself this way it has a greater impact on teachers' wellbeing than when it manifests itself through worry or other 'internalising' symptoms.

Given that these data are cross-sectional in nature it is not possible to draw conclusions on the directionality or the causal nature of this relationship. Another possibility is that teachers' levels of wellbeing, depression and the number of stressors in their environment lead to an increase in negative teaching behaviours such as chaotic, coercive or rejecting behaviours (Furrer et al., 2014), which may, in turn, give rise to greater levels of anxiety and somatic symptoms in pupils. A study by Hamre and Pianta (2004), for example, found that depression in non-familial caregivers was associated with less sensitive and more withdrawn behaviours towards children. Evidence suggests that such teaching behaviours can have a negative impact on pupils' wellbeing (Kuperminc et al., 2001; LaRusso et al., 2008).

8.4 Future research directions

There are a number of potential avenues for future research. First, a study featuring a larger number of schools and teachers could be used to further investigate whether teachers' obsessive-compulsive symptoms or anxiety are associated with their sensitivity to their pupils' symptoms, as is indicated here.

Other factors, in both teachers and children, could also be investigated for association with better and worse 'empathic accuracy' towards pupils' symptoms. Such factors in children may include demographic factors, such as children's socioeconomic status, in addition to other variables, such as their academic achievement. In teachers, situational variables, such as the ethos of the school teachers work in, and individual differences, such as teachers' sensitivity to non-verbal cues could be assessed for their association with empathic accuracy.

Future research could also focus on whether teachers can be trained to better recognise children's anxiety and somatic symptoms, and if so, what factors mediate improvement. Auger (2004) found that educating American secondary school teachers about symptoms of depression in students did not lead to improvements

in their recognition of pupils' depressive symptoms. Nevertheless, Auger's is the only known study to systematically examine the effects of training on teachers' sensitivity to pupils' internalising symptoms; there may be reasons why the training was not successful that can be identified and remedied.

Teachers' behavioural responses to children who exhibit anxiety and somatic symptoms, as well as their identification of such symptoms, could also be investigated. As described in the literature review, there is evidence to suggest that anxiety in children elicits over-control from parents which may unintentionally reinforce avoidant coping responses. The interactions between anxious/somatic children and their teachers could also be investigated. Recognition of children's symptoms may only be useful if teachers are aware of appropriate ways in which to respond to them.

Finally, the unexpected finding of a positive and significant relationship between teachers' depression, sources of stress and wellbeing, and children's anxiety and somatic symptoms is also a potentially fruitful area of further research. This research could investigate whether there is any evidence for a causal or bidirectional link between the two.

8.5 Conclusions

This study contributes to the field new knowledge regarding teachers' recognition and understanding of internalising symptoms in their pupils. Although teachers were somewhat sensitive to the variation in anxiety and somatic symptoms reported by their pupils, the extent of this sensitivity was limited. This is an important finding because schools are increasingly being encouraged to take a central role in promoting the mental health of their pupils and because anxiety and somatic symptoms are some of the most common and debilitating mental health symptoms in childhood. Although teachers felt high levels of responsibility for pupils' emotional wellbeing, they were rarely able to identify children whose self-reported or parent-reported anxiety or somatic scores suggested clinical levels of symptoms. The implications of this are that teachers may struggle to identify

children who may benefit from interventions or extra support in these domains, on their own.

When making decisions about children's anxiety, teachers were slightly more sensitive to children's levels of panic and agoraphobia than other anxiety types.

When making decisions about children's somatic symptoms, teachers appeared to use children's anxiety as well as their somatic symptoms. In general, however, the types of anxiety and somatic symptoms children reported did not make a meaningful difference to the likelihood of teachers recognising them as anxious or somatising.

In seeking to explore the strategies teachers use to make decisions regarding children's symptoms of anxiety and somatisation, thematic analysis revealed that teachers identified what they perceived as debilitating anxiety through crying and avoidant or withdrawn behaviours, and what they perceived as debilitating somatisation through headaches and stomach aches. Themes identified from qualitative interviews with a subsample of teachers included the perception that anxiety can be identified through oppositional behaviour and the use of anxiety an all-encompassing term which can be used to refer to any negative behaviour and emotions. The findings show that teachers do not rely on anxiety specific symptoms to make judgements about children's anxiety, but rather they draw on symptoms which may or may not co-occur with anxiety to limited success. The findings indicate that children with high levels of anxiety or somatic symptoms, who do not exhibit externalising symptoms such as crying or disruptive behaviour, or who do not have difficulties with school work, are particularly vulnerable to being 'missed' by teachers when it comes to accessing intervention or extra support.

It was clear from this study that teachers themselves exhibited high levels of depression and anxiety, which also needs to be recognised. Any additional role for teachers in recognising and supporting children with internalising symptoms should come with a consideration of the burden teachers are already under and the apparent difficulty of the task. In terms of teachers' 'empathic accuracy', potential relationships between aspects of teachers' own psychological wellbeing and their

sensitivity to pupils' symptoms indicated here may prove a valuable area for further research.

In conclusion, there are a number of potential advantages to placing schools at the centre of identification and intervention for psychological problems in children, but not all children's anxiety and somatic symptoms are linked clearly to achievement within an educational setting. Being sensitive to a child's anxiety and somatic symptoms means being sensitive to the whole pupil and not just their educational needs. It may require better communication between all members of the school community: teachers, parents, mental health professionals and, importantly, children themselves. All parties need to be listened to if both children and teachers are to be supported to develop good mental health.

