



MONASH University

**The Development, Feasibility and Acceptability of an Enhanced Cognitive-
Behavioural Therapy for Adults with Anxiety Disorders Parenting an
Anxious Child**

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Abbreviations

ABS	Australian Bureau of Statistics
ADIS-5	Anxiety Disorders Interview Schedule for DSM-5
APA	American Psychiatric Association
APS	Australian Psychological Society
BDI-II	Beck Depression Inventory
CBT	Cognitive Behavioural Therapy
CGI-I	Clinical Global Impressions – Improvement
CGI-S	Clinical Global Impressions – Severity
CSQ-8	Client Satisfaction Questionnaire
C-SSRS	Columbia-Suicide Severity Rating Scale
DSM-5	Diagnostic and Statistical Manual, 5 th Edition
GAD	Generalised Anxiety Disorder
MDD	Major Depressive Disorder
MRC	Medical Research Council
NICE	National Institute for Health Care and Excellence
PAM	Parental Anxiety Management Program
PD	Panic Disorder
PDD	Persistent Depressive Disorder
POM	Parental Overprotection Measure
PSS	Parental Stress Scale
PWM	Parent Worry Measure
RCT	Randomised Controlled Trial
SAD	Social Anxiety Disorder
SRS	Session Rating Scale

STAI-S	State-Trait Anxiety Inventory State Form
TAU	Treatment as Usual
TCBT	Transdiagnostic Cognitive Behavioural Therapy
TFA	Theoretical Framework of Acceptability
THQ	Therapy Helpfulness Questionnaire
WHOQOL-BREF	World Health Organisation Quality of Life Scale Abbreviated Version
WLC	Wait List Control

Abstract

Anxiety disorders are the most commonly occurring mental disorders in adults, and are associated with significant burden of disease and functional impairment. Anxiety disorders also aggregate within families and commonly occur in parents of children with anxiety disorders, where child anxiety disorders are associated with an up to five-fold increase of anxiety disorders in their parent. Parents can also experience additional challenges within the context of child anxiety disorder, such as increased distress and worry about their child, decreased parenting adjustment, and strained family relationships. Despite these impacts on parents, much of the literature has focussed on improving child treatment outcomes through investigation of parent factors contributing to the development and maintenance of anxiety disorders in children. However, mounting empirical research supports the theory that anxiety disorder development and maintenance amongst parents and children is based on a relationship that is reciprocal or bidirectional. Hence, in anxious adults parenting an anxious child, it is hypothesised that child anxiety can exacerbate and maintain anxiety in their parent through increased anxious cognitions related to their child and/or the parenting role, and parenting behaviours elicited in response such as over-control.

Cognitive behavioural therapy (CBT) is the most empirically supported psychotherapy for anxiety disorders, however, approximately half of adults who receive CBT do not achieve remission of their anxiety disorder diagnosis post-treatment. Further, systemic factors such as the bidirectional contributions of child anxiety disorder are not typically addressed in adult CBT, possibly contributing to sub-optimal remission rates. Given that adults with anxiety disorders who are parenting an anxious child represent a particularly vulnerable group of the community, there is a clear need for the development of a systemically-informed CBT intervention targeting anxiety disorders in this population. Therefore, the present thesis aimed to (1) develop an enhanced CBT intervention for the

treatment of anxiety in parents of children with co-occurring anxiety disorders; and (2) investigate the initial feasibility and acceptability outcomes of the proposed enhanced CBT intervention via an open-label mixed-methods pilot study. The thesis consists of three major outputs, including the enhanced intervention parent treatment manual, and two manuscripts detailing the enhanced intervention protocol and empirical outcomes, respectively.

Disruptions caused by the COVID-19 pandemic resulted in the premature termination of the pilot study, impacting primarily on the reporting of feasibility results. However, despite the significant disruptions, initial results were promising. Acceptability results showed the enhanced intervention was perceived as effective, that systemic adaptations were valued by parents, and appeared to meet the needs of the target population via indications the intervention enhancements could modify anxiety-maintaining parenting behaviours and cognitions. Additionally, parent's provided rich descriptions of dyadic anxiety experiences, contributing to existing research exploring the bidirectional impacts of anxiety in parent–child dyads, while also supporting the bidirectional adaptations underpinning the enhanced intervention. Feasibility outcomes were also encouraging, where results were suggestive of good participant engagement during the intervention trialling and also provided initial indication of participants' intervention response. Together, findings suggest the enhanced intervention offers an alternative approach to standard CBT, that may better meet the needs of adults with anxiety disorders who are parenting an anxious child.

Overall, the investigations of this thesis have broadened the focus of traditional CBT interventions for anxiety disorders in adults through consideration of the systemic dyadic factors contributing to anxiety disorder maintenance in anxious adults who are parenting an anxious child. Results have implications for the future iterations of the parent treatment manual, as well as for research and clinical practice. While initial results suggest the enhanced intervention is valued and meets the needs of anxious adults parenting an anxious

child, further experimental evaluation of the intervention via randomised controlled trials are required to extend upon the present findings, as well as determine treatment efficacy and cost-effectiveness.

Publications During Candidature

This thesis contains the following manuscripts published in peer-reviewed journals and academic repositories:

Galea, S., & Lawrence, K. A. (2021). Enhanced CBT for anxiety disorders parent treatment manual. Monash University. Online resource. <https://doi.org/10.26180/16781449>

Galea, S., Salvaris, C. A., Yap, M. B. H., Norton, P. J., & Lawrence, K. A. (2021). Feasibility and acceptability of an enhanced cognitive behavioural therapy programme for parent–child dyads with anxiety disorders: A mixed-methods pilot trial protocol. *Pilot and Feasibility Studies*, 7(109), 1-12. <https://doi.org/10.1186/s40814-021-00846-8>

Thesis Including Published Works Declaration

I hereby declare that this thesis contains no material which has been accepted for the award of any other degree or diploma at any university or equivalent institution and that, to the best of my knowledge and belief, this thesis contains no material previously published or written by another person, except where due reference is made in the text of the thesis.

This thesis includes one original paper published in peer reviewed journals and one submitted publications. The core theme of the thesis is improving the treatment of anxious adults parenting an anxious child via an enhanced CBT intervention for anxiety disorders. The ideas, development and writing up of all the papers in the thesis were the principal responsibility of myself, the student, working within the Turner Institute for Brain and Mental Health and School of Psychological Sciences under the supervision of Doctor Katherine A. Lawrence and Associate Professor Marie B. H. Yap.

