

Helping anxious parents to help their children.

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Title: Helping parents to help children overcome fear: The influence of a short video tutorial.

Short title: Helping anxious parents to help their children

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Abstract

Objectives: Anxiety runs in families and its transmission is largely environmental. However, studies rarely explore this process in clinically anxious parents or ask participants to face a genuine fear. We also do not know whether this process is modifiable.

This study will explore these questions using a sample of clinically anxious parents.

Design: Experimental design comparing clinically anxious parents with non-anxious parents, and exploring the effects of a tutorial intervention versus a control group.

Methods: Parents with and without anxiety disorders and their children (5-9 years) participated ($N = 72$). Children chose two fearful animal stimuli. Parents helped the child approach the first in graded steps. The following parental behaviours were recorded:

positive/negative verbal information; positive/negative modelling; encouragement/praising of approach/avoidance behaviours. Half the parents were then randomly assigned to a short video-tutorial advising how to help children cope with fearful situations. The remainder watched a control video. The approach task was repeated with the second stimulus.

Results: Parenting behaviours fell into two categories: ‘approach parenting’ (encouraging/praising/modelling approach; positive verbal information);

‘avoidance parenting’ (encouraging/praising/modelling avoidance; negative verbal information). The parenting tutorial increased ‘approach parenting’ and decreased ‘avoidance parenting’ and was associated with increased child approach towards fearful stimuli. This was not moderated by parent or child anxiety.

Conclusions: Parenting, particularly ‘avoidance parenting’, is associated with children’s approach and avoidance. A short video-tutorial modified these parenting behaviours and reduced avoidance. These effects were apparent regardless of parent or child anxiety level.

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Keywords

Anxiety, fear, parenting, avoidance, children.

Practitioner Points

- Avoidance & approach parenting may influence children's response to fearful stimuli.
- Avoidance parenting may be more problematic than lack of approach parenting.
- Approach & Avoidance parenting are amenable to manipulation by short video tutorial.
- Parenting improvement resulted in increased approach behaviour in children.

Limitations

- It is not clear whether the positive impacts of the tutorial are maintained longer term
- It is not clear whether these findings can be generalised to parenting around more intense fears and phobias in children

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Introduction

Childhood anxiety disorders are common and problematic. A systematic review of the literature relating to pre-adolescence, Cartwright-Hatton, McNicol, and Doubleday (2006) concluded that anxiety disorders were the most common psychological disorder, eclipsing depression and behavioural disorders. Prevalence of ‘any anxiety disorder’ in children aged 6-8 years was 23.9% in a Dutch epidemiological study (Kroes et al., 2001), much of which was accounted for by phobias (present in 21.9% of the full sample).

We know that anxiety runs in families. In one study, children who had a clinically anxious parent were seven times more likely to have an anxiety disorder themselves than control children (Turner, Beidel, & Costello, 1987). In another, one third of children of clinically anxious parents met criteria for an anxiety disorder, as did two thirds of those who had two clinically anxious parents, compared with 19% of children who had no anxious parent (Merikangas, Dierker, & Szatmari, 1998).

But why do anxiety disorders run in families? The answer is likely to be a complex mix of genetic, epigenetic, and environmental factors. In a comprehensive review, behavioural geneticists Gregory and Eley concluded that “*environmental factors are at least of equal importance...[to genetic factors]*” (2007, p.209). In a powerful ‘children of twins’ study, Eley et al. concluded that “*there was no evidence of significant genetic transmission.*” (2015 p.630).

Environmental factors clearly have a role in the transmission of anxiety from parent to child. In this study, we explore the transmission of fears and phobias. Perhaps the most influential model of the development of fears was proposed by Rachman (1977). He proposed that fears and phobias develop via one (or more) of three pathways, namely:

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direct conditioning; verbal information; and vicarious learning. *Direct conditioning* occurs when a person learns to fear a stimulus subsequent to operant or classical conditioning processes. Fears are learnt via *verbal information* if this conveys that the stimulus is dangerous. *Vicarious learning* operates when we learn fear from observing another person showing fear of a stimulus.

There is evidence for each of these pathways (Askew & Field, 2007; Field & Lawson, 2003; Field, 2006; Lawson, Banerjee, & Field, 2007; Ollendick & King, 1991). In a study reported by Field, Lawson and Banerjee (2008) children's fear beliefs about novel animals changed in line with the information that they had received (threatening/positive/no information), and persisted for six months. Those who received negative information showed avoidance when approaching a box putatively containing that animal. In another study, *vicarious learning* impacted on fear beliefs and avoidance behaviour, persisting for three months (Askew & Field, 2007). The best studied of Rachman's pathways is *direct conditioning*, which has much support, beginning with the work of Watson and Rayner (1920).

Clinically, parents are often asked to engage in fewer 'avoidance' parenting behaviours: reducing verbal fear information, vicarious learning opportunities and reinforcement of children's fear and avoidance. Indeed, family accommodation, (enabling a child to avoid anxiety-related distress through modifying family routines or facilitating avoidance), has been implicated in the maintenance of childhood anxiety (Norman, Silverman, & Lebowitz, 2015). Family accommodation decreases the odds of remission from childhood anxiety following treatment, which is likely because of the lack of opportunity to have correctional learning experiences through exposure to fear (Salloum

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et al., 2018). Likewise, anxious parents are asked to increase 'approach' parenting behaviours that encourage children to face their fears: parents are encouraged to provide more positive information and positive vicarious learning opportunities, and to increase reinforcement of confidence and approach behaviours around fearful stimuli.