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Appendices

Appendix 1: Teacher information leaflet

WELLBEING IN THE CLASSROOM

Information for teachers



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Who is carrying out the study?

The study is being carried out by Louise Neil, as part of her PhD at the Thomas Coram Research Unit, which is part of the Institute of Education. The Thomas Coram Research Unit (TCRU) carries out research related to children and young people in and outside their families, and to those who provide services for them in education, care, health and social service settings.

What are the aims of the study?

Teaching has been identified as a highly stressful profession. According to a recent study, nearly a third of teachers suffer from significant levels of psychological distress, however few studies have explored in detail the types of symptoms that teachers may experience. This study aims to find out more about different aspects of teachers stress and what impact it can have.

This study will also focus on stress in children. As you may be aware, children who suffer from anxiety problems are at an increased risk of experiencing social and academic difficulties as well as mood disorders, behavioural problems and substance misuse problems as they get older. However the vast majority of research into children's behaviour in schools has concentrated on disruptive behaviour rather than on anxiety or stress. This study will explore how recognisable pupils' symptoms of stress are in the classroom, and what patterns and subtypes of symptoms are most obvious to teachers.

What is the design of the study?

The study, which will involve a community population of children attending schools in or around London and the South East and their teachers, is in two stages, as follows:

1. In stage one; key stage two children will be given questionnaires to fill in about their thoughts and feelings; anxiety and physical symptoms.
2. At the same time, teachers will be asked to fill in a form, rating levels of anxiety and physical symptoms in their pupils. Teachers will then be asked to fill in a questionnaire about their own health and wellbeing, and what sorts of things they find stressful. At the bottom of the questionnaire teachers will be asked to tick a box if they are interested in hearing about the final stage of the research.
3. In stage two, a small selection of teachers who have ticked this box will be contacted to see if they would like to be interviewed, so we can find out more about stress in the classroom.

What will happen if I decide to take part?

1. Parents of the children in key stage 2 will be sent a letter explaining the research and providing them the opportunity to opt their child out of the study.
2. A researcher will visit key stage 2 classes, at a time to be agreed with head teachers. During the visit, questionnaires will be administered to pupils in class groups. The questionnaire will be read out to younger children and to those who struggle with literacy. It may be helpful to have children seated in literacy groups. If there are teaching assistants available to lend a hand, additional support is always welcome! Administration of questionnaires is expected to take around 30 minutes. An activity for any children who have opted out will be agreed beforehand.
3. While the researcher is administering a questionnaire to your class, you will be given a form and questionnaire to fill in.

Will the research be confidential?

Yes. ID numbers instead of names will be used on teacher forms and questionnaires, and on child questionnaires. No one apart from the researcher and her research supervisor will see any of the information that teachers provide. It will remain strictly confidential. Similarly, no one apart from the researcher, and possibly the research supervisor will see any of the information pupils provide in questionnaires.

Can I change my mind about taking part?

Yes, you can change your mind about taking part at any time. If you decide to withdraw from the study, your data will not be used.

Who has approved the research?

Ethical consent to carry out this study has been granted by the Institute of Education. This means that ethical procedures, such as confidentiality, have been reviewed by a third party (other than the researcher and research supervisor) and approved.

Do I get anything in return?

Yes. Once the study has been completed, you will receive a newsletter about the study findings. This will compare levels of stress in teachers in this study to other community populations; and detail the types and sources of teacher stress.

How can I find out more?

If you want to get in touch you can telephone Louise Neil at the Thomas Coram Research Unit on 0207 612 6448 (there is an answer phone after working hours) or email l.neil@ioe.ac.uk. You can also write to Louise Neil, Thomas Coram Research Unit, 27-28 Woburn Square, London, WC1H 0AA

Appendix 2: Parent opt-out letter



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XXXXXXX

Dear Parent / Carer,

XXXX Primary School has kindly agreed to help with a research study I am carrying out. I am writing to tell you about it and want to make sure you are happy for your child to take part, along with their class. The study will explore symptoms of stress in the classroom (for both teachers and pupils) and how recognisable pupils' symptoms of stress are to teachers. It's hoped that the research findings will be used to help support children and teachers in the future.

Who is carrying out the research?

My name is Louise Neil and I am a PhD student at the Thomas Coram Research Unit which is part of the Institute of Education, at the University of London. The unit carries out research on the health and well being of children, young people and families.

What will it involve for my child?

I will ask children to fill in a short questionnaire in class. They will be asked about the sorts of things they find stressful as well as what sorts of things make them feel better when they feel worried or upset. Children's names will not appear on their questionnaires and all the information gathered will be treated as strictly confidential. All children in Key Stage 2 at your child's school are being asked to take part in the study.

What do I do now?

Nothing - if you are happy for your child to take part in the study by filling in a questionnaire.

If, however, you don't want your child to take part, then please contact the school office at XXXX on XXXXX, by the morning of XXXXXXXX. If you have any questions relating to the study, you can also contact me at TCRU using the details at the top of this letter. I hope all children will be able to take part, as it would be wonderful to have as wide a range of responses as possible.

Thank you for your help.