The inclusion of co-authors reflects the fact that the work came from active collaboration between researchers and acknowledges input into team-based research. In the case of chapters two, three, and four, my contribution to the work involved the following:

Thesis Chapter	Publication Title	Status (published, in press, accepted or returned for revision, submitted)	Nature and % of student contribution	Co-author name(s) Nature and % of Co-author's contribution	Co-author(s), Monash student Y/N
Two	Enhanced CBT for Anxiety Disorders Parent Treatment Manual.	Published via data repository; link to full manual and excerpts provided in thesis.	75%. Concept development; reviewed literature; translated research evidence; drafted, and revised content of the intervention; manual synthesis, and preparation.	1) Katherine A. Lawrence, Concept development; review of drafts; input into manual preparation 25%.	No

Three	Feasibility and acceptability of an enhanced cognitive behavioural therapy programme for parent–child dyads with anxiety disorders: A mixed-methods pilot trial protocol.	Published	40%. Published under joint-first authorship agreement; Obtained ethics approval; registered trial with ANZCTR; concept development; manuscript synthesis and preparation.	1) Chloe A. Salvaris, Concept development, manuscript synthesis and preparation 40%. 2) Marie B. H. Yap, Concept development; input into manuscript 5%. 3) Peter J. Norton, Concept development 5%. 4) Katherine A. Lawrence, Concept development; input into manuscript 10%.	Yes No No No
Four	Acceptability of an enhanced transdiagnostic CBT intervention for adults with anxiety disorders who are parenting an anxious child.	Accepted	70%. Concept development; recruitment and data collection; data screening and preparation; data analysis and interpretation; manuscript synthesis and preparation.	1) Catherine Wade, Input into data analysis; input into manuscript 8%. 2) Chloe A. Salvaris, Assisted with recruitment; input into manuscript 6%. 3) Marie B. H. Yap, Concept development; input into manuscript 8%. 4) Katherine A. Lawrence, Concept development; input into manuscript 8%.	No Yes No No

I have renumbered sections of submitted or published papers in order to generate a consistent presentation within the thesis.

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I hereby certify that the above declaration correctly reflects the nature and extent of the student's and co-authors' contributions to this work. In instances where I am not the responsible author I have consulted with the responsible author to agree on the respective contributions of the authors.

Main Supervisor name: Dr. Katherine Lawrence

Main Supervisor signature:

Date:

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When entering into the doctorate, I knew that I had signed up for a marathon and not a sprint. I knew that things would be challenging and at times trying, but never could I have predicted what was actually in store. On top of the usual challenges of research, a late change in the supervisory team, crippling carpal tunnel, and disrupted plans caused by a ‘once in a lifetime’ global pandemic threatened to derail the dream. Yet, I got there in the end and for all of its challenges, the lessons I have learnt in tenacity and perseverance will hold me in good stead for any future challenges to come. But I could not have got there without the support of those around me, thus, I have a number of people I’d like to thank for helping me get across that marathon finish line.

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Preface

Preface

Thesis Focus

The focus of this dissertation is on anxiety disorders in anxious adults who are also parenting an anxious child. Anxiety disorders are the most common mental disorders in adults and result in significant functional impairment and burden. Anxiety disorders also commonly emerge during childhood, and as such frequently aggregate within families amongst parents and children. Despite the frequency of anxiety disorder occurrence within families, much of the existing literature has focused on the parent factors which contribute to the development and maintenance of anxiety disorders in children. However, emerging evidence posits that child anxiety disorder is associated with increased anxiety-related parenting behaviours and anxiety symptoms in the parent, suggesting there are unique bidirectional factors within the parent and child relationship that contribute to and maintain anxiety disorders within the dyad. Consequently, inadequate treatment of anxiety disorders in anxious adults parenting an anxious child can result in significant negative intergenerational consequences and perpetuation of anxiety disorders within families.

When examining existing treatment for adults with anxiety disorders, cognitive behaviour therapy (CBT) is recognised as the most efficacious and cost-effective intervention. However, a significant proportion of adults who receive CBT do not achieve anxiety disorder remission following treatment, suggesting significant scope for the improvement of CBT treatment outcomes exists. Perhaps the most pertinent to parents of children with co-occurring anxiety is that wider systemic factors are typically not addressed during typical adult CBT treatment. Consequently, this population of anxious adults parenting an anxious child may not be receiving the appropriate clinical attention and treatment they need. Given the mounting societal costs of anxiety disorders, high prevalence and heritability amongst parents and children, and the impact on individuals and families, a

compelling argument for the continuation of research and development into effective anxiety disorder treatment in anxious adults parenting an anxious child is warranted.

Therefore, the present thesis aimed to: (1) develop the first systemically-informed enhanced CBT intervention for the treatment of anxiety in adults who are also parents of children with co-occurring anxiety disorders; and (2) conduct the initial investigations into the feasibility and acceptability of the proposed enhanced CBT intervention via an open-label pilot study. Feasibility and acceptability investigations included collection of a range of symptom and engagement outcome data obtained from parents who received the enhanced intervention. Additionally, qualitative interviews were conducted to obtain rich participant perceptions of intervention acceptability and bidirectional experiences of anxiety disorders within parent-child dyads.

Overview of Thesis Chapters

The present thesis comprises of six chapters, including two manuscripts submitted to academic journals for publication, and the enhanced CBT parent treatment manual published via an open-access online repository. Given the nature of a thesis via publication, there is some inevitable repetition of concepts throughout the thesis.

Following on from this section, Chapter 1 details the introduction and literature review. The literature review presents a theoretical foundation for the specific bidirectional parent-child factors which contribute to the exacerbation and maintenance of anxiety in parents of children with co-occurring anxiety disorders. Further, an overview of existing anxiety disorder CBT treatment for adults is provided to establish a theoretical framework for the importance of developing adequate anxiety intervention for anxious adults parenting an anxious child. Together, these sections form the rationale for the current thesis and the thesis aims. Chapter 2 comprises the first extended methodology chapter, related to the development of the enhanced intervention parent treatment manual. The chapter details the

enhanced intervention programme theory, along with the adaptations made to deliver the intervention to the target population, and a web-link to access the parent treatment manual in its entirety. Next is the second extended methodology Chapter 3, which presents the first published manuscript, the open-label pilot study protocol. The protocol details the methodology of the pilot study conducted to explore the feasibility and acceptability of the enhanced intervention parent treatment manual.

Chapters 4 and 5 detail the results of the pilot study investigations, however significant impacts caused by the COVID-19 pandemic had implications on the planned reporting of results. Accordingly, acceptability results are detailed in Chapter 4 and are presented via the second manuscript submitted for publication. This manuscript addresses the specific thesis aims related to acceptability and details the findings from qualitative interviews conducted with parents to determine prospective and retrospective intervention acceptability. The feasibility results then follow in Chapter 5, and given outcomes were not considered publishable, a preliminary discussion of these results was also included in this chapter. Finally, Chapter 6 encompasses the integrated discussion. This chapter includes an overview of the research findings and their implications for the literature, along with a discussion of the strengths and limitations of the present research, commentary on future directions, and concluding remarks.