While trials of parenting interventions have been successful in reducing anxiety in children (Cartwright-Hatton et al., 2018, 2011; Cobham, Filus, & Sanders, 2017; Lebowitz, Omer, Hermes, & Scahill, 2014), there is little evidence to suggest that parents can modify these approach and avoidance parenting behaviours, particularly if they are anxious or have an anxious child. Anxious parents may struggle with these instructions: it is thought that parents who avoid experiencing emotional arousal themselves (as many anxious people do) may find it difficult to tolerate their child experiencing emotional arousal (Cheron, Ehrenreich, & Pincus, 2009). Alternatively, the family accommodation literature suggests that anxious parents are motivated to protect their child and accommodate their child's anxiety to (temporarily) minimise the child's distress (Norman et al., 2015). Likewise, parents may be motivated to modify their parenting behaviours to reduce their child's anxiety in the long-term. Preliminary research suggests that family accommodation behaviours are modifiable following parent training (Lebowitz et al., 2014). However, even if these processes are modifiable, we do not know whether this has an impact on children's behaviour.

In addition, research has generally used unfamiliar persons (e.g. research assistants) as the source of the information/learning (e.g. Field & Lawson, 2003; Lester et al., 2015; Muris, Bodden, Merckelbach, Ollendick & King, 2003), meaning that we learn little about the transfer of fear from parent to child. A small body of research examining

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these processes in parents has largely confirmed that the processes work in the same way when parents are the agents of learning (Fisak & Grills-Taquechel, 2007).

To our knowledge, no research has explored these processes in families where the parent has an anxiety disorder. This lacuna seems important, given the high risk of anxiety disorders in children of clinically anxious parents. Furthermore, where studies have used parents as the agents of fear transmission, these have employed artificial situations in which neither parent nor child has been exposed to their own naturally occurring fears. Therefore, we have limited information on how parents and children respond when they are afraid.

In the ‘proof of principle’ study presented here, we examined approach and avoidance parenting behaviours in parents with and without anxiety diagnoses to test whether we are able to modify these parenting behaviours. Approach parenting comprised behaviours that encouraged children to approach fearful stimuli in a behavioural approach task, such as using positive/confident verbal information, providing positive vicarious learning opportunities, and by reinforcing children’s approach. Avoidance parenting comprised behaviours that encouraged children to avoid approaching fearful stimuli, such as reinforcing avoidance, providing fearful verbal information, and negative vicarious learning experiences. We examined these behaviours in a context where their child was genuinely fearful. We hypothesised that:

1. There will be a positive association between ‘approach parenting’ and a negative association between ‘avoidance parenting’ and children’s approach of a fearful stimulus, regardless of parent clinical status or child trait anxiety

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2. The parenting tutorial will increase parents' 'approach parenting' and reduce parents' 'avoidance parenting', regardless of parent clinical status or child trait anxiety
3. Children of parents who watched the parenting tutorial (compared to those who watched a control tutorial) will achieve a greater number of steps approaching the feared stimulus, regardless of parent clinical status or child trait anxiety
4. Change in 'approach/avoidance parenting' behaviours will mediate the effect of the parenting tutorial on the number of steps that children take towards a feared stimulus.

Methods

Participants

Participants were 72 parents and their children: Thirty-seven clinically anxious parents (6 male; age $M=40$, range 29-57) referred from NHS services and their child aged 5-9 years (21 male; mean age: 7.0 years); and 35 non-clinical parents (2 male; age $M=41$, range 24-51) with their child (22 male; mean age: 6.8 years). Most participants identified as White British or White Other (Clinical Parents 97.3%; Non-Clinical Parents 100%; Clinical Children 91.9%; Non-Clinical Children 88.6%). The remainder identified as mixed heritage. There was no significant difference between clinical and non-clinical samples in: parent gender ($X^2=2.008$, $p=.15$); parent age ($F_{(1,70)}=0.658$, $p=.57$); child gender ($X^2=0.278$, $p=.39$); child age ($F_{(1,69)}=0.945$, $p=.34$). All participants had strong English, and none had major developmental disabilities.

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Clinical participants were included if they had any anxiety diagnosis and were referred from NHS services or were self-referred. Diagnoses were verified by Anxiety Disorder Interview Schedule (see below). Exclusion criteria included: lacking capacity to consent to participation (referrer's opinion); needs inappropriate for a group-based intervention (for a subsequent study: current active psychosis; severe depression; current manic state; certain Axis II conditions).

Non-clinical participants were excluded if they screened positive for anxiety diagnosis on the Psychiatric Diagnostic Screening Questionnaire *and* scored above suggested clinical cutoff (>47) on the Spielberger Trait Anxiety Questionnaire (*n*=8).

Measures

Anxiety Disorders Interview Schedule (ADIS) (Brown, DiNardo, & Barlow, 1994).

The ADIS was completed by trained NHS Clinical Studies Officers (*CSO*), by telephone, to confirm anxiety diagnoses of adult clinical participants after their participation in the study (it was not administered to non-clinical participants). Ten percent of ADIS recordings were re-rated by a clinical psychologist. Additionally, 25% were double coded by research assistants blind to participant diagnostic status. Agreement between the clinical psychologist and the CSOs, and between the research assistants and the CSOs, as to presence/absence of an anxiety disorder was 100% (*=1.0*). The following sections were used: panic disorder, agoraphobia, social phobia, GAD, OCD, specific phobia, PTSD, hypochondriasis. All sections on non-anxiety disorders were excluded.

Psychiatric Diagnostic Screening Questionnaire (PDSQ) (Zimmerman & Mattia, 2001). A self-rated diagnostic questionnaire on a 2-point scale (yes/no). Fifty-seven

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items from the PDSQ covered OCD, panic disorder, agoraphobia, social phobia, GAD, hypochondriasis, PTSD. Sections for non-anxiety disorders were not used. The subscales used here have good-to-excellent internal consistency (all $>.80$; mean $=.86$) and test-retest reliability (all $r >.80$; mean $r=.89$). Convergent and discriminant validity of the PDSQ has been demonstrated. It has sensitivity of 87% and negative predictive power of 97% (Zimmerman & Chelminski, 2006). Good-to-excellent internal consistency was found for the current sample (all subscales $>.75$). Non-clinical participants who were identified as having an anxiety disorder according to the PDSQ were excluded from the study.

