

Teacher Responses to Anxiety in Children Questionnaire (TRAC):

Psychometric Properties and Relationship with Teaching Staff Characteristics

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Abstract

This study describes the development and evaluation of a new measure, the Teacher Responses to Anxiety in Children (TRAC) questionnaire in 74 primary school teachers. TRAC presents 9 hypothetical scenarios in which a child displays generalized anxiety/worry, social anxiety or separation anxiety symptoms. Teachers rate each scenario on six subscales that reflect different ways of responding to child anxiety. Overall, TRAC showed good internal reliability, with factor analytic results suggesting that it assesses three factors: Autonomy-Promoting, Anxiety-Promoting and Reward responses. Male teachers were significantly more likely than female teachers to use Anxiety-Promoting responses. More experienced teachers reported significantly more reinforcement of anxious avoidance than less experienced teachers, and teaching assistants reported significantly fewer overprotective responses. Teaching staff reported significantly more Autonomy-Promoting responses in social anxiety or generalised anxiety/worry scenarios compared to separation anxiety scenarios. Findings are discussed in terms of their implications for teacher training in the management of child anxiety.

Key words: child anxiety; internalizing problems; teacher-child interaction; shyness

Introduction

Anxiety is a common problem in childhood that often goes unrecognised due to its ‘silent’ nature (Coplan, Hughes, Bosacki and Rose-Krasnor, 2011; Rimm-Kaufmann and Kagan 2005). Anxiety disorders tend to have their initial onset in childhood, take a chronic course if left untreated and predict later mental health problems such as depression and substance abuse (Kessler et al. 2005; Last et al. 1996). Anxiety in children is associated with poor academic achievement, friendship difficulties, bullying, absenteeism and school refusal (Herzig-Anderson, Colognori, Fox, Stewart and Masia-Warner 2012). It restricts children’s enjoyment of the academic and social aspects of school life, limiting participation in classroom activities, sports, public speaking and school productions. The economic impact of child emotional disorders on public sector services in the United Kingdom is also substantial, with frontline education bearing the brunt of the financial burden (Snell et al. 2013).

Most research on the role of social interaction in the aetiology and maintenance of child anxiety has focused on parents (Murray, Cooper and Creswell 2009). However, children spend significant amounts of time at school in their formative years, suggesting that after parents, teachers are likely to be the next adults who observe and interact with children when they are feeling anxious (Lyneham, Street, Abbott and Rapee 2008). Furthermore, children may experience anxiety in response to academic or social challenges at school that may not be apparent at home. In particular, primary school teachers appear well placed to support children with anxiety given their intensive and ongoing contact with children. Furthermore, provision of appropriate support from teachers early in a child’s development may reduce the likelihood that their anxiety will become more severe and impairing.

Few studies have considered teacher characteristics in relation to their understanding and management of child anxiety. Trudgen and Lawn (2011) found no association between length of time in service or teaching position with teacher knowledge of anxiety. However,

their sample was small ($N=20$) and they did not assess teacher responses to child anxiety. Headley and Campbell (2011) found that female primary school teachers ($n = 234$) were more likely to refer children with anxiety than male teachers ($n = 64$). While the reason for this difference is unknown, the authors suggested that male teachers may believe that child anxiety is mild, transient and does not warrant intervention due to gender roles emphasizing 'toughness' in men. Male teachers may also respond differently to children's anxious behaviours than females due to cultural gender roles (Tatar and Emmanuel 2001), potentially mirroring research showing that fathers respond differently to their child's expression of negative emotions such as anxiety to mothers (Chaplin, Cole and Zahn-Waxler 2005).

Theory has identified responses of significant others that may maintain or attenuate anxiety in children (Hudson and Rapee, 2004; Murray, Cooper and Creswell 2009). Anxiety may be reinforced through overprotective behaviours, for example when an adult 'takes over' for the child. Indeed, teacher-child relationships characterized by child dependency are associated with internalizing problems (Arbeau, Coplan and Weeks 2010; Rudasill and Rimm-Kaufman 2009). Anxiety may also be reinforced by allowing children to avoid feared situations (e.g., tests, public speaking). Overprotection and reinforcement of avoidance by adults may confirm children's beliefs that the situation is unsafe, and deprives them of opportunities to develop coping, social and academic skills (Allen and Rapee 2005). Punitive responses (e.g., criticism, rejection, discipline) are also believed to exacerbate anxiety in children, creating a low sense of self-worth and leading the child to believe that the environment is fundamentally hostile and threatening (Murray et al., 2009; Rapee 1997).

Theory has also identified responses of significant others that promote bravery and autonomy in children. Cognitive-behavioural treatment (CBT) for child anxiety commonly includes a problem-solving component, and younger children are likely to be more reliant on support from adults such as parents, therapists and teachers to learn to apply this strategy

(Hawes and Allen 2016). Another core component of CBT is graded exposure, where children are encouraged to face anxiety-provoking situations in a gradual, step-by-step manner. Praise and rewards are also used to motivate children to face feared situations, develop confidence in their ability to use problem-solving strategies and celebrate their attempts to overcome their fears. Encouragingly, teachers report that they use praise and rewards to help shy children feel more comfortable at school (Brophy and McCaslin 1992; Evans 2001), prompt children to face their fears by joining in with peers (Coplan et al. 2011; Thijs, Koomen, and van de Leij 2006), and monitor and promote the social skills of social anxious children (Arbeau and Coplan 2007). However, teachers are less likely to report using praise and modelling of appropriate behaviour with shy/inhibited children compared to hyperactive children (Coplan et al. 2011).