Chapter 1

Anxiety Disorders in Adults who are Parenting an Anxious Child

Chapter 1 – Anxiety Disorders in Adults who are Parenting an Anxious Child

1.1 Anxiety Disorders: Prevalence and Consequences

Anxiety disorders are defined as a cluster of disorders that share characteristics of excessive fear and anxiety with related behavioural difficulties (American Psychiatric Association [APA], 2013). Although considerable overlap exists between the two states, fear is defined as the emotional response to a real or perceived imminent threat, where anxiety is the anticipation of a future threat. Anxiety disorders also differ from normative fear or anxiety as the response is considered excessive, hence individuals with anxiety disorders typically overestimate danger in situations. The current edition of the *Diagnostic and Statistical Manual of Mental Disorders* (DSM-5; APA, 2013) includes the following disorders in the category of anxiety disorders: selective mutism, separation anxiety disorder, specific phobia, panic disorder, agoraphobia, social anxiety disorder, generalised anxiety disorder, anxiety disorder due to another medical condition, other specified anxiety disorder, and unspecified anxiety disorder. While selective mutism and separation anxiety disorder have long been considered disorders of childhood, the diagnostic criteria have been expanded in the DSM-5 to include diagnosis in adults. Although anxiety disorders are frequently highly comorbid with each other, differentiation can be achieved by close examination of the types of situations that induce fear, anxiety, or avoidance behaviours, and the content of the associated cognitions (APA, 2013).

Globally, anxiety disorders are consistently found to be the most prevalent class of adult mental disorders, and the ninth leading cause of disability (Baxter et al., 2013; Vos et al., 2016). Consistent with global prevalence, anxiety disorders are also the most prevalent class of mental disorders in Australian adults (Australian Bureau of Statistics [ABS], 2008). In the most recent population based mental health survey, *The 2007 National Survey of Mental Health and Wellbeing*, lifetime prevalence rates of anxiety disorders in Australians

were estimated at 26.3%, and a 12-month prevalence rate of 14.4% (ABS, 2008). Anxiety disorders in Australia are also included in the top ten contributors to burden of disease and are consequently associated with a considerable economic burden (Australian Institute of Health and Welfare, 2019; Konnopka et al., 2009). The annual direct healthcare cost associated with anxiety disorders in 2007 was estimated at AUD\$376 million (Lee et al., 2017), while significant indirect costs related to reduced working capacity and access to welfare are also reported (Rice & Miller, 1998). Employed individuals with anxiety disorders are more likely to experience diminished working capacity in comparison to non-anxious individuals, costing AUD\$4.99 billion per annum (Greenberg et al., 1999; Lee et al., 2017). Additionally, individuals with anxiety disorders experience high rates of unemployment and dependence on disability, welfare, and unemployment payments, costing approximately AUD\$7.07 billion per annum (Lee et al., 2017; Leon et al., 1995).

Anxiety disorders are also associated with poorer quality of life, where individuals with anxiety disorders report worse mental and physical functioning than those in the general population (Beard et al., 2010). Specifically, lower functioning is described in the areas of social relationships, occupation, health, and home and family life (Olatunji et al., 2007). Consequently, the association between anxiety disorders and suicidal behaviour have been consistently reported in the literature for both cross-sectional population based and clinical studies (Cox et al., 1994; Nepon et al., 2010; Sareen et al., 2005; Weissman et al., 1989).

Anxiety disorders often emerge during childhood, and as such, are highly prevalent amongst Australian children, where anxiety disorders are considered the second most prevalent mental disorder in this population (Lawrence et al., 2015). In Australian children aged 4-11 years old, 12-month prevalence rates are estimated at 6.9% (Lawrence et al., 2015) and if left untreated, anxiety disorders which develop early in life can become chronic (Letcher et al., 2012) and have a high probability of recurrence (Bruce et al., 2005). While

less is known about the economic costs and burden, it is projected that anxiety disorders in children carry a high health and social cost (Bodden, Dirksen, et al., 2008). Additionally, childhood anxiety disorders are associated with impaired functioning (Essau et al., 2000; Langley et al., 2004) and reduced quality of life in a number of domains including social, family, and academic (Lawrence et al., 2015). Therefore, the commonality of anxiety disorders in adults and children, and the associated significant economic burden and functional impairment, underscores the importance of effective anxiety disorder treatment for the benefit of individuals, families, and the broader society.

1.2 Aetiology of Anxiety Disorders

Aetiological models postulate several interacting vulnerabilities or diatheses that contribute to the development of anxiety disorders, including genetic, personality, neurobiological, cognitive, emotion, and learning theories (Barlow, 2002; Brown & Naragon-Gainey, 2013). It has also long been clear that anxiety disorders involve a familial component (e.g. Torgersen, 1983), suggesting familial aggregation of anxiety disorders. Anxiety disorders are among the first psychological disorders to manifest, where the mean age for anxiety disorder development is 11 years (Kessler et al., 2005). There is also evidence for both heterotypic and homotypic anxiety disorder diagnostic stability across childhood and adulthood (Ferdinand et al., 2007; Hovenkamp-Hermelink et al., 2016; Pine et al., 1998). Therefore, while it is important to understand factors that contribute to anxiety disorder development in individuals, it is also useful to understand factors that might contribute to anxiety disorder development and maintenance within families. A theoretical approach including early developmental processes and events related to the familial and rearing environment is considered particularly relevant to understanding how anxiety disorders emerge and are maintained (Leonardo & Hen, 2008). While discussion of each of the many aetiological factors that contribute to anxiety disorder development is beyond the scope of the

present thesis, the following Sub-sections 1.2.1 and 1.2.2 provide an overview of developmentally sensitive factors relevant to biological and environmental contributions of anxiety disorder development and maintenance in parents and children. First, heritable biological pathways to anxiety disorder development are discussed, followed by environmental contributions within parent-child dyads.

1.2.1 Biological Factors Related to Anxiety Disorder Development: Genetics, Personality, and Temperament

In family concordance studies, the heritability of anxiety disorders is substantial (Hettema et al., 2001; Johnson et al., 2008; Lawrence, Murayama, et al., 2019; Merikangas et al., 1999). Top-down studies estimate that in parents with anxiety disorders, up to 60% of children also meet criteria for an anxiety disorder, while ‘bottom-up’ studies indicate that in children with anxiety disorders, up to 80% of their parents also meet criteria for an anxiety disorder (Ginsburg & Schlossberg, 2002). More specifically, intergenerational studies investigating children of parents with anxiety disorders, and parents of children with anxiety disorders estimate that both groups are approximately five times more likely to develop an anxiety disorder relative to the base rate (Beidel & Turner, 1997; Cooper et al., 2006; Lieb, 2000; Percy et al., 2016; Spence et al., 2002). Together, this research indicates that anxiety disorders are not only common in adults and children, but frequently aggregate in families amongst parents and children, suggesting intergenerational transmission of anxiety disorders.