Spielberger State-Trait Anxiety Inventory (STAI) (Spielberger, Gorsuch, & Lushene, 1970). The STAI is a self-rated questionnaire measuring state and trait anxiety. It comprises 40 items rated using a 4-point scale ('almost never' to 'almost always'), with a suggested clinical cut-off of 47. The Trait scale has good test-retest reliability, with correlations from .73 to .86 (Spielberger et al., 1970). Construct and concurrent validity have been demonstrated (Spielberger et al., 1970). For the current sample, high internal consistency was found for both Trait ($=.96$) and State Anxiety ($=.93$). Non-clinical participants who scored above the clinical cut-off score were excluded from the study.

Spence Child Anxiety Scale (parent-version) (SCAS): (Spence, 1998) A parent-rated symptom checklist, covering panic, agoraphobia, separation anxiety, physical injury fears, social phobia, OCD, GAD. It has 38 items rated on a 4-point scale: 'never' to 'always'. It has good internal consistency ($=.61-.92$ across subscales), and good

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validity, indicated by strong correlations ($r=.55-.59$) with the internalising subscale of the Child Behaviour Checklist (Nauta et al., 2004). It shows good discriminant validity for anxiety diagnoses (Nauta et al., 2004). Good internal consistency was found in the current sample ($\alpha=.87$).

Procedure

Ethical approval was received from the NHS Research Ethics Service. Informed consent was obtained from all participants.

A Dutch protocol (Van der Bruggen & Bogels 2012) was adapted for the experimental task. Children selected two stimuli that they were moderately scared of, from a list of nine ('mice', 'crickets', 'spiders', 'snakes', 'beetles', 'worms', 'snails', 'woodlice', 'ants'). A coin was flipped to determine the order in which these stimuli were presented. Parents were then provided with the materials for the first stimulus: pictures of the stimulus (one cartoon, one photograph), a toy of the stimulus, and a live or taxidermy-prepared animal. For ethical and practical reasons, we could not use a live tarantula or snake, but the taxidermy-prepared animals were set up in realistic environments to make it appear that the animals were alive. Parents were asked to help their child to approach these materials, and given a list of 13 increasingly difficult steps in which to do this (Table 1). The parent-child dyad worked through the steps until the child completed the task or refused to continue. The process was video-recorded.

TABLE 1

After completing this task with the first stimulus, parents were assigned to one of two conditions (determined by online random number generator, with no stratification,

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prior to participants' arrival in the laboratory). Parents in the 'Managing Fear' tutorial condition watched a video tutorial about how to help children who are in fearful situations. This video lasted for approximately ten minutes and was delivered by a female clinical psychologist. It gave instruction on: avoiding criticism; encouraging and reinforcing approach behaviour; reducing encouragement and reinforcement of avoidance; increasing confident verbal information; reducing fearful verbal information; increasing positive vicarious modelling; reducing negative vicarious modelling. They were then given a short, written summary of the information. The remaining parents were in the 'Control' ('Learning to Read') tutorial condition. These parents watched an instructional video of similar length about teaching children to read, delivered by a female teacher.

After parents had received their 'learning to read' or 'managing fear' tutorial, the second set of fearful stimulus materials (e.g. a box of snake-related materials) was given to parents. They were asked to help their child to approach the materials, as previously. See Figure 1.

FIGURE 1

Data Coding

Quantitative coding of the videorecorded task was undertaken by two pairs of graduate students (each pair providing a single agreed score) who were blind to parents' diagnostic status (anxious/control), intervention condition ('Managing Fear' tutorial vs 'Learning to Read' tutorial), and time point (pre-intervention vs post-intervention). Approximately five hours of training was provided. Recordings were allocated in such a way that no pair coded the same parent-child dyad for both pre- and post-intervention tasks.

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Nine parent behaviours were coded: criticism, encourage approach, reinforce approach, encourage avoidance, reinforce avoidance, confident verbal information, fearful verbal information, positive vicarious modelling, negative vicarious modelling. Each behaviour was coded once after every thirty seconds of video, on a three-point scale (0=none of the behaviour, 1=a little of the behaviour, 2=a lot of the behaviour). A mean score for each behaviour was calculated.

To capture children's 'approach/avoidance' behaviour, the number of predetermined steps (0-13) reached by the child during the task was counted (Table 1).

For each behaviour, each coder in the pair provided an initial score, before the pair agreed a single score to be used in analysis. Cronbach's alphas between these initial scores were computed, showing good inter-rater reliability for all parent behaviours ($>.68$).

Owing to equipment failure, two families (one clinical, one non-clinical) had no codable data for Stimulus Two. Their data were excluded from analyses employing Stimulus Two data only.

Results

Factor analysis

In order to reduce the data, an exploratory principle components analysis was conducted, using data from the first stimulus only (prior to intervention). Using eigenvalues, scree plot and interpretability, a two-factor solution emerged (see Table 2 for item loadings). The first factor, "approach parenting" accounted for 22.65% of the variance and included encouraging approach behaviour, reinforcing approach behaviour, giving confident

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verbal information, and positive vicarious learning. The second factor “avoidance parenting” accounted for 18.81% of the variance and included encouraging avoidance, reinforcing avoidance, giving fearful verbal information, and negative vicarious learning. For each of these two factors, the constituent codes were averaged to compute a scale score. The item relating to parental criticism did not load highly onto either factor (due to very low levels of this behaviour) and was subsequently excluded.