Yours sincerely,

Louise Neil
Research Officer and Doctoral student

PUPIL WELLBEING RATING FORM:2

Class:	Class ID:
Teacher:	Teacher ID:
<p>Are there any children in your class who you believe have <i>debilitating</i> levels of anxiety? By debilitating we mean it causes significant distress or impairment. If so, please write their ID NUMBERS (from the previous page) below (please write ID numbers only, not names), and a short description of their symptoms. If you do not believe there are any children in the class with debilitating levels of anxiety, please leave the table below blank. If you believe there are more than three, please write down the three who you believe have the most debilitating levels of anxiety.</p> <p>After you have finished, please repeat the process for children you believe have debilitating levels of physical symptoms without an obvious physical cause. Physical symptoms without an obvious physical cause might include aches, pains, upsets (e.g. tummy), nausea, and tiredness.</p>	

<h3>Anxiety</h3>	
ID number here	Description here:
ID number here	Description here:
ID number here	Description here:
<h3>Physical Symptoms</h3>	
ID number here	Description here:
ID number here	Description here:
ID number here	Description here:

THANK YOU VERY MUCH!

Appendix 4: Teacher questionnaire

WELLBEING IN THE CLASSROOM

Teacher questionnaire



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SECTION A: WELLBEING

Part 1: Below are some statements about feelings and thoughts. Please circle the response that best describes how you have felt *over the last two weeks*

	None of the time	Rarely	Some of the time	Often	All of the time
1. I've been feeling optimistic about the future	0	1	2	3	4
2. I've been feeling useful	0	1	2	3	4
3. I've been feeling relaxed	0	1	2	3	4
4. I've been feeling interested in other people	0	1	2	3	4
5. I've had energy to spare	0	1	2	3	4
6. I've been dealing with problems well	0	1	2	3	4
7. I've been thinking clearly	0	1	2	3	4
8. I've been feeling good about myself	0	1	2	3	4
9. I've been feeling close to other people	0	1	2	3	4
10. I've been feeling confident	0	1	2	3	4
11. I've been able to make up my own mind about things	0	1	2	3	4
12. I've been feeling loved	0	1	2	3	4
13. I've been interested in new things	0	1	2	3	4
14. I've been feeling cheerful	0	1	2	3	4

SECTION A: WELLBEING Part 2: Please read each statement and circle a response indicating how much it has applied to you *over the past two weeks*.

	Not at all	To some degree, or some of the time	A considerable degree, or a good part of the time	Very much, or most of the time
1. I found it hard to wind down	0	1	2	3
2. I was aware of dryness of my mouth	0	1	2	3
3. I couldn't seem to experience any positive feeling at all	0	1	2	3
4. I experienced breathing difficulty (e.g. excessively rapid breathing, breathlessness in the absence of physical exertion)	0	1	2	3
5. I found it difficult to work up the initiative to do things	0	1	2	3
6. I tended to over-react to situations	0	1	2	3
7. I experienced trembling (e.g. in the hands)	0	1	2	3
8. I felt that I was using a lot of nervous energy	0	1	2	3
9. I was worried about situations in which I might panic and make a fool of myself	0	1	2	3
10. I felt that I had nothing to look forward to	0	1	2	3
11. I found myself getting agitated	0	1	2	3
12. I found it difficult to relax	0	1	2	3
13. I felt down hearted and blue	0	1	2	3
14. I was intolerant of anything that kept me from getting on with what I was doing	0	1	2	3
15. I felt I was close to panic	0	1	2	3
16. I was unable to become enthusiastic about anything	0	1	2	3
17. I felt I wasn't worth much as a person	0	1	2	3
18. I felt that I was rather touchy	0	1	2	3
19. I was aware of the action of my heart in the absence of physical exertion (e.g. sense of heart rate increase, heart missing a beat)	0	1	2	3
20. I felt scared without any good reason	0	1	2	3
21. I felt life was meaningless	0	1	2	3
22. I was not able to stop or control worrying	0	1	2	3
23. I worried too much about different things	0	1	2	3

SECTION A: WELLBEING Part 3: The following statements refer to experiences that many people have in their everyday lives. How much have the following distressed or bothered you over the *past month*?

	Not at all	A little	Moderately	A lot	Extremely
1. I have saved up so many things that they get in the way	0	1	2	3	4
2. I check things more often than necessary	0	1	2	3	4
3. I get upset if objects are not arranged properly	0	1	2	3	4
4. I feel compelled to count while I am doing things	0	1	2	3	4
5. I find it difficult to touch an object when I know it has been touched by strangers or certain people	0	1	2	3	4
6. I find it difficult to control my own thoughts.	0	1	2	3	4
7. I collect things I don't need.	0	1	2	3	4
8. I repeatedly check doors, windows, drawers, etc.	0	1	2	3	4
9. I get upset if others change the way I have arranged things.	0	1	2	3	4
10. I feel I have to repeat certain numbers.	0	1	2	3	4
11. I sometimes have to wash or clean myself simply because I feel contaminated.	0	1	2	3	4
12. I am upset by unpleasant thoughts that come into my mind against my will.	0	1	2	3	4
13. I avoid throwing things away because I am afraid I might need them later.	0	1	2	3	4
14. I repeatedly check gas and water taps and light switches after turning them off.	0	1	2	3	4
15. I need things to be arranged in a particular way.	0	1	2	3	4
16. I feel that there are good and bad numbers	0	1	2	3	4
17. I wash my hands more often and longer than necessary.	0	1	2	3	4
18. I frequently get nasty thoughts and have difficulty in getting rid of them.	0	1	2	3	4

SECTION B: SOURCES OF STRESS

To what extent do you find the following a cause of stress at work? Please circle your response to each statement.