This study describes the development and evaluation of the Teacher Responses to Anxiety in Children (TRAC) questionnaire, a new measure designed to assess how teacher responses to child anxiety. We focussed on teacher responses to separation anxiety, social anxiety and generalized anxiety/worry symptoms given their greater prevalence in primary school-aged children relative to other forms of anxiety, such as panic/agoraphobia and obsessive-compulsive disorder (Cartwright-Hatton, McNicol, and Doubleday 2006). For each hypothetical scenario, teachers record how likely they would be to respond in a range of different ways, with each response representing theoretically different ways of behaving when children display anxiety. TRAC assesses teachers' responses known to exacerbate anxiety (e.g., overprotection, reinforcement of avoidance, critical/punitive responses) and responses known to promote independence (e.g., problem solving, encouragement to face feared situations, praise and rewards).

Past studies have used different methods to assess teacher responses to child anxiety, including hypothetical vignettes describing anxious children combined with an interview

(Brophy and McCaslin 1992), observation of teacher-child interaction during Show and Tell (Evans 1992), a questionnaire assessing general use of controlling and supportive responses (Thijs et al. 2006), and hypothetical scenarios depicting shy children accompanied by rating scales for different responses (Arbeau and Coplan 2007; Coplan et al. 2011). However, studies either assessed teacher responses to child internalizing and externalizing symptoms (e.g., Brophy and McCaslin, 1992; Coplan et al. 2011; Thijs et al. 2006) or responses to shyness only (Arbeau and Coplan 2007; Coplan et al. 2011; Evans, 1992). The selection of items was therefore not informed by theory and research on broad-based childhood anxiety disorders. Thus potentially important types of responses known to attenuate and exacerbate a broad spectrum of anxiety symptoms have not yet been examined.

The aim of this study was to examine the psychometric properties of TRAC and relations with teacher characteristics (gender, teaching experience and teaching position). Understanding how teachers respond to children's anxious behaviours, and teaching staff characteristics associated with those responses may help identify teachers in need of training and support. Specifically, the internal consistency, factor structure and construct validity of TRAC was examined. We expected TRAC to contain two dimensions: Anxiety-Promoting and Autonomy-Promoting strategies. It was hypothesized that the Anxiety-Promoting scale and its subscales will be significantly inversely related to the Autonomy-Promoting scale and its lower-order scales. Based on previous research, there may be differences in responses between male and female teachers (Headley and Campbell 2011), but not new and experienced teachers (Trudgen and Lawn 2011). Teaching assistants (TAs) may differ from other staff given differences in training and longer periods spent directly interacting with children (Blatchford, Russell, Bassett, Brown and Martin 2007). However, no hypotheses were made regarding relationships between teacher characteristics and their responses to child anxiety due to the lack of theory and research on this topic.

Method

Participants

Participants were 74 teaching staff (63 women, 11 men) employed in primary schools in Central and Greater London. The ages of teaching staff ranged from 18 to 64 years (mean age 36.40 years, SD=12.96). Most staff identified their ethnicity as White (88%), with the remainder identifying their ethnic background as Asian (7%), Black (4%) or Mixed White and Black (1%). Participants included Classroom Teachers ($n=50$), Assistant or Deputy Heads ($n=7$), Head Teachers ($n=6$) and Teaching Assistants ($n=11$). Teaching experience ranged from 1 to 33 years, with 36 teaching staff reporting 5 years teaching experience or less (49%) and 38 (51%) reporting more than 5 years' experience.

Measures

Teaching Staff Characteristics

A background questionnaire assessed teaching staff characteristics including age, gender, ethnicity, years teaching experience and position in the school.

Teacher Responses to Anxiety in Children (TRAC)

The Teacher Responses to Anxiety in Children (TRAC) questionnaire (see Appendix) is a new teacher self-report measure developed for the purposes of this study. TRAC was developed using a theoretically-informed 'top-down approach'. That is, it was designed to assess responses to children's anxious behaviours identified by cognitive-behavioural models and past research as i). promoting autonomy and ii). promoting anxiety in children (Hudson & Rapee, 2004; Murray et al., 2009). TRAC consists of 9 hypothetical scenarios, with each scenario depicting an anxious behaviour representative of the three most prevalent forms of anxiety in children: Separation Anxiety (e.g., "If a child in my class stayed as close to me as

possible during class and playtimes, how likely would I be to.....”), Generalised Anxiety/Worry (e.g., “If a child in my class was worried about getting a task right and they are refusing to complete a piece of work, how likely would I be to....”) and Social Anxiety (e.g., “If a child in my class looked scared when asked to speak in front of the class, how likely would I be to.....”). Three scenarios are included to assess teacher responses to each of these three forms of anxiety. For each scenario, teachers are asked to rate the likelihood of responding in each of six possible ways, with each response representing a theoretically different way of responding to children’s anxious behaviours. This format enables teachers to describe a range of different behaviours they may use when responding to children’s anxious behaviours. The format and structure of TRAC was modelled on the Coping with Children’s Negative Emotions (CCNES) questionnaire, a parent self-report questionnaire assessing responses to displays of negative emotion in children that has shown good reliability and validity (Fabes et al. 2002).

TRAC subscales reflecting responses known to promote anxiety in children include the reinforcement of anxious behaviour (AR) e.g., “Give the child easier work”, overprotection (OP) e.g., “Tell the child it’s OK and do some of the work for them”, and the use of sanctions and criticism (S) e.g., “Keep the child in at assembly or break to finish the work”. These three subscales are summed to form an overall *Anxiety-Promoting* responses score. TRAC also has three subscales assessing responses known to promote autonomy in children including the use of problem solving skills (PS) e.g., “Sit down with the child and help them figure out how to do the work”, encouragement to face fears (E) e.g., “Encourage the child to keep trying”, and rewarding of independence or bravery (R) e.g., “Offer a small incentive for completing the work”. These three subscales are summed to form an overall *Autonomy-Promoting* responses score. For each scenario, teachers rate the likelihood of responding in each of the six possible ways on a 7-point scale ranging from “very unlikely”

(1) to “very likely” (7). Modifications were made to the wording of scenarios and response options following interviews with a pilot sample of teachers ($n=7$). During these interviews, feedback obtained regarding the clarity of wording, appropriateness of responses in the primary school setting and the likelihood of teachers responding in such a manner. The scale and its scoring is available on-line at: <https://shinerresearchlab.wixsite.com/home>).