TABLE 2

Hypothesis testing

Hypothesis 1: There will be a positive association between ‘approach parenting’ and children’s approach of a fearful stimulus and a negative association between ‘avoidance parenting’ and children’s approach of a fearful stimulus

To examine the relationship between parenting (‘approach parenting’ and ‘avoidance parenting’) and the number of steps taken by children towards the fearful stimulus, Pearson’s correlations were computed. Only data from the first stimulus were employed, as data from the second stimulus could be contaminated by the manipulation. There was no significant correlation between ‘approach parenting’ and number of steps achieved by the child ($r=.03$, $p=.81$, $n=72$), or between ‘avoidance parenting’ and number of steps completed ($r=-.20$, $p=.09$, $n=72$).

To explore whether the links between parenting and children’s approach/avoidance behaviour were moderated by parental clinical status, we conducted

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two Hayes PROCESS moderation regression analyses (Hayes, 2017). For each analysis, ‘approach’ or ‘avoidance’ parenting score was entered as the independent variable, predicting number of steps achieved by the child, and parental clinical status (dummy coded as 0/1) was entered as the moderator. No significant moderation by parents’ clinical status was detected: approach parenting, $b=0.32$, 95%CI [-0.38, 1.01], $t=0.92$, $p=.36$; avoidance parenting, $b=-1.62$, 95%CI [-5.07, 1.83], $t=-0.94$, $p=.35$.

We examined whether the children’s anxiety moderated the links between parenting and number of steps taken towards the fearful stimulus. Using Hayes PROCESS moderation (Hayes, 2017), ‘approach’ or ‘avoidance’ parenting was entered as the independent variable, with children’s anxiety (SCAS) as moderator, predicting the number of steps achieved by the child. No significant moderation by children’s anxiety level was detected: approach parenting, $b=0.02$, 95%CI [-0.02, 0.06], $t=0.98$, $p=.33$; avoidance parenting, $b=-0.08$, 95%CI [-0.24, 0.08], $t=-1.02$, $p=.31$.

Hypothesis 2: The parenting tutorial will increase parents’ ‘approach parenting’ and reduce parents’ ‘avoidance parenting’

To assess whether our video parenting tutorial impacted on parenting, we conducted two 2(condition: parenting tutorial/control tutorial) x 2(time: pre-tutorial/post-tutorial) Mixed Design ANOVAs with a) ‘approach parenting’ and b) ‘avoidance parenting’ as dependent variables.

There were baseline differences between participants in the treatment and control conditions, with parents in the intervention group showing more ‘approach parenting’ behaviours than the control group ($F(1,68)=6.89$, $p=.01$, $r=.30$). For ‘approach parenting’

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there was a significant time x condition interaction $F(1,68)=4.25, p=.04, r=.24$, suggesting that change in ‘approach parenting’ after the tutorial was not equal for the two conditions. Figure 2 shows that for parents receiving the parenting tutorial, ‘approach parenting’ increased, [with simple effects analysis](#) suggesting that this increase approached significance ($F(1,68)=3.68, p=.06, r=.22$). There was no change for those in the control condition ($p=.33, r=.12$).

FIGURE 2

There was no significant difference in ‘avoidance parenting’ behaviours between parents in each condition at baseline ($F(1,68)=0.05, p=.82, r=.03$). For ‘avoidance parenting’ there was a significant time x condition interaction $F(1,68)=7.18, p=.01, r=.31$, indicating that change in ‘avoidance parenting’ after the tutorial was not equal for the two conditions. Figure 3 shows that for parents receiving the parenting tutorial, ‘avoidance parenting’ decreased, with [a simple effects analysis](#) suggesting that this [this was a significant decrease](#) ($F(1,68)=4.73, p=.03, r=.25$). There was no change for those in the control condition ($p=.11, r=.19$).

FIGURE 3

To investigate whether changes in ‘approach parenting’ and ‘avoidance parenting’ subsequent to the video tutorial were different for clinical and non-clinical parents, two Hayes PROCESS moderation analyses were conducted (Hayes, 2017). First, simple difference scores were computed for changes in ‘approach’ and ‘avoidance’ parenting (separately) by subtracting pre-tutorial parenting from post-tutorial parenting scores. We

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included condition (dummy coded 0/1) as the independent variable, parent clinical status (dummy coded 0/1) as moderator, and the interaction between clinical status and condition as predictors of changes in ‘approach parenting’ and ‘avoidance parenting’. According to the interaction effect, parent clinical status did not moderate the effect of the parenting tutorial on the change in ‘approach’ ($b=0.29$, 95% CI [-0.68, 1.26], $t=0.59$, $p=.56$) or ‘avoidance’ parenting ($b=0.01$, 95% CI [-0.32, 0.34], $t=0.07$, $p=0.94$), suggesting the impact of the parenting tutorial was not significantly different for clinically anxious and non-anxious parents (see Table 3 for means and standard deviations).

TABLE 3

To examine whether children’s anxiety (SCAS) impacted on parents’ responses to the parenting tutorial, two Hayes PROCESS moderation analyses were computed (Hayes, 2017) using simple difference scores for changes in ‘approach’ and ‘avoidance’ parenting (as above) as dependent variables. We then included intervention condition (dummy coded 0/1) as the independent variable, child anxiety as moderator, and the interaction between these as predictors of parenting behaviours. There was a non-significant interaction effect, indicating that child anxiety did not moderate the effect of the parenting tutorial on either the change in ‘approach’ ($b=0.01$, 95% CI [-0.05, 0.06], $t=0.29$, $p=.77$) or ‘avoidance’ parenting ($b=0.01$, 95% CI [-0.01, 0.03], $t=1.45$, $p=.15$).

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Hypothesis 3: Children of parents who watched the parenting tutorial (as opposed to those who watched a control tutorial) will achieve a greater number of steps approaching the feared stimulus

A Mixed Methods 2(condition: parenting tutorial/control tutorial) x 2(time: pre-tutorial/post-tutorial) ANOVA was computed with number of steps that children took towards the stimulus as dependent variable.