	Not at all	A little	Some	Quite a bit	A lot
1. Teaching pupils who lack motivation	0	1	2	3	4
2. Maintaining discipline	0	1	2	3	4
3. Time pressures and workload	0	1	2	3	4
4. Coping with change	0	1	2	3	4
5. Being evaluated by others	0	1	2	3	4
6. Dealings with colleagues	0	1	2	3	4
7. Administration and management	0	1	2	3	4
8. Role conflict and ambiguity	0	1	2	3	4
9. Poor working conditions (please specify)	0	1	2	3	4
10. Other (please specify)	0	1	2	3	4

SECTION C: SOURCES OF RELAXATION

Different people find different activities help them to feel better after a stressful or busy day at work. How much do the following activities help you feel better after a stressful or busy day at work?

	Not at all	A little	Some	Quite a bit	A lot
1. Watching TV	0	1	2	3	4
2. Internet or social networks	0	1	2	3	4
3. Drinking alcohol	0	1	2	3	4
4. Talking to close family or friend	0	1	2	3	4
5. Physical exercise	0	1	2	3	4
6. Socialising	0	1	2	3	4
7. Meditation or prayer	0	1	2	3	4
8. Other (please specify)	0	1	2	3	4

SECTION D: STRESS IN PUPILS

These are the last questions! Please indicate how much the following statements apply to you (and remember there are no wrong or right answers).

Over the last two weeks.....

	Not at all	A little	Some	Quite a bit	A lot
1. I've been feeling very interested in my pupils' emotional wellbeing	0	1	2	3	4

Generally.....

	Disagree very much	Disagree slightly	Neither agree or disagree	Agree slightly	Agree very much
1. I am responsible for my pupils' emotional wellbeing	0	1	2	3	4
2. Pupils often cause their own anxiety	0	1	2	3	4
3. Pupils often exaggerate their own physical symptoms	0	1	2	3	4
4. Pupils often prolong their own anxiety	0	1	2	3	4
5. It is a teacher's job to protect pupils from any sort of emotional distress	0	1	2	3	4
6. I am too sensitive to feeling responsible for my pupils' emotional wellbeing	0	1	2	3	4
7. Teachers are just as responsible as parents for pupils' emotional wellbeing	0	1	2	3	4
8. Pupils often exaggerate their own anxiety	0	1	2	3	4
9. Pupils often cause their own physical symptoms	0	1	2	3	4
10. Pupils often prolong their own physical symptoms	0	1	2	3	4
11. I feel just as responsible for my pupils' emotional wellbeing as their academic progress	0	1	2	3	4

Background Details

This section will be removed from the rest of the questionnaire

Teacher ID

I am Male/Female (please circle)

Year born.....

Job title.....

Years teaching current class.....

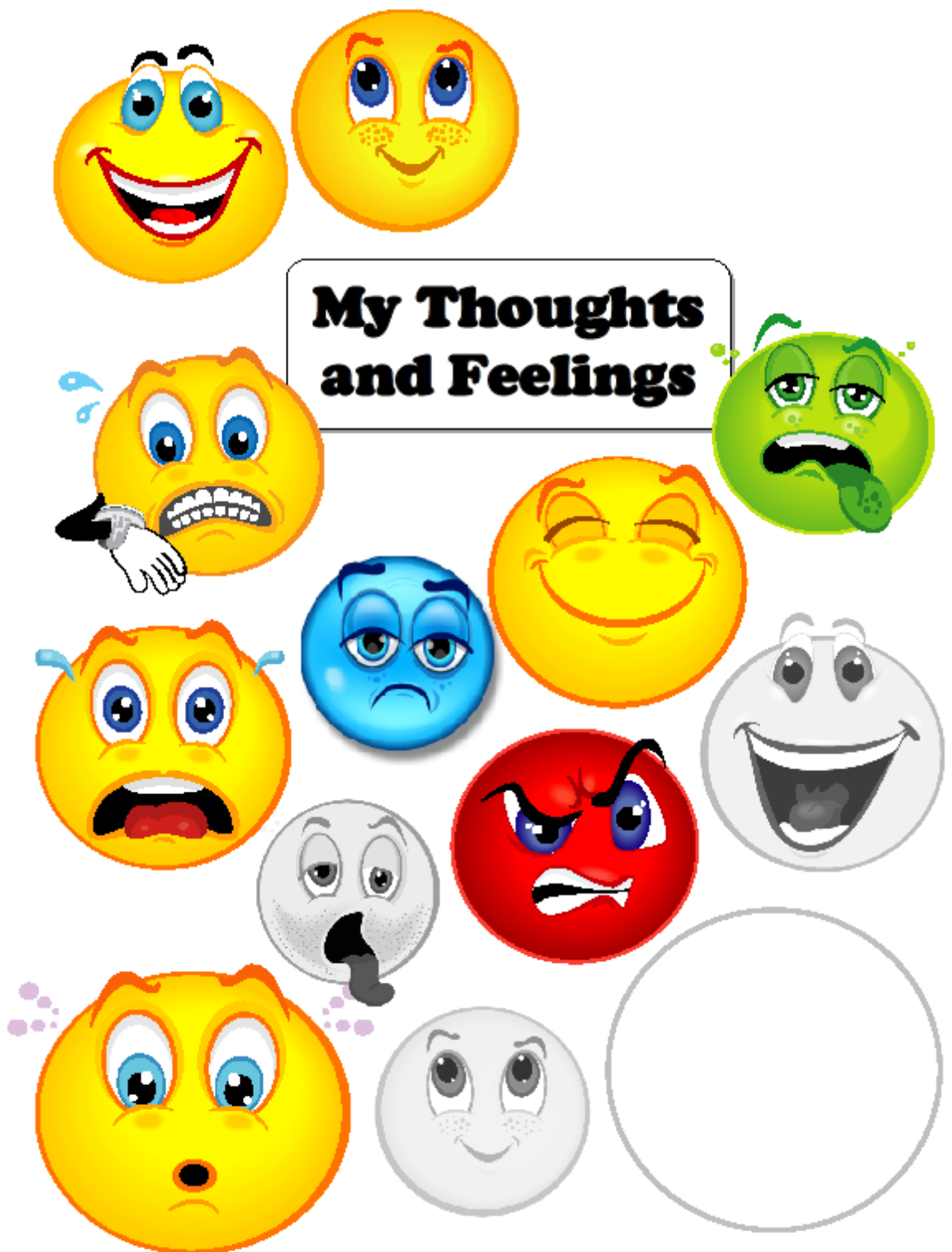
Weeks teaching current class.....