Procedure

Following the receipt of university ethics board approval, mainstream primary schools across Central and Greater London were provided with information about the study and asked to forward an email to their staff requesting their participation in an anonymous, online questionnaire study investigating teaching staff responses to children’s anxious behaviours. Schools were recruited through the second author’s employment links to schools, teaching colleagues and contacts made through prior teaching appointments. A reminder email was sent to schools a month after the initial request. The survey began with an explanation of study aims and procedures, with participants confirming their provision of informed consent by choosing to continue and complete the questionnaires. The order of the scenarios and corresponding response options were randomised to reduce bias due to order effects. Data collection lasted for two months and then the online access to the survey for respondents was closed. Internet protocol (IP) addresses were checked to ensure the same participant did not complete the survey multiple times. Participation was anonymous to encourage teaching staff to be open and honest in their responses. However, the anonymous nature of the survey means that it is not possible to determine the overall response rate. Four respondents completed the teacher background questionnaire but not TRAC; thus the final sample for analysis comprised 70 teaching staff.

Results

Descriptive statistics for the main study variables are presented in Table 1. An exploratory data analysis (EDA) including visual inspection of the data, skewness and kurtosis statistics and Kolmogorov-Smirnov (K-S) tests of normality indicated that the data was not normally distributed for several TRAC scales, including sanctions, encouragement, problem solving and autonomy-promoting responses. Non-parametric analyses were therefore conducted for the main analyses.

Internal Reliability and Range of Scores for TRAC Scales

Internal reliability was low for the Overprotection and Avoidance Reinforcement subscales (alphas = .57, .60; respectively). Two items from the Overprotection scale and one item from the Avoidance Reinforcement scale whose corrected item-total correlation was $<.1$ were removed, resulting in corrected item-total correlations near .3 or above as recommended by Field (2009). The internal consistency for Overprotection and Avoidance Reinforcement reached acceptable levels (alphas = .73, .72; respectively) following exclusion of these items. All remaining analyses were therefore conducted using the revised Overprotection and Avoidance Reinforcement scales. The other TRAC scales all showed good to excellent internal reliability (see Table 2). Teaching staff used a wide range of scores across all subscales, with a slightly wider range of responses used for the Anxiety-Promoting scales than for the Autonomy-Promoting scales.

Relationships between TRAC Subscales

Two-tailed Spearman's Rank order correlations were carried out to examine the associations between TRAC scales (see Table 3). Greater use of Anxiety-Promoting responses was significantly related to higher scores on the three subscales that comprise this broader factor:

Overprotection, Sanction and Avoidance Reinforcement. Likewise, greater use of Autonomy-Promoting strategies was significantly related to higher scores on the three subscales that comprise this factor: Encouragement, Problem Solving and Reward responses. Scores on the Autonomy-Promoting scale were not significantly related to scores on any of the Anxiety-Promoting subscales. The Problem Solving and Encouragement scales were significantly related to one another, and either unrelated or significantly negatively related to the Anxiety-Promoting subscales. More frequent use of Reward responses was not significantly related to use of Problem Solving, Encouragement or any of the Anxiety-Promoting subscales. However, greater use of Rewards was significantly related to higher scores on the Anxiety-Promoting Responses scale.

Exploratory Factor Analysis Results for TRAC subscales

A principal components factor analysis was conducted (with Varimax rotation) to examine the relationships between the major TRAC scales and their corresponding subscales, as well as the variance explained by each scale. The Kaiser-Meyer-Olkin measure verified the sampling adequacy for the analysis, $KMO = .63$, and all KMO values for individual items were $>.77$, which is well above the acceptable limit of $.5$ (Field 2009). Bartlett's test of sphericity $X^2(15) = 241.58, p < .001$, indicated that the correlations between items were sufficiently large for a principal components factor analysis. The analysis revealed three components with an Eigenvalue greater than $.5$ that in combination explained 86.32% of the variance. A $.5$ Eigenvalue was used because of a better fit for the scree plot using that level, as well as a better conceptual fit with theories of the role of social interaction in the aetiology of anxiety in children. Table 4 shows the factor loadings after rotation.

The first factor explained 36.15% of the variance, the second explained 31.55% and the third 18.62%. The items that cluster on the same components suggest component one

represents a pattern of Autonomy-Promoting responses (excluding the Reward scale) and component two represents Anxiety-Promoting responses (OP, S and AR). Component three was made up of Sanction and Reward items with a criterion level above .40 (as recommended by Field 2009). However, the Sanction subscale has similar factor loadings for components two and three (.53 and .50) which have a criterion level above .40, while Reward only has a criterion level above .40 for component 3; as such it appears to constitute a third factor on its own.

Comparisons of TRAC responses on the basis of Teacher Gender, Experience and Position

TRAC scores were compared on the basis of teaching staff gender, experience and position (TA versus other teaching position) (see Table 5). For the purpose of analysis, length of time teaching was converted into a dichotomous category: new teacher (1 to 5 years teaching inclusive) and experienced teacher (6 to 33 years teaching experience). This selection was guided by the Teacher Pay Scale (TES 2013) which indicates that teachers are assessed against national standards and can apply to go through 'threshold' to the upper pay scale in recognition of their status as an experienced teacher in their 6th year of teaching. For comparisons on employment position, teacher, deputy and head teacher were collapsed into one category, with TAs comprising the other category given the difference in training and qualifications for TAs compared to the roles of other teaching staff. Comparisons were conducted using Mann Whitney U tests, a statistical test used to compare differences between two independent groups when the dependent variable is continuous but not normally distributed, as indicated by our EDA.

Teaching staff gender. There was a significant difference in Anxiety-Promoting responses between male and female teachers, indicating that males use significantly more Anxiety-Promoting responses than females. In contrast, there was no significant difference in

the use of Autonomy-Promoting responses between males and females. However, male and female teaching staff differed significantly on reported use of problem solving strategies, with females indicating a tendency to employ Problem Solving responses more frequently than males. No other gender comparisons were significant, all $ps < .05$.