Given the significant familial aggregation, a number of heritable biological factors have been identified as potential influences of anxiety disorder development. These factors include genetics, the personality factor neuroticism, and trait behavioural inhibition, with empirical support for the contribution of heritable factors demonstrated within the literature. Meta-analytic estimates obtained through genetic epidemiological twin studies which estimate shared environmental and genetic variability, indicate moderate genetic heritability

of approximately 30-50% across the anxiety disorders in adults (Hettema et al., 2001; Shimada-Sugimoto et al., 2015), with similar estimates obtained for children and adolescents (Chen et al., 2015; Scaini et al., 2012). Support for the role of neuroticism in the anxiety disorders has also been shown in twin studies, with high correlations between the two variables evident in both adults (Hettema et al., 2006; Khan et al., 2005) and children (Muris et al., 2009; Vreeke & Muris, 2012). Additionally, the link between behavioural inhibition and anxiety disorders has been demonstrated by studies indicating an increased prevalence of anxiety symptoms and disorder in behaviourally inhibited children (Hirshfeld et al., 1992; Hirshfeld-Becker et al., 2007; Muris et al., 2011; Prior et al., 2000; Stumper et al., 2017)

While evidence has linked genetic and personality factors with anxiety disorder development, these studies cannot specify the extent to which biological factors and the environment contribute to anxiety transmission from parent to child. However, genetically informed studies, such as the children of twins model, can estimate this transmission (McAdams et al., 2014). A recent large population based children of twins study conducted by Eley et al. (2015), indicated that the relationship between parent and child anxiety was largely mediated by the environment, independent of genetic confounds. Further, neuroticism was investigated as a comparison group, with results indicating that the transmission of neuroticism from parent to child was also largely mediated through shared environmental and not genetic factors. Additionally, a recent meta-analysis conducted by Ahmadzadeh et al. (2021) explored causal associations between parent and child internalising disorders, including depression and anxiety, after controlling for genetic relatedness. Results indicated a significant association between concurrent parent anxiety symptoms and child internalising symptoms, reflecting a causal environmentally mediated influence between parents and children.

Further, when exploring the contribution of behavioural inhibition, cross-sectional and longitudinal studies suggest that environmental influences moderate this relationship (Ryan & Ollendick, 2018). Cross-sectional studies indicate that behavioural inhibition predicted internalizing symptoms and anxiety in children when their parents also exhibited high levels of control and overprotection (Karreman et al., 2010; Vreeke et al., 2013). Longitudinally, behavioural inhibition during early childhood predicted social anxiety symptoms in adolescence, but only for adolescents who experienced high levels of maternal control as young children (Lewis-Morrarty et al., 2012).

Taken together, while there is evidence to suggest that genetic and personality traits account for some heritability of anxiety disorders, the vast majority of variance within parent-child dyads appears attributable to environmental factors (Ahmadzadeh et al., 2021; Eley et al., 2015). Additionally, much like genetics and personality; behavioural inhibition is assumed to reflect a fundamentally biological process, however the constellation of behaviours classified and expressed under behavioural inhibition likely involve a mixture of biological and environmental risk (Ryan & Ollendick, 2018). Therefore, as environmental parent-child risk factors are considered modifiable, that is they are potentially able to be altered, they serve as key factors to consider when developing intervention (Schleider & Weisz, 2017).

1.2.2 Environmental Contributions to Anxiety Disorder Development: The Influence of Parenting Behaviours and Psychopathology

Given the evidence suggesting a significant role for environmental contributions, particularly those related to the rearing environment, much of the developmental research has investigated parental effects on the child's behaviour and psychopathology. Developmental models also propose that parenting may have a greater influence on children earlier in their development (e.g. primary school aged 6-12 years old), and that this influence decreases

during adolescence as a result of increased socialisation with individuals other than parents (Chorpita & Barlow, 1998; Connell & Goodman, 2002). Therefore, as anxiety is often maintained through the avoidance of threatening stimuli, parenting behaviours that foster or enhance avoidance strategies are proposed to maintain anxious behaviours, and contribute to the development of anxiety disorders in children (Chorpita & Barlow, 1998; Hudson & Rapee, 2009; Rapee, 2001). Subsequently, the parenting behaviours of parental over-control, parental rejection, accommodation, modelling of anxiety and information transfer have been identified as factors that may increase a child's sense of threat and limit their mastery and control over the environment (Bögels & Brechman-Toussaint, 2006; Lawrence, Waite, et al., 2019; Lebowitz et al., 2013; Murray et al., 2009). Parental over-control is typically defined as a behavioural pattern involving excessive regulation of a child's activities and routines, including over-protection, over-involvement and vigilance, lack of autonomy granting, and discouragement of child independence (Bögels & Brechman-Toussaint, 2006; Wei & Kendall, 2014; Wood et al., 2003). Additionally, parental rejection is generally conceptualised by criticism, and lack of warmth and acceptance, while accommodation refers to changes in parental routines and behaviours intended to avoid or alleviate anxious distress in the child (Bögels & Brechman-Toussaint, 2006; Lebowitz et al., 2020). Anxiety modelling encompasses the demonstration, observation, and imitation of others' anxiety behaviours, and information transfer involves the communication of environmental threat to the child (Fisak & Grills-Tauchel, 2007; Mineka & Zinbarg, 2006; Murray et al., 2009).

Empirical support for the contribution of these parenting behaviours to child anxiety disorder have been demonstrated by a number of meta-analyses (Iniasta-Sepulveda et al., 2021; McLeod, Wood, et al., 2007; Percy et al., 2016; Pinquart, 2017; Yap & Jorm, 2015) and narrative reviews (DiBartolo & Helt, 2007; Wood et al., 2003), with the greatest evidence linking parental over-control and modelling of anxiety behaviours with child anxiety

disorders (Fisak & Grills-Taquechel, 2007; Hudson & Rapee, 2001; Wei & Kendall, 2014; Wood et al., 2003). Further, other than through the transmission of biological risk, parent anxiety has also been identified as an important environmental risk factor in the development of anxiety disorders in children (Murray et al., 2009; Rapee, 2012). It is hypothesised that parents with anxiety disorders engage in greater over-controlling behaviours (Bayer et al., 2008; Chorpita & Barlow, 1998; Ginsburg & Schlossberg, 2002), increased rejection and low warmth (Ginsburg & Schlossberg, 2002; Rapee, 1997), and more anxiety modelling and fear based information transfer (Hudson & Rapee, 2009; Rapee et al., 2009). Additionally, several experimental studies indicate poorer treatment outcomes for children when their parents also experience anxiety disorders in comparison to children of parents without anxiety disorders (Bodden, Bögels, et al., 2008; Cobham et al., 1998; Compton et al., 2014; Cooper et al., 2008; Creswell et al., 2008; Hudson et al., 2014). Therefore, it has been theorised that parent behaviours mediate the relationship between parent anxiety psychopathology and child anxiety disorder development and maintenance (Murray et al., 2009; Rapee, 2012; Whaley et al., 1999).