Years working as a teacher

A selection of teachers will be asked to take part in the second stage of this research. This second stage will involve a short interview about stress in teachers and pupils. If you are chosen, we would like to contact you to give you some more information about the research so you can decide whether you would like to take part. Would this be alright?(please circle) YES/NO

If YES please let me know your telephone number and email address:

Appendix 5: Child questionnaire



I am a researcher from the Institute of Education, University of London and I am asking you, along with lots of other children in Years 3 to 6, to help me with my research by completing my questionnaire.

Remember:

- I want to learn from you because you know the answers - it is about **your** thoughts and feelings
- It is **not a test** - there are **no right or wrong answers**. Only you know the answer for you.
- If you have any questions, or if there is anything you don't understand, please ask.

Thomas Coram Research Unit

Tel: 020 7612 6448

Email ineil@ioe.ac.uk



My Thoughts and Feelings

First tell us a bit about you!

I am a Girl / Boy I am years old.

BELOW IS A LIST OF WAYS YOU MIGHT HAVE FELT OR ACTED RECENTLY.
PLEASE CIRCLE HOW *MUCH* YOU HAVE FELT THIS WAY DURING THE LAST TWO WEEKS.

1	I worried about things	Not at all	A little	Quite a bit	A lot
2	I was scared of the dark	Not at all	A little	Quite a bit	A lot
3	When I had a problem, I got a funny feeling in my tummy	Not at all	A little	Quite a bit	A lot
4	I felt afraid	Not at all	A little	Quite a bit	A lot
5	I felt afraid of being on my own at home	Not at all	A little	Quite a bit	A lot
6	I felt scared when I had to take a test	Not at all	A little	Quite a bit	A lot
7	I felt afraid if I had to use public toilets or bathrooms	Not at all	A little	Quite a bit	A lot
8	I worried about being away from my parents	Not at all	A little	Quite a bit	A lot
9	I felt afraid that I would make a fool of myself in front of people	Not at all	A little	Quite a bit	A lot
10	I worried that I would do badly at my school work	Not at all	A little	Quite a bit	A lot
11	Other children liked me	Not at all	A little	Quite a bit	A lot
12	I worried that something awful would happen to someone in my family	Not at all	A little	Quite a bit	A lot
13	I suddenly felt as if I couldn't breathe when there was no reason for this	Not at all	A little	Quite a bit	A lot
14	I had to keep checking that I had done things right (like the switch was off, or the door was locked)	Not at all	A little	Quite a bit	A lot
15	I felt scared if I had to sleep on my own	Not at all	A little	Quite a bit	A lot
16	I had trouble going to school in the mornings because I felt nervous or afraid	Not at all	A little	Quite a bit	A lot
17	I was good at sports	Not at all	A little	Quite a bit	A lot
18	I was scared of dogs	Not at all	A little	Quite a bit	A lot
19	I couldn't seem to get bad or silly thoughts out of my head	Not at all	A little	Quite a bit	A lot
20	When I had a problem, my heart beat really fast	Not at all	A little	Quite a bit	A lot
21	I suddenly started to tremble or shake when there was no reason for this	Not at all	A little	Quite a bit	A lot
22	I worried that something bad would happen to me	Not at all	A little	Quite a bit	A lot
23	I was scared of going to the doctors or dentists	Not at all	A little	Quite a bit	A lot

**BELOW ARE SOME OTHER WAYS YOU MIGHT HAVE FELT OR ACTED RECENTLY.
PLEASE CIRCLE HOW MUCH YOU HAVE FELT THIS WAY DURING THE LAST TWO WEEKS.**