Teaching experience. There was no significant difference between new and experienced teachers for either Anxiety-Promoting or Autonomy-Promoting responses. Interestingly, new teachers were significantly less likely to report using Avoidance Reinforcement strategies than experienced teachers. No other comparisons between new and experienced teachers on TRAC scales were significant, all $ps < .05$.

Employment position. Teaching assistants (TAs) did not differ significantly from participants in other teaching positions in the use of Anxiety-Promoting or Autonomy-Promoting responses. However, there was a significant group difference in the use of Overprotection, with TAs indicating that they are less frequent use of responses compared to staff in other teaching positions. No other comparisons were significant for teaching staff position, all $ps < .05$.

Comparing Teacher Staff Responses to Separation Anxiety, Social Anxiety and Generalized Anxiety Scenarios

Differences in responses to children's anxious behaviours depicted in Separation Anxiety, Social Anxiety and Generalized Anxiety/Worry scenarios were compared using Friedman's Analysis of Variance (ANOVA) (see Table 6). Friedman's ANOVA is the non-parametric equivalent to a one-way ANOVA with repeated measures. It is used to detect differences between groups (separation anxiety, social anxiety and generalized anxiety/worry scenarios)

when repeated measurements are collected (as all staff reported on all three types of scenarios). For Anxiety-Promoting responses there was no significant difference between symptom types, $X^2(2) = 2.21, p = .33$. However, for Autonomy-Promoting responses there was a significant difference between symptom types, $X^2(2) = 19.97, p < .001$. The Wilcoxon signed-rank test was then used to conduct post-hoc comparisons. A Bonferroni correction was applied given the number of comparisons to prevent a Type 1 error and so all effects are reported at a .0167 level of significance. There were significant differences in the use of Autonomy-Promoting responses for Separation and Social Anxiety scenarios, $z = -4.49, N = 65, p < .001, r = -.56$, and for Separation Anxiety and Generalised Anxiety scenarios, $z = -3.81, N = 65, p < .001, r = -.47$. Staff were significantly less likely to use Autonomy-Promoting responses in Separation Anxiety than in Generalised Anxiety or Social Anxiety scenarios. There was no significant difference for Autonomy-Promoting responses to Generalised Anxiety or Social Anxiety scenarios, $z = .14, N = 65, p = .89, r = .02$.

Discussion

The aim of this study was to examine the psychometric properties of TRAC and its relations with teacher characteristics (gender, experience and employment position). Male teachers were significantly more likely than female teachers to use Anxiety-Promoting responses, but there were no gender differences in the use of Autonomy-Promoting responses. Experienced teachers were significantly more likely to report reinforcement of anxious avoidance than less experienced teachers, and TAs were significantly less likely to respond in an overprotective manner. Interestingly, teachers were significantly less likely to report using Autonomy-Promoting responses in separation anxiety scenarios than in social anxiety or generalised anxiety/worry scenarios. Examination of the psychometric properties of TRAC indicated that the two higher-order TRAC scales, Anxiety- and Autonomy-Promoting responses had good

internal reliability. The Autonomy-Promoting subscales including Encouragement, Rewards and Problem-solving responses demonstrated good internal consistency (alphas .83 to .92). Following removal of one or two items from the Overprotection and Avoidance Reinforcement scales, the internal reliability of the Anxiety-Promoting subscales was also good (alphas .74 to .84). However, factor analytic results suggest that TRAC may assess three rather than two factors, with Reward responses forming a third, separate factor alongside the Autonomy and Anxiety-Promoting scales.

The factor analytic findings and interrelations between the Anxiety-Promoting scale and the Overprotection, Sanction and Avoidance of Reinforcement subscales provide support for Anxiety-Promoting responses as a higher order factor comprised of these three lower-order scales. Contrary to expectations, Reward responses were significantly related to both the Autonomy and Anxiety-Promoting scales, and unrelated to scores on the Problem-Solving and Encouragement scales. This is consistent with results indicating that the Rewards scale forms a separate factor, with the Autonomy-Promoting Responses factor comprised of the Problem Solving and Encouragement scales. Interestingly, the Sanctions scale loaded onto both the Anxiety-Promoting Responses factor and the separate third factor along with Reward scale. Therefore, although TRAC was designed to assess theoretically different ways of responding to anxiety in children, findings suggest that teachers do not always distinguish between these responses in the manner expected. Rewards are commonly used in CBT approaches to motivate anxious children to face feared situations (Hawes & Allen, 2016). However, for teachers with little knowledge and experience of cognitive-behavioural techniques, asking children to face a feared situation may appear to be a punitive response even when coupled with a reward. Alternatively, parents often express concerns during CBT that the use of rewards is 'bribery' (Rapee et al., 2006) and teachers may share similar views, thus explaining the lack of differentiation between Sanction and Reward responses. Future

research could employ qualitative methods to elicit teacher views on the use of rewards, and examine whether their attitudes change following training in CBT for child anxiety.

Consistent with our prediction, teacher report on TRAC indicated that greater use of Anxiety-Promoting responses when dealing with a distressed child was associated with decreased use of Problem Solving and Encouragement strategies. As expected, teachers who reported encouraging children to problem solve and face feared situations were also less likely to use sanctions in response to anxious behaviours. Problem solving and encouragement to face fears are conceptualised as supportive strategies that promote child socioemotional competence, whereas punitive reactions such as imposing sanctions are viewed as controlling strategies that increase distress and undermine children's confidence (Murray et al. 2009). Findings indicate that teachers tend to employ either positive or coercive styles of responding to anxious children, with staff unlikely to use both supportive and punitive responses in the same scenario.