There was a significant interaction between time and condition on the number of steps completed $F(1,68)=4.53, p=.04, r=.25$, suggesting that the number of steps that children completed was different for those whose parents received the intervention than for those in the control group. There were no significant baseline differences between children whose parents were in the intervention or control group ($F(1,68)=0.59, p=.44, r=.09$). Figure 4 shows that after parents watched the parenting tutorial, children's number of steps achieved increased, which [a simple effects analysis](#) confirmed was a significant increase ($F(1,68)=6.49, p=.013, r=.30$). There was no change for those in the control condition ($F(1,68)=0.19, p=.67, r=.05$).

FIGURE 4

To evaluate whether the impact of the tutorial differed for clinically anxious and non-anxious parents, a Hayes PROCESS moderation analysis was conducted (Hayes, 2017). First, simple difference scores were computed for changes in number of steps taken by subtracting pre-tutorial from post-tutorial steps. This score was used as the

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dependent variable. We included intervention condition (dummy coded 0/1) as the independent variable and parent clinical status (dummy coded 0/1) as moderator, as well as the interaction between these, in the model. Parent clinical status did not moderate the effect of the parenting tutorial on the number of steps the child achieved, as indicated by the non-significant interaction effect ($b=-0.35$, 95%CI [-1.90, 1.20], $t=-0.45$, $p=.66$), suggesting that the parenting tutorial did not impact differently on children's approach of the fearful stimulus according to whether their parent was clinically anxious or not.

To examine whether children's anxiety (SCAS score) impacted on response to the parenting tutorial, a Hayes PROCESS moderation analysis was undertaken (Hayes, 2017). Simple difference scores for changes in number of steps taken were used as the dependent variable. We included condition (dummy coded 0/1) as the independent variable, and child anxiety as moderator, as well as the interaction between child anxiety and intervention condition, in the model. The non-significant interaction effect indicated that child trait anxiety did not moderate the effect of the parenting tutorial, $b=-0.01$, 95%CI [-0.10, 0.07], $t=-0.26$, $p=.80$.

Hypothesis 4: Change in 'approach/avoidance parenting' behaviours will mediate the effect of the parenting tutorial on the number of steps approaching a feared stimulus that is achieved by the child.

To investigate whether the increased steps towards the fearful stimulus achieved by children in the parenting tutorial condition was mediated by changes in parenting, we conducted a Hayes PROCESS mediation analysis (Hayes, 2017). First, we calculated a difference score for number of steps (post-intervention minus pre-intervention steps) to

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serve as the dependent variable. We created difference scores for ‘approach’ and ‘avoidant’ parenting (post-intervention parenting minus pre-intervention parenting) to represent changes in parenting, with both of these variables entered as mediators.

The mediation model explained 13.0% of the variance in number of steps achieved. There was a significant indirect effect of ‘change in avoidance parenting’ on the number of steps that children achieved, $b=0.25$, 95% CI [0.05, 0.47], suggesting that the relationship between the parenting tutorial and the number of steps that children achieved was mediated by a change in avoidance parenting (see Figure 5).

INSERT FIGURE 5

Discussion

We hypothesised that ‘approach parenting’ would be positively associated with the number of steps achieved by children towards the fearful stimulus, and that ‘avoidance parenting’ would be negatively associated with number of steps. However, this did not seem to be the case. Notably, parental anxiety and children’s trait anxiety scores did not moderate this result. Whilst it is not clear why approach and avoidance parenting were not associated with the number of steps achieved, the lack of a moderation effect of parental anxiety and children’s trait anxiety was as expected. For instance, parental anxiety was not hypothesised to moderate the relationship between approach/avoidance parenting and the number of steps completed as it was anticipated that the cues given to

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children through parenting behaviours would be more influential on their behaviour than parents' clinical status.

We then examined the impact of a short video tutorial that aimed to reduce 'avoidance parenting' and increase 'approach parenting'. Analyses indicated that it was, for the short time-frame that we studied, and in our laboratory setting, successful in these goals. When comparing parenting pre- and post-tutorial, 'approach parenting' increased at trend-level and 'avoidance parenting' decreased substantially, in parents who watched the parenting video, but did not significantly change in those who watched the control video. These findings, along with the finding that parent training can reduce parents family accommodation behaviours (Lebowitz et al., 2014), support the suggestion that fear-related parenting behaviours can be successfully modified. Notably, and as hypothesised, these significant changes in parenting behaviour were not moderated by parents' clinical status or by children's anxiety scores: Both anxious and non-anxious parents, and parents of more and less anxious children all showed the same pattern of results in response to the video-manipulation.

Moreover, the parenting video appeared to have a positive impact on outcomes for children. Children whose parents watched the 'Managing Fear' video increased the number of steps they completed towards the subsequent fearful stimulus, compared to children whose parents saw the control video, who showed no significant change. This increase in number of steps taken was seen across anxious and non-anxious parents, and for more and less anxious children.

Finally, 'avoidance parenting' mediated the change seen in the number of steps children took as a result of the intervention. That is, the 'Managing Fear' video caused

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reductions in ‘avoidance parenting’, which in turn led to an increase in the number of steps towards the fearful stimulus that children were willing to make.

The results from the ‘Managing Fear’ tutorial suggest that not only can parenting behaviour in fearful contexts be manipulated, but that this impacts on children’s approach/avoidance behaviour. Whilst previous research has highlighted the benefits of reducing family accommodation behaviours on children’s anxiety (Cobham et al., 2017; Lebowitz et al., 2014), the current study provides evidence to suggest that parent training focused specifically on parental modelling of fear and provision of verbal information is also beneficial in reducing children’s avoidance behaviours.

Increasing children’s approach behaviour and reducing avoidance is key to managing and overcoming anxiety, and enabling parents to do this themselves is a key clinical goal. The parenting tutorial achieved this irrespective of parents’ and children’s anxiety status.