1.3 Bidirectional Influence of Anxiety Between Parents and Children with Co-Occurring Anxiety Disorders.

Several parenting factors have been identified as contributing to anxiety disorder development in children, however, developmental theory postulates that the transmission of anxiety disorders within parent-child dyads is based on a relationship that is reciprocal or bidirectional (Ballash et al., 2006; Negreiros & Miller, 2014; Rapee et al., 2009; Spence & Rapee, 2016). Bidirectional theories suggest that while parents can contribute to the development and maintenance of child psychopathology, children also play an active role in shaping their environment and parental response (Rapee et al., 2009; Spence & Rapee, 2016). One of the earliest models emphasizing the importance of bidirectional parent-child effects in

the development of internalising and externalizing disorders was proposed by Bell (1968). In opposition of the traditional view that parents had fixed responses to children, Bell (1968) argued that parents modified their use of parenting techniques based on the congruence between their expectations and the behaviour displayed by the child. Additionally, it was proposed that children who behaved in ways that exceeded parent standards (e.g., hyperactivity, aggression), would elicit upper-limit control behaviours of punishment. On the other hand, children who behaved below parent standards (e.g., low activity, lethargy) would elicit lower-limit control behaviours typified as intrusive and demanding.

Since Bell's (1968) model, a number of contemporary developmental models specific to anxiety disorders have been established (e.g. Ballash et al., 2006; Negreiros & Miller, 2014; Rapee et al., 2009; Spence & Rapee, 2016). However, despite integration into theoretical models of development, Pardini (2008) and Settapani et al. (2013) argue that empirical work thus far has largely focussed on the unidirectional influence of parent factors on the anxiety disorder development and treatment outcomes in children. In contrast, there is a paucity of research examining the influence of child factors on parents, particularly in relation to how child anxiety disorder might exacerbate or impede anxiety disorder treatment in parents (Settapani et al., 2013). This is problematic as the greater emphasis on investigating parent-based effects on child anxiety disorder results in incomplete evidence base, which has negative implications for the interventions offered to parents (Brooker et al., 2015). For example, as the influences of parent factors on child anxiety disorder treatment outcomes are established, many interventions for child anxiety disorders have involved parents to varying degrees in attempt to reduce anxiety in the child (Breinholst et al., 2012; Forehand et al., 2013). However, adult interventions for anxiety disorders have typically ignored the child's potential influence on parent mental health and caregiving, compounded by the dearth of research exploring the factors maintaining anxiety disorders in anxious adults who are

parenting an anxious child (Brooker et al., 2015; Pardini, 2008). Consequently, parents of children with co-occurring anxiety disorders, who may be experiencing anxiety symptoms related to the parenting role, are not currently well catered for by existing interventions. Therefore, it is argued that addressing parental mental health concerns in the context of child anxiety disorders requires the same attention (Wade et al., 2019).

In considering intervention, it is important to understand the factors that contribute to the exacerbation and maintenance of the disorder for the target population (O'Cathain et al., 2019). While it is highly probable that anxious adults parenting an anxious child may have a baseline anxious temperament and/or pre-existing anxiety disorder, it is also likely that these symptoms could be exacerbated by the child's co-occurring anxiety disorder. Therefore, the following Sub-sections 1.3.1 and 1.3.2 incorporate a review of literature relevant to precipitating and perpetuating factors of anxiety disorders in adults within the parenting context. Here, relevant modifiable factors related to anxiety disorder maintenance in parents of children with co-occurring anxiety disorders are discussed, and form the basis of intervention development (Craig et al., 2008; O'Cathain et al., 2019).

1.3.1 Precipitating and Maintaining Factors Associated with the Parenting Role

The transition into parenthood has been identified as a potential risk factor associated with anxiety symptoms and disorder in adults, as the new challenges and life changes experienced can lead to increased stress and reduced adjustment during pregnancy and post-partum (Cowan & Cowan, 2000). In an Australian community sample of 408 mothers, it was found that 16.2% experienced an anxiety disorder at 6 weeks post-partum, where an estimated 82% of diagnosed phobias were found to be new onset disorders (Matthey et al., 2003). Similarly, in a German community sample, 11% of mothers experienced an anxiety disorder at 3-months post-partum, with approximately 2% of these reported as new onset disorders (Reck et al., 2008). Meta-analytic evidence also supports that of women who

experience an anxiety disorder post-partum, a combination will be new onset disorders, while others will experience a relapse or worsening of a pre-existing disorder (Ross & McLean, 2006). Thus, the post-partum period can be a time of increased risk for the development or exacerbation of anxiety disorders and symptoms in parents.

Having children and parenting have been predominantly associated with happiness and satisfaction, yet can also be considered a source of difficulty and stress (Nelson et al., 2014). Consequently, researchers have investigated factors that may contribute to a parent's decreased wellbeing and subsequent psychological distress in the context of the parenting role. Parenting can increase negative emotions, in particular, excessive worry about children's safety (Nelson et al., 2014). One study indicated that parents worry about a number of factors related to their children's health and safety, such as worry about car accidents, and worry about their child being abducted (Stickler et al., 1991). Additionally, parents also worried about their own contribution to their child's welfare, including worries about appropriate discipline, affection, values and being a positive role model. Further, in a population based study exploring parents' and non-parents' emotions, results indicated that parents reported more anxiety-related feelings including fear, restlessness and worry than non-parents (Simon & Nath, 2004). Taken together, given worry is considered to be the hallmark symptom of the anxiety disorders (Barlow, 2002), it appears being in a parenting role can be associated with increased psychological distress.

Past research has also indicated that having children can increase financial strain (McLanahan & Adams, 1987; Ross & Van Willigen, 1996) and dissatisfaction with one's financial position (Vanassche et al., 2013; Zimmermann & Easterlin, 2006). In a study attempting to explore the mechanisms by which financial strain impacts upon parent mental health, results indicated that financial hardship mediated the association between parenthood and psychological stress (Bird, 1997). Accordingly, financial strain has been associated with

increased anxiety symptoms and disorder in adults (Dijkstra-Kersten et al., 2015; Wenzel et al., 2005). Other research has supported a link between parenthood and marital satisfaction, where meta-analytic evidence indicates that marital satisfaction declines after childbirth and is lower in couples with more children (Twenge et al., 2003). Factors identified that may contribute to reduced marital satisfaction include adjusting to co-parenting, negotiating work schedules and the division of household labour (Van Egeren, 2004), along with fatigue, decreased support and reduced quality time (Elek et al., 2002; White et al., 1986). These factors in turn can increase irritability, criticism and conflict within the marriage (Stapleton et al., 2012).

Also, other studies have demonstrated that these factors can be exacerbated in parents of children with complex needs (Brown et al., 2020; Clark et al., 2005; Emerson, 2003). A study by Thurston et al. (2011) investigating psychological distress in parents of children with complex physical, developmental and psychological needs, found that 42% of parents experienced a clinically significant level of psychological distress. Interestingly, the severity of a child's physical dysfunction was not predictive of parent psychological distress, however the child's psychosocial, anxious, and behavioural dysfunction were (Thurston et al., 2011). Therefore, several vulnerability factors associated with parenting contribute to anxiety symptom and disorder in parents, which can be further exacerbated when children experience complex needs including anxiety disorders.

Taken together, having children can be associated with great joy and fulfilment, however it is also clear that parenting is complex and multifaceted. The evidence reviewed highlights the important and unique contribution of parenting as a potential factor that could contribute to anxiety in parents of children with co-occurring anxiety disorders. Therefore, adult interventions which consider broader systemic factors such as the parenting role, may be more effective at alleviating anxiety disorder symptoms in this population.