Contrary to our expectation, teaching staff who tended to use rewards to encourage child bravery also reported more frequent use of overprotective responses. This is consistent with a style of parenting termed 'affectionate control', where parents respond to their child's anxiety in a highly affectionate or over indulgent manner, and is more common in parents who are highly empathic or anxious themselves (DiBartolo and Helt, 2007). Therefore frequent use of rewards and overprotection may not constitute mutually exclusive categories of responses, but rather may represent an overlapping response style. Interestingly, parental warmth has been shown to exert a moderating effect on overprotective parenting, such that warmth appeared to buffer the negative effects of overprotection (Raudino et al. 2013). Current theory therefore differentiates between 'affectionate' and 'affectionless' control, with these two parental response styles potentially showing differential associations with child

anxiety (DiBartolo and Helt, 2007). Future research could examine whether teacher warmth shows a similar protective effect against the overprotective responses of teaching staff.

Examination of gender differences showed that male teachers reported significantly more frequent use of Anxiety-Promoting responses than females. Female staff were also significantly more likely to endorse problem solving responses. Research on teacher responses to child anxiety has neglected the role of teacher gender, preventing comparison with past studies. However, Headley and Campbell (2011) suggested that male staff may not recognise the seriousness of anxiety, potentially explaining their greater use of responses viewed as unhelpful for anxious children. Future research may wish to examine teacher gender in relation to attitudes towards anxiety and their relationships with teacher responses, given findings indicating differences in maternal and paternal responses to displays of negative emotion in girls and boys (Chaplin et al., 2005). However, there was only a small number of male staff in this study ($n = 11$), thus findings are in need of replication.

Teachers were similar in their responses to child anxiety regardless of level of experience, with the exception that more experienced staff reported greater reinforcement of anxious avoidance than less experienced teachers. Similarly, TAs were significantly less likely than more senior staff to report overprotective responses. These differences may reflect greater attention to child emotional well-being in teacher training over the last decade (Bywater and Sharples, 2012). Similarly, in recent years TAs have received more developed training and spend more time interacting with children than other teaching staff (Blatchford et al. 2007). Therefore TAs and classroom teachers may be better placed to recognise and implement strategies that are helpful versus unhelpful for anxious children than senior management staff who no longer work directly with children in the classroom.

Our findings indicated that teaching staff were more likely to use Autonomy-Promoting responses to children's displays of generalised anxiety/worry and social anxiety

than separation anxiety. Separation anxiety symptoms including tantrums, crying and excessive clinging may be difficult to manage in the classroom, making it challenging for teachers to implement strategies that promote bravery and independence. In contrast, generalized anxiety/worry or social anxiety may be expressed in a less disruptive manner (e.g., lack of participation). Another possible explanation is that teachers view social competence as more important goal for children than achieving independence from adults in the primary school years, and thus place a stronger emphasis on promoting autonomy in social situations. This is concerning given that SAD is the most common anxiety disorder among primary-school aged children (Green et al. 2005), and highlights a need for teacher education on the negative impact of separation anxiety.

Several limitations should be noted when interpreting the current study findings. First, the study relied on teacher self-report, thus there is the possibility of bias due to personality, mood and memory biases (Robson 2011). The survey was anonymous to encourage honest reporting, but teachers may still have over-reported responses viewed as socially desirable. The participation rate is unknown, thus teaching staff who participated may have differed from those who chose not to, such as a greater interest in, or prior knowledge of anxiety. Many more female than male teachers participated, reflecting the unequal gender ratio in the primary teacher population in the United Kingdom, and most participants were White British and employed in schools based in London, limiting the generalizability of the results. Our future plans to refine TRAC therefore include examining its reliability and validity in a larger, more representative sample. Another limitation is that teaching staff reported on their likely responses to the behaviours of hypothetical children. TRAC may assess a teacher's view of how they should manage an anxious child, rather than their actual behaviour in the classroom. We are therefore currently investigating the reliability and validity of TRAC for teacher report on real children with high versus low

levels of anxiety. A school-based observation study would also provide additional information about teacher responses in a ‘real world’ situation and help to determine the convergent validity of TRAC. However, given that anxiety in children can be both subtle and covert (anxious cognitions, physical symptoms) coupled with ethical issues, it may be challenging to both elicit and observe children’s anxious behaviour and teacher responses.

In our research lab, our long-term goal is to develop a training programme aimed at improving teacher recognition and management of child anxiety. The present study findings assist in identifying teaching staff in most need of support, what kinds of responses to children’s anxious behaviours may be over- or under-utilized and what forms of anxiety tend to elicit the most helpful/unhelpful responses. Therefore, in future TRAC may be useful for evaluating whether teacher training in the management of child anxiety has successful in achieving the desired change in teacher responses. Our more immediate plans include investigation of the relationships between teacher responses to child anxiety and teacher stress levels, to see if findings mirror those in the parenting literature, namely that Anxiety-Promoting responses occur more often, and Autonomy-Promoting responses less often, in parents who are anxious themselves (Murray et al., 2009). Similar to many CBT programmes that feature a component targeting parental anxiety (e.g., Hudson et al., 2014), a teacher training programme may benefit from a component providing teachers with strategies to manage their own stress.

This study is the first to examine the relationship between teaching staff characteristics and their responses to child anxiety in the United Kingdom. Our findings provide preliminary evidence that male teaching staff and more senior and experienced teachers may be in the greatest need of education and support in managing child anxiety. It is the first measure designed to assess teacher responses to child anxiety based on CBT principles, and therefore has the potential to provide a new perspective on the role of teacher-

child interaction in relation to anxiety in children. The identification of malleable risk factors such as teacher responses to anxiety is crucial for reducing the risk for anxiety in children – particularly in the primary school years when anxiety is likely to be more amenable to prevention or early intervention (Allen, Creswell, & Murray, 2013). Further refinement and research on the psychometric properties of TRAC is needed, but initial findings indicate that it shows promise and will assist in further elucidating the role of teaching staff in the attenuation or exacerbation of anxiety in children.