It is notable that ‘avoidance parenting’ seemed more important than ‘approach parenting’ throughout our analyses. It may be that reducing ‘negative parenting’ is the key to reducing avoidance in children, rather than increasing ‘approach parenting’.

Strengths and Limitations

The study had a number of strengths, including: using, for the first time, clinically anxious parents; employing stimuli that children felt some existing fear towards; and using an observational measure of both parenting and children’s behaviour.

However, it was not without limitations. Although all clinically anxious parents had their diagnosis verified by means of a clinical interview (ADIS), resources were not

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available to employ this procedure with non-clinical parents. Therefore, it is possible that some of the non-clinical parents had anxiety disorders that were ‘missed’, although screening using the PDSQ and STAI means that this was likely to be rare. Likewise, participants were only screened for anxiety disorders, and it is possible that alternative diagnoses were present for some participants, which could have affected the results of the study.

The study explores short-term outcomes only: It is not clear whether the positive impacts of the tutorial are maintained longer term, or whether they generalize beyond the confines of the laboratory. However, a recent trial of a brief, preventative parenting intervention (using principles similar to those included in the parenting tutorial in the current study) found that children whose parents were in the intervention condition were 16.5% less likely to have an anxiety disorder 12-months later, compared to those in the control condition (Cartwright-Hatton et al., 2018).

Children’s anxiety was rated by parents, which introduces some biases and does not always correlate highly with children’s self-reports. However, the age of the children in this study (5-9 years) meant that self-report measures were not suitable (most are validated only for those aged eight and over).

For ethical reasons children selected animals that they were moderately scared of rather than animals that they were very fearful of, which may have meant that children were more willing to approach these stimuli than they would have been for more fear-provoking stimuli. Further research would benefit from testing this tutorial for children with clinical levels of fear towards the stimuli.

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For ethical and pragmatic reasons, some stimuli sets employed taxidermy-prepared animals rather than live animals, which may have been a confound. However, analyses comparing the number of steps completed by children approaching the live and taxidermy-prepared stimuli (at the pre-intervention stage) indicated no significant differences between the stimuli types ($t=0.60, p=.55$).

We were surprised to see very few instances of parents criticising their children during our tasks and this behaviour had to be removed from analyses. Clinically, parents frequently tell us that they do this, and so the lack of this behaviour in the laboratory raises the possibility that demand characteristics were at play.

Finally, although an attempt was made to recruit both mothers and fathers to this study, fathers were under-represented in the sample. Further research is required to verify if the same effects are seen within a sample of fathers.

Conclusions

‘Avoidance parenting’ when children are approaching a fearful stimulus may be unhelpful, perhaps more so than a lack of ‘approach parenting’. However, we have shown that both types of parenting are amenable to manipulation by means of a short video tutorial. Moreover, changes in parenting subsequent to the video resulted in increased approach/reduced avoidance behaviour in children, and these changes occurred regardless of parents’ or children’s pre-existing anxiety status. Further research is needed to explore longer-term outcomes, but the present study provides promising evidence that parenting is amenable to change and can have a significant impact on children’s approach to fearful stimuli.

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Table 1. *Steps towards stimuli*

Step	Description
1	Child looks at cartoon picture of animal
2	Child touches cartoon picture of animal
3	Child looks at photograph of animal
4	Child touches photograph of animal
5	Child looks at toy animal
6	Child touches toy animal
7	Child stands in same room as caged real animal
8	Child stands next to caged real animal
9	Child touches cage
10	Child opens cage
11	Child places hand in cage without touching animal
12	Child touches real animal briefly
13	Child touches real animal for 5 seconds

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Table 2: Item loadings for the ‘approach parenting’ and ‘avoidance parenting’ factors

	Component 1: Approach Parenting	Component 2: Avoidance Parenting
Encouraging approach behaviours	.848	
Positive vicarious behaviours	.666	
Reinforcing approach behaviours	.566	
Confident verbal information	.506	
Criticism		
Reinforcing avoidance behaviours		.690
Fearful verbal information		.667
Encourage avoidance behaviours		.626
Negative vicarious behaviours		.443

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Table 3. Summary scores of key dependent variables pre- and post-intervention

	Clinically Anxious Parent		Non-Anxious Parent		All Participants	
	Mean (SD)		Mean (SD)		Mean (SD)	
	Pre	Post	Pre	Post	Pre	Post
	(n = 37)	(n = 36)	(n = 35)	(n = 34)	(n = 72)	(n = 70)
Approach	1.15 (0.76)	1.40 (0.93)	1.37 (1.00)	1.24 (0.88)	1.26 (0.89)	1.32 (0.90)
Parenting						
Avoidance	0.20 (0.25)	0.17 (0.29)	0.16 (0.22)	0.17 (0.28)	0.18 (0.24)	0.17 (0.29)
Parenting						
Steps taken	11.87 (1.29)	12.25 (1.20)	11.66 (1.63)	11.79 (1.55)	11.76 (1.46)	12.03 (1.39)
towards fear						
stimulus						