1.3.2 The Influence of Anxiety Disorders in Children on the Exacerbation and Maintenance of Anxiety Disorders in their Parents

Despite evidence suggesting that factors associated with parenting can increase anxiety symptoms and disorder in parents, much of the developmental literature is directed toward research investigating parent's impact upon the development of anxiety disorders in children. Evidence for the bidirectional contribution of child anxiety disorders can be found in studies investigating the relationship between child anxiety disorder and parenting responses. In a study investigating parenting responses in mothers and children with and without anxiety disorders, mothers of anxious children, regardless of their own anxiety status, were less warm and less autonomy granting than mothers of non-anxious children during a conversational task (Moore et al., 2004). Findings suggested that the presence of the child's anxiety, rather than their parent's psychopathology, had the potential to increase anxiety-related parenting behaviours (Moore et al., 2004). Similarly, in a study by Hudson et al. (2008), mothers of clinically anxious children responded with greater over-involvement than mothers of non-anxious children when their child was experiencing negative affect. In another study by Hudson et al. (2009), mother interactions during a brief anxiety inducing task with unrelated anxious and unrelated non-anxious children were investigated. Results indicated that mothers were significantly more over-involved in interactions with unrelated anxious children than with unrelated non-anxious children (Hudson et al., 2009). Further, in studies investigating direction of change between child anxiety symptoms post-treatment and parenting behaviours, results indicated that decreases in child anxiety symptoms led to decreases in negative and controlling parenting behaviours (Settipani et al., 2013; Silverman et al., 2009). While these cross-sectional results cannot conclusively elucidate direction of effects, cumulatively these studies support bidirectional theories, and suggest a parent's

behavioural response can be negatively influenced by the presence of an anxiety disorder in their child.

Research also supports a relationship between childhood anxiety disorders and anxious cognitions in their parent related to the parenting role. In a study investigating parenting responses to children during conversational tasks, both clinically anxious and non-anxious mothers of children with anxiety disorders expressed greater catastrophising, or threat based, cognitions than mothers of non-anxious children (Moore et al., 2004). Additionally, in studies comparing parents of anxious children with parents of non-anxious children, parents of anxious children were more likely to expect their children to respond to anxiety provoking situations with greater negative emotions, threat interpretation, and low control (Barrett et al., 1996; Creswell et al., 2005; Micco & Ehrenreich, 2008). A potential limiting explanation for these results is that parents of anxious children may be more attuned to threat information, and consequently biased toward a more negative evaluation of child competence (Bar-Haim et al., 2007; Creswell et al., 2005). However, other studies have verified that parent expectations of competence in anxious children are consistent with independent observations, where anxious children exhibit greater anxiety behaviours and perform less well than non-anxious controls during anxiety provoking tasks (Kortlander et al., 1997; Udy et al., 2014). Therefore, authors conclude that reduced parent expectations related to child competence are likely based on previous knowledge of the child's behaviour in anxiety provoking situations (Udy et al., 2014). Consequently, this knowledge of the child's tendency to react anxiously may increase the parent's sharing of anxious predictions, and potentially negatively bias the parent's appraisals of reality (Moore et al., 2004). Therefore, results indicate that in parents of children with anxiety disorders, the presence of child anxiety has the potential to increase anxious cognitions in their parent via increased threat interpretation and expectations of child incompetence.

In addition to parenting behaviours and cognitions, other studies have examined the influence of childhood anxiety disorders on parent anxiety symptoms. Support for this relationship was found in study by Simon et al. (2011) who compared a child-focused and parent-focused intervention aimed at improving child anxiety symptomatology. Findings indicated that both conditions reduced child and parent anxiety, suggesting that improvements in child anxiety could also lead to improvements in parent anxiety symptoms. Another study investigating treatment of children with anxiety disorders found that decreases in parent-reported child anxiety led to decreases in self-reported maternal anxiety symptoms (Settipani et al., 2013). Similarly, a study by Lavalley et al. (2019) found that reductions in parent-reported child separation anxiety symptoms, led to decreases in mothers self-reported separation anxiety symptoms. While these results could be limited by a number of factors such as a confirmation or social desirability bias, results from a recent genetically informed longitudinal study by Ahmadzadeh et al. (2019) provides compelling evidence for the influence of childhood anxiety disorder on parent psychopathology. This study examined intergenerational anxiety transmission amongst 361 parents and children adopted at birth, with results indicating that child anxiety symptoms at age seven prospectively predicted their adoptive mothers' anxiety symptoms at child age eight. Further, when investigating the relationship between adoptive mothers' anxiety symptoms and child anxiety, no mother-to-child effects were found at child age seven or eight. The study employed a strong methodology, where analysis controlled for child inherited biological risk, and sensitivity analysis revealed consistent results across two differing child anxiety measurements utilising both paternal and maternal report. Findings support a role for environmental anxiety transmission from child to parent free from the confounds of genetic risk (Ahmadzadeh et al., 2019). While additional research is required, together these results indicate that presence of

child anxiety disorder symptoms can perpetuate, and even possibly precipitate, anxiety symptoms in their parents.

The research reviewed above suggests that anxiety-related behaviours, cognitions, and psychopathology in parents can be influenced by the presence of anxiety disorders in their child. These results challenge assumptions of a unidirectional parent-to-child anxiety transmission, and support theories of bidirectional anxiety disorder development and maintenance within the dyad. Therefore, along with factors associated with the parenting role, it appears the impact of parenting an anxious child should also be considered in the assessment and treatment of anxiety disorders in parents. However, the evidence does little to elucidate the mechanisms of how these factors contribute to the exacerbation or maintenance of anxiety disorders in said parents. Subsequently, the following Section 1.4 incorporates existing evidence exploring these mechanisms with cognitive and behavioural theories to propose a hypothetical model to explain the relationship between childhood anxiety disorders and the maintenance of anxiety disorders in their parents.

1.4 Proposed Model of Anxiety Disorder Exacerbation and Maintenance in Parents of Children with Co-Occurring Anxiety Disorders

While there is evidence of a reciprocal role for anxiety within parent-child dyads, the mechanisms explaining how child anxiety disorders could impact upon the exacerbation and maintenance of an anxiety disorder in their parent is unclear. A potential mechanism hypothesised is that parental anxious cognitions, related to increased threat and reduced child competence expectations, drive anxiety-related parent emotions and behaviours such as modelling, transfer of threat information, and over-control (Creswell et al., 2011; Ginsburg & Schlossberg, 2002; Lester et al., 2009; Moore et al., 2004; Udy et al., 2014). Support for this hypothesis was partially indicated in a longitudinal study by Rubin et al. (1999). Results indicated that parental cognitions and expectations about their child being shy and vulnerable,

alone or in combination with beliefs that they themselves are incapable of managing their child's anxiety response, lead to parental condonement of child anxious avoidance and increased over-control (Rubin et al., 1999). Additionally, in a study by Creswell et al. (2013) parents of children with co-occurring anxiety experienced increased difficulty tolerating their child's negative emotions, which resulted in increased anxious parenting responses such as over-control and anxiety modelling (Creswell et al., 2013). While additional research investigating the link between parent anxious cognitions, parenting behaviours, and psychopathology is required, cognitive and behavioural theories of anxiety disorder development and maintenance allow for the generation of hypotheses.