References

- Arbeau, K. A., and Coplan, R. J. 2007. "Kindergarten teachers' beliefs and responses to hypothetical prosocial, asocial, and antisocial children." *Merrill-Palmer Quarterly* 53 291-318.
- Arbeau, K. A., Coplan, R. J. and Weeks, M. 2010. "Shyness, teacher-child relationships, and socio-emotional adjustment in grade 1." *International Journal of Behavioral Development* 34, no. 3: 259-269.
- Allen, J.L., Creswell, C., and Murray, L. 2013. "Prevention of anxiety disorders." In P. Graham & S. Reynolds (Eds.), *Cognitive Behaviour Therapy for Children and Families* (3rd ed., pp. 323-336). Cambridge: Cambridge University Press.
- Allen, J.L., and Rapee, R.M. 2005. Anxiety disorders. In P. Graham (Ed.), *Cognitive Behaviour Therapy for Children and Families* (2nd ed., pp. 300-319). Cambridge: Cambridge University Press.
- Blatchford, P., Russell, A., Bassett, P., Brown P., and Martin, C. 2007. "The role and effects of teaching assistants in English primary schools (years 4 to 6) 2000-2003. Results from the class size and pupil-adult ratios (CSPAR) KS2 project". *British Educational Research Journal* 33 no.1: 5-26.
- Bywater, T., and Sharples, J. 2012. "Effective evidence-based interventions for emotional well-being: Lessons for policy and practice." *Research Papers in Education* 27, no. 4: 389-408.
- Chaplin, Tara M., Pamela M. Cole, and Carolyn Zahn-Waxler. 2005. "Parental socialization of emotion expression: gender differences and relations to child adjustment." *Emotion* 5, no. 1: 80-88.
- Coplan, R.J., Hughes, K., Bosacki, S., and Rose-Krasnor, L. 2011. "Is silence golden?"

- Elementary school teachers' strategies and beliefs regarding hypothetical shy/quiet and exuberant/talkative children." *Journal of Educational Psychology* 103 no. 4: 939-951.
- DiBartolo P.M., and Helt, M. 2007. Theoretical models of affectionate versus affectionless control in anxious families: A critical examination based on observations of parent-child interactions. *Clinical Child and Family Psychology*, 10 no. 3: 253-274.
- Evans, M.A. 1992. "Control and paradox in teacher conversations with shy children." *Canadian Journal of Behavioural Science/Revue canadienne des sciences du comportement* 24, no. 4: 502.
- Evans, M. A. 2001. Shyness in the classroom and home. In W. R. Crozier and L. E. Alden, *International handbook of social anxiety: Concepts, research and interventions relating to the self and shyness* (pp. 159–183). Westport, CT: Wiley.
- Fabes, R.A., Poulin, R.E., Eisenberg, N., and Madden-Derdich, D.A. 2002. "The coping with children's negative emotional scale (CCNES): Psychometric properties and relations with children's emotional competence." *Marriage and Family Review* 34 no. 3: 285-310.
- Field, A.P. 2009. *Discovering statistics using SPSS* (3rd ed.). London: Sage.
- Hawes, D.J., and Allen, J.L. 2016. Evidence-based parenting interventions: Current perspectives and clinical strategies. In M. Hodes and S. Gau (Eds.), *Positive Mental Health, Fighting Stigma and Promoting Resiliency for Children and Adolescents* (pp. 185-204). London: Elsevier.
- Headley C.J., and Campbell, M.A. 2011. "Teachers' recognition and referral of anxiety disorders in primary school children." *Australian Journal of Educational and Developmental Psychology* 11 78-90.
- Herzig-Anderson, K., Colognori, D.C., Fox, J.K., Stewart, C.E. and Masia-Warner, C. 2012.

"School-based anxiety treatments for children and adolescents." *Child and Adolescent Psychiatric Clinics of North America* 21 no. 3: 655.

Hudson, J. L., Newall, C., Rapee, R. M., Lyneham, H. J., Schniering, C. C., Wuthrich, V. M., Schneider, S., Seeley-Wait, E., Edwards, S. & Gar, N. S. 2014 "The impact of brief parental anxiety management on child anxiety treatment outcomes: a controlled trial." *Journal of Clinical Child & Adolescent Psychology* 43 no. 3: 370-380.

Hudson, J.L., and Rapee, R.M. 2004. From anxious temperament to disorder: an etiological model of generalised anxiety disorder. In *Generalised Anxiety Disorder: Advances in Research and Practice*, ed. R.G. Heimberg, C.L. Turk, and D.S. Mennin, pp. 51–76. New York: Guilford.

Kessler, R.C., Berglund, P., Demler, O., Jin, R., Merikangas, K.R., and Walters, E.E. 2005. Lifetime prevalence and age-of-onset distributions of DSM-IV disorders in the national comorbidity survey replication. *Archives of General Psychiatry* 62 593-602.

Last, C.G., Perrin, S., Hersen, M. and Kazdin, A.E. 1996. "A prospective study of childhood anxiety disorders." *Journal of the American Academy of Child & Adolescent Psychiatry* 35, no. 11: 1502-1510.

Lyneham, H.J., Street, A.K., Abbott, M.J., and Rapee, R.M. 2008. "Psychometric properties of the school anxiety scale – teacher report (SAS-TR)." *Journal of Anxiety Disorders* 22 292-300.

Murray, L., Creswell, C., and Cooper, P.J. 2009. "The development of anxiety disorders in childhood: An integrative review." *Psychological Medicine* 39 1413-1423.

Rimm-Kaufman, S.E., and Kagan, J. 2005. "Infant predictors of kindergarten behavior: The contribution of inhibited and uninhibited temperament types." *Behavioral Disorders* 30 329-346.