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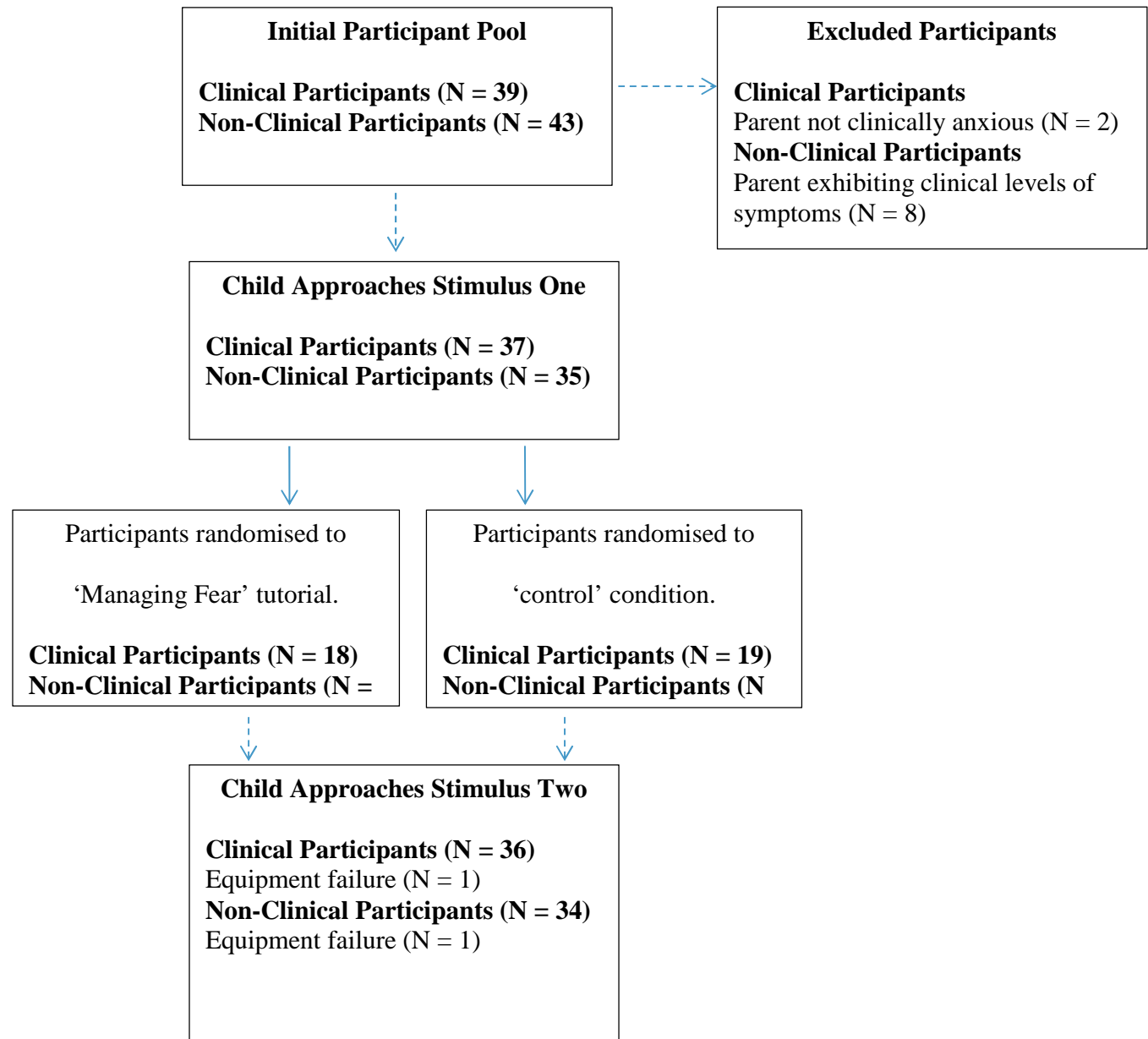


Figure 1: Participant Flow

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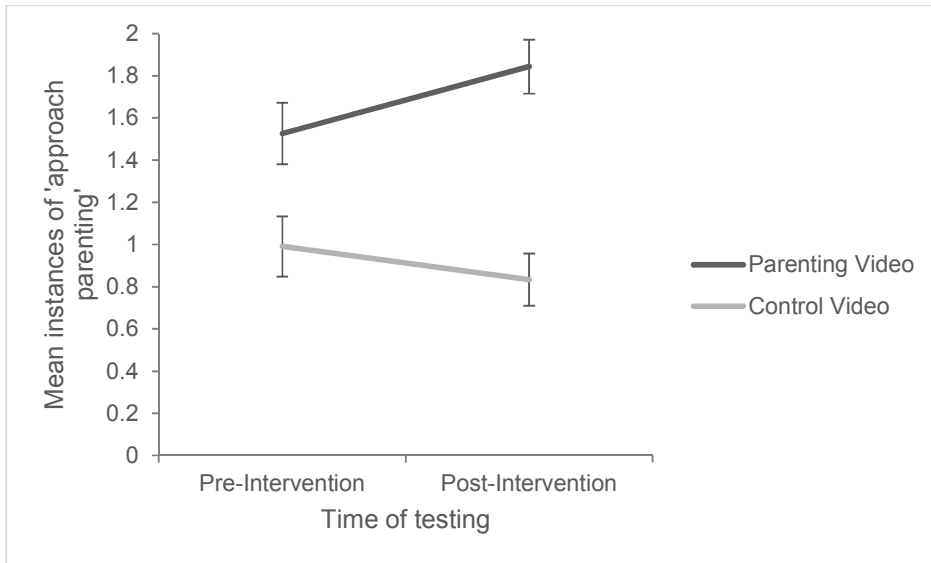


Figure 2. Mean instances of 'approach parenting' in each 30 seconds, pre- and post-intervention for those watching the 'Parenting Video' and the 'Control Video'.