24	When I had a problem, I felt shaky	Not at all	A little	Quite a bit	A lot
25	I was scared of being in high places or lifts	Not at all	A little	Quite a bit	A lot
26	I was a good person	Not at all	A little	Quite a bit	A lot
27	I had to think of special thoughts to stop bad things from happening (like numbers or words)	Not at all	A little	Quite a bit	A lot
28	I felt scared if I had to travel in the car, or on a bus or a train	Not at all	A little	Quite a bit	A lot
29	I worried what other people thought of me	Not at all	A little	Quite a bit	A lot
30	I was afraid of being in crowded places	Not at all	A little	Quite a bit	A lot
31	I felt happy	Not at all	A little	Quite a bit	A lot
32	All of a sudden I felt really scared for no reason at all	Not at all	A little	Quite a bit	A lot
33	I was scared of insects or spiders	Not at all	A little	Quite a bit	A lot
34	I suddenly became dizzy or faint when there was no reason for this	Not at all	A little	Quite a bit	A lot
35	I felt afraid if I had to talk in front of my class	Not at all	A little	Quite a bit	A lot
36	My heart suddenly started to beat too quickly for no reason	Not at all	A little	Quite a bit	A lot
37	I suddenly got a scared feeling when there was nothing to be afraid of	Not at all	A little	Quite a bit	A lot
38	I liked myself	Not at all	A little	Quite a bit	A lot
39	I was afraid of being in small closed places, like tunnels or small rooms	Not at all	A little	Quite a bit	A lot
40	I had to do some things over and over again (like washing my hands, cleaning or putting things in a certain order)	Not at all	A little	Quite a bit	A lot
41	I was bothered by bad or silly thoughts or pictures in my mind	Not at all	A little	Quite a bit	A lot
42	I had to do some things in just the right way to stop bad things happening	Not at all	A little	Quite a bit	A lot
43	I was proud of my school work	Not at all	A little	Quite a bit	A lot
44	I felt scared if I had to stay away from home overnight	Not at all	A little	Quite a bit	A lot



Well done!
That's the first one finished!

BELOW IS A LIST OF SYMPTOMS (OR FEELINGS) THAT CHILDREN SOMETIMES HAVE. PLEASE CIRCLE THE RESPONSE WHICH SHOWS HOW MUCH YOU WERE BOTHERED BY EACH ONE IN THE LAST TWO WEEKS.

1.	Headaches	Not at all	A little	Some	Quite a bit	A lot
2.	Feeling faint or dizzy	Not at all	A little	Some	Quite a bit	A lot
3.	Pain in your heart or chest	Not at all	A little	Some	Quite a bit	A lot
4.	Feeling low in energy or slowed down	Not at all	A little	Some	Quite a bit	A lot
5.	Sore muscles	Not at all	A little	Some	Quite a bit	A lot
6.	Trouble getting your breath (when you're not exercising)	Not at all	A little	Some	Quite a bit	A lot
7.	Suddenly feeling hot or cold for no reason	Not at all	A little	Some	Quite a bit	A lot
8.	Numbness or tingling in parts of your body	Not at all	A little	Some	Quite a bit	A lot
9.	Feeling weak in parts of your body	Not at all	A little	Some	Quite a bit	A lot
10.	Feeling tired	Not at all	A little	Some	Quite a bit	A lot
11.	Feeling like you might be sick or having an upset tummy	Not at all	A little	Some	Quite a bit	A lot
12.	Constipation (when it's hard to go to the toilet or poo)	Not at all	A little	Some	Quite a bit	A lot
13.	Loose (runny) poo or diarrhoea	Not at all	A little	Some	Quite a bit	A lot
14.	Pain in your stomach (tummy aches)	Not at all	A little	Some	Quite a bit	A lot
15.	Your heart beating too fast (when you're not exercising)	Not at all	A little	Some	Quite a bit	A lot
16.	Being sick or throwing up	Not at all	A little	Some	Quite a bit	A lot
17.	Food making you feel sick	Not at all	A little	Some	Quite a bit	A lot
18.	Pain in your arms or legs	Not at all	A little	Some	Quite a bit	A lot



WHAT KINDS OF THINGS MAKE YOU FEEL HAPPY? (Circle one answer for each line.)

1	Friends or other children	Never	Sometimes	Often	
2	Schoolwork / lessons	Never	Sometimes	Often	
3	TV or computer games	Never	Sometimes	Often	
4	My mum and / or dad	Never	Sometimes	Often	
5	My brothers / sisters	Never	Sometimes	Often	I don't have brothers / sisters
6	Playing games or sports	Never	Sometimes	Often	
7	Being by myself	Never	Sometimes	Often	
8	Break time	Never	Sometimes	Often	
9	My pets	Never	Sometimes	Often	I don't have pets

Finally, is there anything else that makes you feel happy? No / Yes

If so, what is it?

Phew, well done,
you're finished!

Thank you very much for your help!



Appendix 6: Parent questionnaire

WELLBEING IN THE CLASSROOM

This questionnaire is part of an Institute of Education research study aimed at finding out how recognisable children's symptoms of stress are to teachers. As part of this research, it would be useful to collect information on how children think and feel, and the different things that worry them.

Please tell us about the child who brought this questionnaire home.

Your responses will be completely confidential and will only be used for research purposes. Once you have completed the questionnaire, please put it in the envelope provided and return it to the school reception for collection.

If you have any questions about this research, you can contact Louise Neil at l.neil@ioe.ac.uk or on 0207 612 6448.



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BELOW IS A LIST OF WAYS YOUR CHILD MIGHT HAVE FELT OR ACTED RECENTLY.
PLEASE CIRCLE HOW *MUCH* YOU THINK THEY HAVE FELT THIS WAY DURING THE LAST TWO WEEKS.