Cognitive theories suggest that the key proximal process determining an individual's behavioural or emotional response to a given stimuli is the cognitive appraisal (Ehring, 2014). Accordingly, cognitive theories propose that a core component of anxiety disorder development is a tendency to appraise events as threatening, and that these interpretational biases maintain anxiety through inducing anxious mood and eliciting avoidance behaviour (Beck & Clark, 1997). Three distinct categories of appraisals have been defined in the literature, including primary appraisal, secondary appraisal, and reappraisals. Primary appraisals are an immediate appraisal of a situation as threatening based on the probability of personal harm, perceived severity, or cost of harm (Smith & Lazarus, 1993). Secondary appraisals refer to the individual's appraisal of how well they can cope with a threat (Smith & Lazarus, 1993), while reappraisal is an update of primary or secondary appraisals as the situation unfolds or new information is received (Ehring, 2014; Moors & Scherer, 2013). Further, appraisals extend beyond external stimuli and to appraisals of symptoms, including thoughts, feelings and physiological sensations (Ehring, 2014).

Behavioural theories related to fear learning and acquisition in anxiety disorders encompass several learning theory models based on classical and operant conditioning. Early

classical conditioning theory (e.g. Pavlov, 1927; Watson & Rayner, 1920) centred on the premise that repeated exposure to an innocuous conditioned stimulus (e.g. a car) paired with a fear inducing unconditioned stimulus (e.g. an accident) will result in a conditioned response (e.g. fear). While the original premise is a fitting explanation for the expression of fear in response to a cue and an aversive event, it does not account for individual differences in fear acquisition (Beckers et al., 2013; Mineka & Oehlberg, 2008). Consequently, modern day learning theory emphasizes that in addition to direct learning, learning can also occur vicariously through social observation and verbal communication about threat based information (Boddez et al., 2014; Mineka & Oehlberg, 2008). Importantly, the resulting fear learning from vicarious information often cannot be distinguished from directly learned fears (Dymond et al., 2012).

Irrespective of the learning mechanism, fear usually results in the avoidance and/or escape from the fear-eliciting stimulus. In this scenario, the conditioned and unconditioned stimulus result in an avoidance response. This process is underpinned by operant conditioning theory which draws on the paired associations of classical fear conditioning, but instead focusses on the consequences of actions which influence behaviour (Skinner, 1938). Here, avoidance is learned through negative reinforcement, where the aversive stimulus is removed, and this is perceived as rewarding to the individual as it stops or prevents the occurrence of the unconditioned stimulus (Boddez et al., 2014; Dymond et al., 2012). This approach has been coined the two-factor theory, which posits that avoidance is learned through classical conditioning and operant conditioning theory (Mowrer, 1947). Classical conditioning explains the first factor, where the pairing of the conditioned stimulus and unconditioned stimulus result in the fearful conditioned response. The second factor is explained by operant conditioning, where the avoidance behaviour is performed in the presence of the conditioned stimulus, and is negatively reinforced through an immediate

reduction in expressed fear. Thus, the avoidance behaviour serves to maintain anxiety as the perceived safety from the anxiety trigger is attributed to the avoidance behaviour, rather than the benign nature of the trigger (Norton & Paulus, 2017).

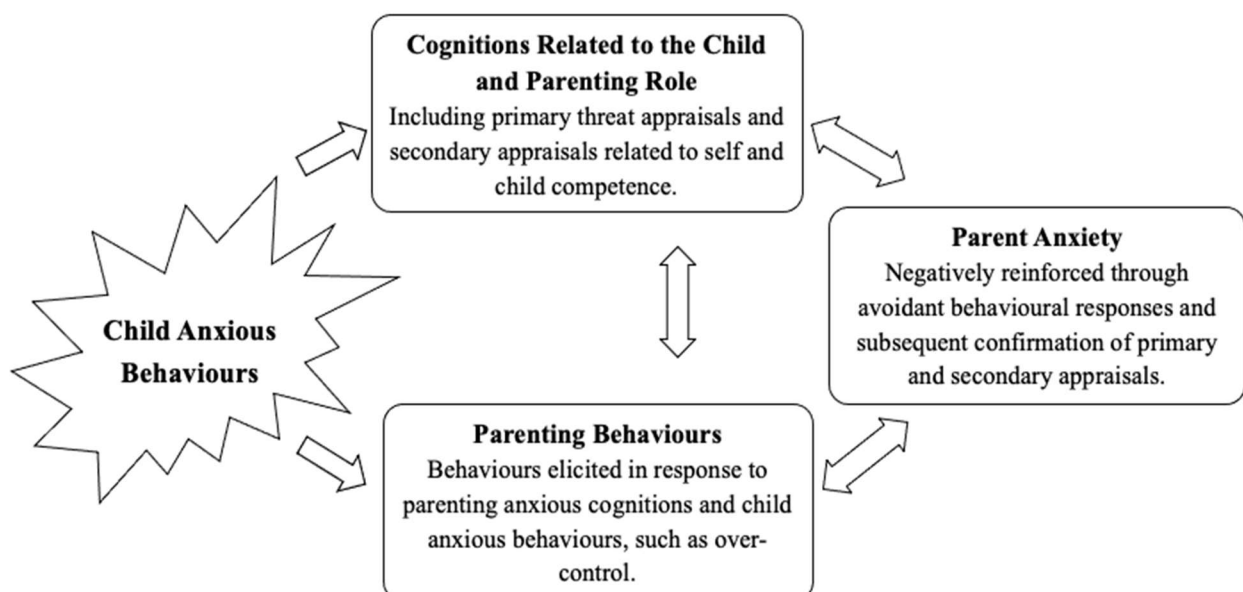
Therefore, given the evidence suggesting that parents experience difficulty tolerating their child's anxious behaviours, and respond to anxiety in children with increased threat interpretation and subsequent anxious emotions and parenting behaviours (Creswell et al., 2013; Moore et al., 2004; Rubin et al., 1999; Udy et al., 2014), it is possible that parents engage in these behaviours as a type of learned avoidance maintained through negative reinforcement (Boddez et al., 2014; Dymond et al., 2012; Mowrer, 1947). When cognitive and behavioural theories are applied to the extant literature, a proposed model detailed in Figure 1, suggests possible contributions of child anxiety to the exacerbation and maintenance of anxiety disorders in parents. Evidence suggests that over time parents learn a fear response to their child reacting anxiously based on direct learning (e.g., personal humiliating experiences in past social situations), vicarious social observation (e.g., observation of their child behaving anxiously during social situations), and/or verbal threat communication (e.g., their child describing feelings of humiliation during social situations). These events are likely to be appraised as threatening, resulting in several primary (e.g., "If [child] doesn't respond to stranger, they'll think she's rude and that I'm a bad parent") and secondary (e.g., "My child won't know what to say, and I can't fix it") appraisals. Consequently, when the child behaves anxiously during a fear inducing situation, the parent responds to these primary and secondary threat appraisals with parenting behaviours such as over-control to reduce or eliminate the child's exposure to the anxiety provoking event and subsequent distress. Thus, with the aversive stimulus removed, the parents reduced or avoided anxious response is interpreted as rewarding, encouraging a similar strategy and response in the future. Over time, parents perceived safety is attributed to the over-controlling