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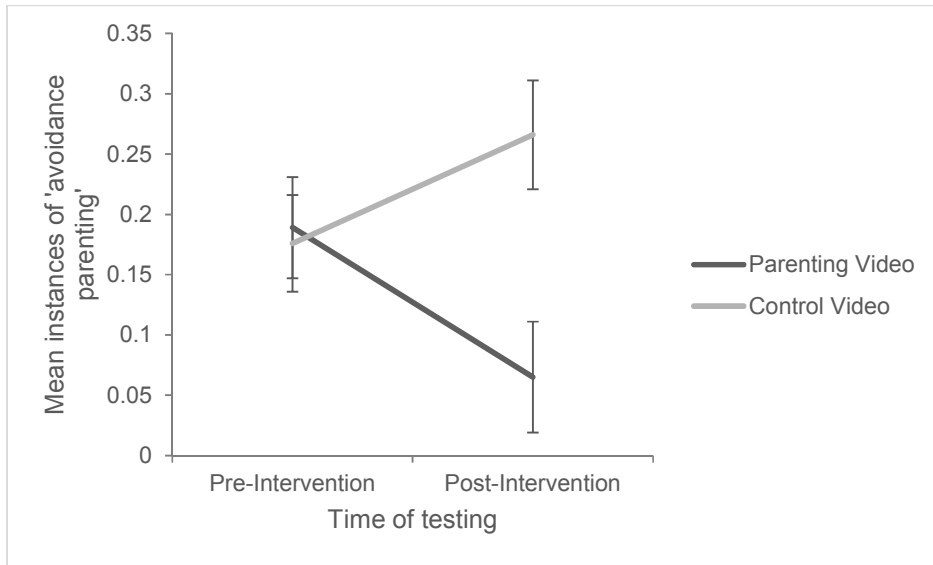


Figure 3. Mean instances of 'avoidance parenting' in each 30 seconds, pre- and post-intervention for those watching the 'Parenting Video' and the 'Control Video'.

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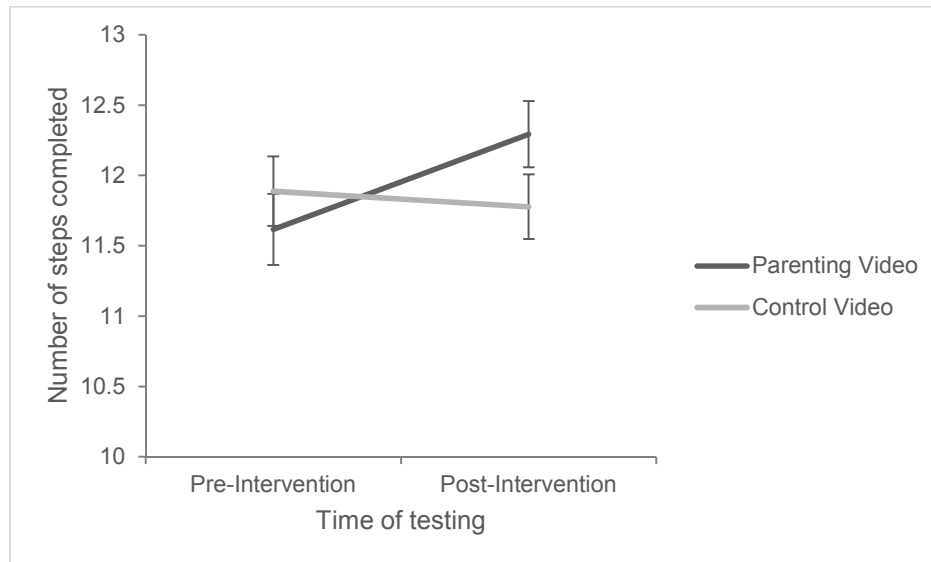


Figure 4. Mean number of steps towards the fearful stimulus, achieved pre- and post-intervention for children of those watching the 'Parenting Video' and the 'Control Video'.

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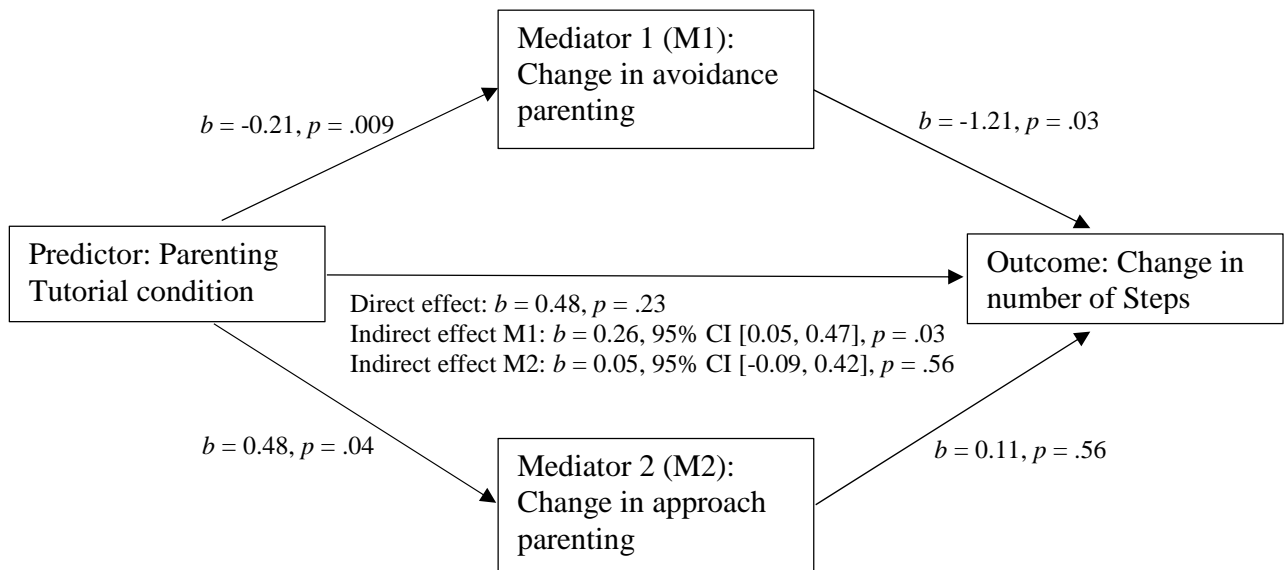


Figure 5: Model of the parenting tutorial condition as a predictor of the change in the number of steps achieved by the child, mediated by change in ‘avoidance’ parenting and change in ‘approach parenting.’