1	My child worried about things	Not at all	A little	Quite a bit	A lot
2	My child was scared of the dark	Not at all	A little	Quite a bit	A lot
3	When my child had a problem, s(he) complained of having a funny feeling in his/her stomach	Not at all	A little	Quite a bit	A lot
4	My child complained of feeling afraid	Not at all	A little	Quite a bit	A lot
5	My child felt afraid of being on his/her own at home	Not at all	A little	Quite a bit	A lot
6	My child felt scared when s(he) had to take a test	Not at all	A little	Quite a bit	A lot
7	My child felt afraid if s(he) had to use public toilets or bathrooms	Not at all	A little	Quite a bit	A lot
8	My child worried about being away from us/me	Not at all	A little	Quite a bit	A lot
9	My child felt afraid that s(he) would make a fool of him/herself in front of people	Not at all	A little	Quite a bit	A lot
10	My child worried that s(he) would do badly at his/her school work	Not at all	A little	Quite a bit	A lot
11	My child felt that other children liked him/her	Not at all	A little	Quite a bit	A lot
12	My child worried that something awful would happen to someone in his/her family	Not at all	A little	Quite a bit	A lot
13	My child complained of suddenly feeling as if s(he) couldn't breathe when there was no reason for this	Not at all	A little	Quite a bit	A lot
14	My child had to keep checking that s(he) had done things right (like the switch was off, or the door was locked)	Not at all	A little	Quite a bit	A lot
15	My child was scared if s(he) had to sleep on his/her own	Not at all	A little	Quite a bit	A lot
16	My child had trouble going to school in the mornings because s(he) felt nervous or afraid	Not at all	A little	Quite a bit	A lot
17	My child was good at sports	Not at all	A little	Quite a bit	A lot
18	My child was scared of dogs	Not at all	A little	Quite a bit	A lot

BELOW IS A LIST OF WAYS YOUR CHILD MIGHT HAVE FELT OR ACTED RECENTLY.
PLEASE CIRCLE HOW *MUCH* YOU THINK THEY HAVE FELT THIS WAY DURING THE LAST TWO WEEKS.

19	My child couldn't seem to get bad or silly thoughts out of his/her head	Not at all	A little	Quite a bit	A lot
20	When my child had a problem, s(he) complained of his/her heart beating really fast	Not at all	A little	Quite a bit	A lot
21	My child suddenly started to tremble or shake when there was no reason for this	Not at all	A little	Quite a bit	A lot
22	My child worried that something bad would happen to him/her	Not at all	A little	Quite a bit	A lot
23	My child was scared of going to the doctors or dentists	Not at all	A little	Quite a bit	A lot
24	When my child had a problem s(he) felt shaky	Not at all	A little	Quite a bit	A lot
25	My child was scared of being in high places or lifts	Not at all	A little	Quite a bit	A lot
26	My child felt that they were a good person	Not at all	A little	Quite a bit	A lot
27	My child had to think of special thoughts to stop bad things from happening (like numbers or words)	Not at all	A little	Quite a bit	A lot
28	My child felt scared if s(he) had to travel in the car, or on a bus or a train	Not at all	A little	Quite a bit	A lot
29	My child worried what other people thought of him/her	Not at all	A little	Quite a bit	A lot
30	My child was afraid of being in crowded places	Not at all	A little	Quite a bit	A lot
31	My child felt happy	Not at all	A little	Quite a bit	A lot
32	All of a sudden my child felt really scared for no reason at all	Not at all	A little	Quite a bit	A lot
33	My child was scared of insects or spiders	Not at all	A little	Quite a bit	A lot
34	My child complained of suddenly becoming dizzy or faint when there was no reason for this	Not at all	A little	Quite a bit	A lot
35	My child felt afraid if s(he) had to talk in front of his/her class	Not at all	A little	Quite a bit	A lot
36	My child complained of his/her heart suddenly starting to beat too quickly for no reason	Not at all	A little	Quite a bit	A lot
37	My child worried that s(he) would suddenly get a scared feeling when there was nothing to be afraid of	Not at all	A little	Quite a bit	A lot
38	My child liked him/herself	Not at all	A little	Quite a bit	A lot
39	My child was afraid of being in small closed places, like tunnels or small rooms	Not at all	A little	Quite a bit	A lot
40	My child had to do some things over and over again (like washing their hands, cleaning or putting things in a certain order)	Not at all	A little	Quite a bit	A lot
41	My child was bothered by bad or silly thoughts or pictures in his/her mind	Not at all	A little	Quite a bit	A lot
42	My child had to do some things in just the right way to stop bad things happening	Not at all	A little	Quite a bit	A lot
43	My child was proud of his/her school work	Not at all	A little	Quite a bit	A lot
44	My child felt scared if s(he) had to stay away from home overnight	Not at all	A little	Quite a bit	A lot

BELOW IS A LIST OF SYMPTOMS (OR FEELINGS) THAT CHILDREN SOMETIMES HAVE. PLEASE CIRCLE THE RESPONSE WHICH SHOWS HOW MUCH YOUR CHILD WAS BOTHERED BY EACH ONE IN THE LAST TWO WEEKS.