- Rapee, R.M. 1997. "Potential role of childrearing practices in the development of anxiety and depression." *Clinical Psychology Review* 17 46–67.
- Rapee, R.M., Lyneham, H., Schniering, C., Wuthrich, V., Hudson, J. and Wignall, A. 2006. "Cool Kids Child and Adolescent Anxiety Program: Therapist Manual." Centre for Emotional Health: Sydney, Australia.
- Raudino, A., Murray, L., Turner, C., Tsampala, E., Lis, A., De Pascalis, L., and Cooper, P.J. 2013. "Child anxiety and parenting in England and Italy: The moderating role of maternal warmth." *Journal of Child Psychology and Psychiatry* 4 1-9.
- Robson, C. 2011. *Real world research* (3rd ed.). Chichester: Wiley-Blackwell.
- Rudasill, K.M., and Rimm-Kaufman, S.E. 2009. "Teacher–child relationship quality: The roles of child temperament and teacher–child interactions." *Early Childhood Research Quarterly* 24 no. 2: 107-120.
- Snell, T., Knapp, M., Healey, A., Guglani, S., Evans-Lacko, S., Fernandez, J-L., Meltzer, H., and Ford, T. 2013. "Economic impact of childhood psychiatric disorder on public sector services in Britain: Estimates from national survey data." *Journal of Child Psychology and Psychiatry* 1-9.
- Tatar, M., and Emmanuel, G. 2001. "Teachers' perceptions of their students' gender roles." *Journal of Educational Research* 94 215–224.
- TES Editorial (2013). Qualified Teachers' Pay Scales. Online. Available at <http://www.tes.co.uk/article.aspx?storycode=6000186> (accessed 5 August 2013)
- Thijs, J.T., Koomen, H.M.Y., and van de Leij, A. 2006. "Teachers' self-reported pedagogical practices toward socially inhibited, hyperactive, and average children." *Psychology in the Schools* 43 no. 5: 635-651.
- Trudgen M., and Lawn, S. 2011. "What is the threshold of teachers' recognition and

report of concerns about anxiety and depression in students? An exploratory study with teachers of adolescents in regional Australia.” *Australian Journal of Guidance and Counselling* 21 no. 2: 126-141.

Appendix

Teacher Responses to Anxiety in Children (TRAC) Questionnaire

Instructions: In the following items, please indicate on a scale from 1 (very unlikely) to 7 (very likely) the likelihood that you would respond in the ways listed for each item. Please read each item carefully and respond as honestly and sincerely as you can. For each response, please circle a number from 1-7.

Response Scale:	1	2	3	4	5	6	7
	Very Unlikely			Medium			Very Likely

Generalized anxiety/worry scenarios:

If a child in my class was worried about getting a task right and he/she is refusing to complete a piece of work, I would:

- a) Tell the child it's OK, and do some of the work for him/her (OP)
- b) Keep the child in at assembly or break to finish the work (S)
- c) Encourage the child to keep trying (E)
- d) Offer a small incentive for completing the work (R)
- e) Sit down with the child and help him/her to figure out how to do the work (PS)
- f) Give the child easier work (AR)

If a child in my class is asked to learn a new skill (e.g., calculation method) and looks visibly worried, I would:

- a) Tell the child he/she can keep doing the task the way he/she is used to^a (AR)
- b) Tell the child he/she will have to stay in at break time if he/she doesn't try to do it (S)
- c) Repeatedly show the child how to do the task^a (OP)
- d) Tell the child to 'have a go' (E)
- e) Tell the child that he/she will receive a small reward if he/she tries the new skill (R)
- f) Sit down with the child and help him/her to practice the new skill (PS)

If a child in my class becomes very upset when another child scribbles on his/her work, I would:

- a) Tell the child to calm down and stop over-reacting (S)
- b) Tell the child that it's understandable that he/she is so upset (AR)
- c) Sit down and re-do the work for the child (OP)
- d) Tell the child they will get a reward when he/she has another go at it (R)
- e) Talk with the child about how to fix the work (PS)
- f) Encourage the child to have another go at it (E)

Social anxiety scenarios:

If a child and looked scared when asked to speak in front of the class, I would:

- a) Ask another child to speak instead (AR)
- b) Tell the child to stop being nervous (S)
- c) Ask the child whisper to you what he/she wants to say and then say it to the class for him/her (OP)
- d) Tell the child he/she will get a reward for participating (R)
- e) Talk with the child about strategies to help him/her feel more confident speaking in class (PS)
- f) Encourage the child to give it a try (E)

If a child is in the playground, watching their classmates play, but hanging back and not joining in, I would:

- a) Leave him/her to watch (AR)
- b) Ask the child to come and do some jobs for you in the classroom (OP)
- c) Tell the child 'you should be playing with the other children' (S)
- d) Help the child figure out what to do so that he/she can join in (PS)
- e) Tell the child if he/she joins in you will give them all a reward (R)
- f) Encourage the child to play with their classmates (E)

If a child in my class was really quiet, and not joining in a group discussion, I would:

- a) Leave the child to listen to the discussion (AR)
- b) Give the child suggestions as to what he/she could say (OP)
- c) Tell the child that he/she will have to stay in at lunchtime if he/she doesn't participate (S)
- d) Praise the child for any contributions he/she makes to the discussion (R)
- e) Help the child practice what he/she could say in the group (PS)
- f) Encourage the child to participate (E)

Separation anxiety scenarios:

If a child stayed as close to you as possible during class and playtimes, I would:

- a) Let him/her stay close (AR)
- b) Tell the child to stop or you will send him/her to see another teacher (S)
- c) You tell the child he/she can stay with you and do fun activities (OP)
- d) Tell the child he/she will get a certificate or other reward if he/she sits/plays with his/her classmates (R)
- e) Help the child think about what activities he/she could do with their classmates (PS)
- f) Encourage the child join the group (E)

If a child in my class is inconsolably upset, and tells you that he/she misses their parent(s) and wants to go home, I would:

- a) Let the child speak to his/her parent(s) over the phone (AR)
- b) Tell the child if he/she doesn't calm down, he/she will miss out on a fun activity (S)
- a) Tell him/her to sit with you until he/she settles (OP)
- c) Tell the child he/she can choose a small reward when he/she joins in with class (R)
- d) Help the child to think of things to do that would make him/her feel better about being at school (PS)
- e) Remind the child of times when he/she has missed their parents before and coped well with it (E)

If a child was crying after arriving at school away from his/her parents, I would:

- a) Tell the child you will call his/her parent(s) and ask them to take him/her home (AR)
- b) Tell the child to calm down, he/she is over-reacting (S)
- g) Tell him/her to sit with you until they settle^a (OP)
- c) Tell the child he/she will get a reward for staying at school (R)
- d) Help the child to figure out strategies to help him/her feel settled at school (PS)
- e) Tell the child he/she is brave for coming to school (E)

Note. Scales are abbreviated as follows: Avoidance Reinforcement (AR), Overprotection (OP), Sanction (S), Reward (R), Problem solving (PS), Encouragement (E). ^aItems removed from scale during main analyses due to low inter-item total correlations.

Table 1. Distribution of main variables for TRAC

	Mean	SD	K-S z score	Skewness		Kurtosis	
				Statistic	SE	Statistic	SE
<i>TRAC scales</i>							
Anxiety-Promoting Responses	2.56	.85	.10	.75	.29	3.31	.57
Autonomy-Promoting Responses	5.39	.82	.14**	-1.34	.29	2.20	.57
<i>TRAC subscales</i>							
Overprotection	2.57	1.09	.08	-.06	.29	.351	.57
Sanction	2.10	1.05	.17***	1.58	.29	3.42	.57
Avoidance reinforcement	2.99	.92	.10	.31	.29	1.55	.57
Reward	3.91	1.23	.07	.10	.29	-.60	.57
Encouragement	6.08	1.01	.22***	-1.83	.29	3.22	.57
Problem Solving	6.19	.99	.21***	-2.01	.29	3.97	.57

Note. SE = standard error; df = 70; * $p < .05$, ** $p < .01$, *** $p < .001$

Table 2. Range and Cronbach's Alphas for TRAC Scales

TRAC Scales	Range	α
Anxiety-Promoting Responses	1.20 – 6.36	.89
Autonomy-Promoting Responses	2.56 – 6.93	.91
TRAC subscales		
Overprotection	1.00 – 6.00	.73
Sanction	1.00 – 6.33	.84
Avoidance Reinforcement	1.50 – 6.75	.72
Reward	1.67 – 6.78	.83
Encouragement	1.67 – 7.00	.91
Problem Solving	1.67 – 7.00	.92

Table 3. Relations Among TRAC Scales

	1	2	3	4	5	6	7	8
1. Overprotection	-	.22	.51***	.38**	-.24*	-.20	.80***	.07
2. Sanction		-	.27*	.16	-.29*	-.38**	.65***	-.15
3. Avoidance Reinforcement			-	.18	-.13	-.11	.73***	-.01
4. Reward				-	.23	.23	.36**	.76***
5. Encouragement					-	.77***	-.25*	.73***
6. Problem Solving						-	-.26*	.73***
7. Anxiety-Promoting Responses							-	.02
8. Autonomy-Promoting Responses								-

Note. $df = 70$ * $p < .05$. ** $p < .01$. *** $p < .001$. Two-tailed.

Table 4. Exploratory factor analysis results for TRAC subscales

	Rotated Factor Loadings		
	1	2	3
Overprotection	.18	.87	.15
Sanction	-.46	.53	.50
Avoidance reinforcement	-.05	.90	.17
Reward	.29	.22	.88
Encouragement	.95	.04	.14
Problem Solving	.96	.05	.10
Eigenvalues	2.17	1.89	1.12
% of Variance	36.15	31.55	18.62

Note. Factor loadings over .40 appear in bold

Table 5. Mann Whitney U tests comparing teaching staff by gender, experience and position on TRAC scales

	Gender	Mean ranks	<i>U</i>	Experience	Mean ranks	<i>U</i>	Position	Mean ranks	<i>U</i>
TRAC Major Scales									
Autonomy Promoting	Male:	28.36	246.00	≤ 5 years:	37.37	548.50	TA:	27.25	214.00
	Female:	36.83		> 5 years:	33.74		Other:	36.88	
Anxiety Promoting	Male:	47.77	189.50*	≤ 5 years:	32.50	510.00	TA:	44.10	217.50
	Female:	33.21		> 5 years:	38.33		Other:	34.07	
TRAC Subscales									
Overprotection	Male:	45.55	214.00	≤ 5 years:	33.65	549.00	TA:	22.00	165.00*
	Female:	33.63		> 5 years:	37.25		Other:	37.75	
Sanction	Male:	45.55	214.00	≤ 5 years:	35.54	610.50	TA:	37.10	284.00
	Female:	33.63		> 5 years:	35.46		Other:	35.23	
Avoidance reinforcement	Male:	45.91	210.00	≤ 5 years:	28.93	388.50**	TA:	24.00	185.00
	Female:	33.56		> 5 years:	41.71		Other:	37.42	
Reward	Male:	36.05	318.50	≤ 5 years:	37.19	554.50	TA:	41.05	244.50
	Female:	35.40		> 5 years:	33.90		Other:	34.58	

Encouragement	Male:	24.68	205.50	≤ 5 years:	34.07	563.50	TA:	46.00	195.00
	Female:	37.52		> 5 years:	36.85		Other:	33.75	
Problem Solving	Male:	21.55	171.00*	≤ 5 years:	35.24	603.00	TA:	40.85	246.50
	Female:	38.10		> 5 years:	35.75		Other:	34.61	

Note. Gender df(11,59); Experience df(34,36), Position df(10,60). * $p < .05$, ** $p < .01$. Two-tailed.

Table 6. Relations of TRAC Scales to Social, Separation and Generalised Anxiety Symptoms

	Mean Rank	X^2
Autonomy Promoting		19.97***
Social Anxiety	2.28	
Separation Anxiety	1.57	
Generalised Anxiety	2.15	
Anxiety Promoting		2.21
Social Anxiety	1.95	
Separation Anxiety	2.15	
Generalised Anxiety	1.9	

Note. df(2,65). *** $p < .001$. Two-tailed.