1.	Headaches	Not at all	A little	Some	Quite a bit	A lot
2.	Feeling faint or dizzy	Not at all	A little	Some	Quite a bit	A lot
3.	Pain in the heart or chest	Not at all	A little	Some	Quite a bit	A lot
4.	Feeling low in energy or slowed down	Not at all	A little	Some	Quite a bit	A lot
5.	Sore muscles	Not at all	A little	Some	Quite a bit	A lot
6.	Trouble getting breath (when not exercising)	Not at all	A little	Some	Quite a bit	A lot
7.	Suddenly feeling hot or cold for no reason	Not at all	A little	Some	Quite a bit	A lot
8.	Numbness or tingling in parts of the body	Not at all	A little	Some	Quite a bit	A lot
9.	Feeling weak in parts of the body	Not at all	A little	Some	Quite a bit	A lot
10.	Feeling tired	Not at all	A little	Some	Quite a bit	A lot
11.	Feeling like they might be sick or having an upset tummy	Not at all	A little	Some	Quite a bit	A lot
12.	Constipation	Not at all	A little	Some	Quite a bit	A lot
13.	Diarrhoea	Not at all	A little	Some	Quite a bit	A lot
14.	Pain in the stomach (tummy aches)	Not at all	A little	Some	Quite a bit	A lot
15.	Heart beating too fast (when not exercising)	Not at all	A little	Some	Quite a bit	A lot
16.	Being sick or throwing up	Not at all	A little	Some	Quite a bit	A lot
17.	Food making them feel sick	Not at all	A little	Some	Quite a bit	A lot
18.	Pain in the arms or legs	Not at all	A little	Some	Quite a bit	A lot

WHAT IS YOUR RELATIONSHIP TO THIS CHILD? (FOR EXAMPLE, MOTHER)

I AM THIS CHILD'S.....

**PLEASE RETURN THIS QUESTIONNAIRE TO YOUR CHILD'S SCHOOL
RECEPTION IN THE ENVELOPE PROVIDED. THANK YOU VERY MUCH FOR YOUR
HELP!**

Appendix 7: Teacher interview request email

Dear Ms.

You may remember a short time ago you very kindly helped with a research project I am carrying out into the nature and impact of stress in key stage 2 teachers, and in children. Thank you so much for allowing me to visit your classroom to administer questionnaires to you and your pupils. I enjoyed meeting you all.

On the questionnaire you filled in, you were kind enough to give me your contact details so that I could get in touch about the second stage of my research. I am emailing now to invite you to take part in this final stage, which would involve a short (30-45 minute) confidential interview, at a time and place of your choosing. The aim of the interview is to find out more about stress in teaching, and also how teachers view emotional and stress related problems in pupils.

I do hope you will agree to take part in this stage of the research. I will be in touch again in the next few days with the aim of arranging a good time to see you. Alternatively, you could contact me on 0207 612 6448, or by responding to this email.

Very best wishes – and thanks again for your help so far,

Louise (Lenny) Neil

Appendix 8: Teacher interview topic guide

Teaching experience and history

I would like to find out a little about you as a teacher and your past experience

(training (yr); length of experience/no. of years teaching since then; length in this school; experience in different schools/types of school/different age groups; current special responsibilities; what did before teaching, why decided to go for this career.)

A teacher's role

I would like to find out a little about how you perceive your role as a teacher.

(beliefs about main responsibilities as teacher; feelings of responsibility for pupils' wellbeing overall/ in comparison with pupils' academic progress/in comparison with role of parents/social workers; effects of personal feelings of responsibility e.g. worry, performance)

School ethos and training

My next questions are about the school ethos and the training you've received in relation to pupils' emotional wellbeing

(is pupil wellbeing strongly emphasised in school, is wellbeing included in school ethos/curriculum & how, initiatives e.g. place2be, or seal in practice; training in recognising/supporting pupils with emotional problems; training in recognising/supporting pupils with anxiety (where and what involved); **how do you recognise anxiety in children? Are there any other symptoms of anxiety in children? Are there any other behaviours you might expect to see, that are related to anxiety?**)

Recognising anxious/somatic pupils

I'm now going to ask you some questions about children that you have had in your classes and saw on a day to day basis, so the ones you know quite well.

(example of child/children teacher thinks is/are anxious: how they became aware; what behaviours (anything else); how often, disruptive to education/functioning/socially; teacher's response; how common in pupils?)

Experience of different types of anxiety/related symptoms

I'm now going to ask you about some different sorts of symptoms that children sometimes experience. Do you have any experience teaching children with....

(OCD: how became aware, what OCD symptoms (and other symptoms), how often, response; how common, are these anxious behaviours: repeat for worriers/social phobics; stress vs anxiety (symptoms and how they differ).

What about children with

(headaches/tummy aches/nausea: how became aware, what symptoms, how often, response, common, anxiety? What about pain in arms/legs/hot/cold/numbness)

To finish

(most disruptive, what are hardest to recognise, what children are symptoms harder to recognise in, how confident do you feel in recognising anxious pupils, those with phys symptoms?)

Attitudes to anxiety

(causes, children cause own, prolong, exaggerate, can be helped? How?)

Teacher stress

I'm now going to ask you some questions about your own wellbeing, and the wellbeing of teachers generally...

(effects of pupil anxiety; how stressed have you felt in last year/ever; what stressors in school/teaching; experience of anxiety/depression (e.g. sleep problems, racing thoughts, weepiness, irritability, guilt, low mood; withdrawal; on edge, poor concentration); affects on work as a teacher; affect on ability to recognise anxious pupils at time/after; individual school factors on stress; how to improve at school level; how cd stress in teaching generally be improved; **recommend teaching? Best things re teaching**)