avoidance behaviour rather than the innocuous stimuli, and this serves to maintain the parent's anxiety through reinforcement of threat-based appraisals and avoidance strategies when confronted with child anxiety in the future. Therefore, anxious parenting behaviours and cognitions arising in response to anxiety in the child are hypothesised to exacerbate and maintain anxiety disorders in parents. As such, these are considered important target areas of an intervention for parents of children with co-occurring anxiety disorders.

Through targeting the bidirectional factors hypothesised to contribute to and maintain anxiety disorders in parents, it is hoped that anxiety disorder severity in the parent will reduce, consequently improving treatment outcomes for this population. Further, through reducing parent anxiety disorder psychopathology and improving parent treatment outcomes, it is likely that outcomes will also be improved for their child, which has significant implications for reducing the intergenerational transmission of anxiety disorders. Therefore, the following Sections 1.5-6 review existing treatment for anxiety disorders in adults, before presenting a summary in 1.7 and discussion of the current study in Section 1.8.

Figure 1

Proposed Model Outlining the Impacts of Child Anxiety Disorder on the Exacerbation and Maintenance of Anxiety Disorders in Parents



Note: The reciprocal influence of anxiety disorders as proposed in this model relates to parents and primary school aged (6-12 year old) children. The proposed influence may differ in parent-child dyads of other developmental stages/ages.

1.5 Current Treatment of Anxiety Disorders: Cognitive Behavioural Therapy

In the treatment of anxiety disorders, CBT is recognised as the most efficacious and cost-effective strategy (Heuzenroeder et al., 2004; Hofmann et al., 2012) and is the recommended evidence-based psychotherapy for the treatment of anxiety disorders in adults (Andrews et al., 2018). Addressing the previously discussed cognitive and behavioural theories, CBT is based on the premise that emotional disorders are maintained by cognitive factors such as thoughts and beliefs, and conditioned avoidance responses, which can be modified using cognitive and behavioural techniques (Beck, 2011). Common techniques designed to target anxiety disorder symptomatology include psychoeducation, cognitive restructuring, exposure, and relaxation training (Barlow & Lehman, 1996; Beck, 2011), with cognitive restructuring and exposure therapy being the most widely researched techniques included in CBT for anxiety disorders (Deacon & Abramowitz, 2004; Kaczurkin & Foa, 2015). Cognitive restructuring involves targeting maladaptive thought processes through the identification of distorted thinking, and challenging thoughts through systematic questioning and examination of evidence (Andrews et al., 2018; Kaczurkin & Foa, 2015). Exposure therapy is a process of confronting a feared stimulus or response, with the aim of reducing avoidance and developing corrective information about the feared stimulus. Psychoeducation typically encompasses information about the development and maintenance of anxiety disorder symptomatology, and treatment rationale, while relaxation and breathing training is provided to manage the physiological arousal associated with anxiety disorders (Andrews et al., 2018; Kaczurkin & Foa, 2015).

Evidence for the efficacy of CBT across the anxiety disorders has been supported by many randomised controlled trials (RCTs), and further demonstrated by various systematic reviews and meta-analyses. Several recent meta-analytic reviews comparing CBT with waitlist control (WLC), or treatment-as-usual (TAU), have demonstrated significant anxiety disorder symptom reduction in individuals with social anxiety disorder (Mayo-Wilson et al., 2014), panic disorder (Pompoli et al., 2016), generalised anxiety disorder (Cuijpers et al., 2014), as well as anxiety disorders more globally (Bandelow et al., 2015; Cuijpers et al., 2016; Norton & Price, 2007; Watts et al., 2015). However, criticisms of meta-analyses utilising WLC and TAU conditions include that WLC conditions do not control for the effects of client treatment expectations on outcomes, and TAU conditions are highly heterogeneous and ill-defined (Watts et al., 2015). Consequently, a recent meta-analysis by Carpenter et al. (2018) attempted to improve upon methodology by comparing CBT for anxiety disorders exclusively with placebo-controlled trials. Analysis included 41 studies which randomly assigned participants to either pill or psychological placebo. Psychological placebo included intervention which controlled for non-specific factors such as time with therapist but did not include any treatment elements considered efficacious for the target condition. Results indicated significant moderate effect sizes at post-treatment and follow-up for target disorder symptoms ($g = 0.56$), and small to moderate effects on other anxiety symptoms ($g = 0.38$), comorbid depression ($g = 0.31$) and quality of life ($g = 0.30$). While results suggest CBT is an efficacious intervention for anxiety disorders when compared to placebo, comparison of CBT to other psychotherapies can provide a more informative assessment of intervention effectiveness.

Results from meta-analyses investigating CBT outcomes with other forms of therapy have elucidated mixed results. A meta-analysis by Tolin (2010) found that CBT for anxiety was superior to other types of psychotherapies at post-treatment on primary disorder

symptom measures, in particular psychodynamic therapy. This superiority was equally or more evident at the 6-month and 1-year follow-up, indicating that the advantages of CBT were not time-limited (Tolin, 2010). Similar results were indicated in a later follow-up meta-analysis by Tolin (2014, 2015), which again found that CBT outcomes for primary anxiety disorder symptom measures were superior to other psychotherapies including present-centred, emotion-focused, and psychodynamic therapies. Additionally, results in both meta-analyses did not find any differences between CBT and other psychotherapies on secondary outcome measures which included wellbeing, quality of life, and other symptom measures for secondary comorbid disorders. Further, generalisability of results were criticised as the initial meta-analysis only included five studies comparing CBT for anxiety disorders with other psychotherapies (Tolin, 2010), while the second included twelve studies, but nine of these studies were focused on treatment for post-traumatic stress disorder (Tolin, 2014, 2015). Subsequently, a meta-analysis by Marcus et al. (2014) included twenty studies comparing CBT for anxiety with other forms of psychotherapy. Results indicated CBT was statistically superior to other psychotherapies on primary disorder symptom outcome measures at treatment termination, but not at follow-up. Again, when comparing results of secondary outcome measures, no differences were found between CBT and other forms of psychotherapy. Therefore, CBT appears to be statistically more effective than other psychotherapies at targeting primary anxiety disorder symptoms, but not necessarily more effective than other psychotherapies when considering more general clinical changes to functioning (Wampold et al., 2017).

Despite limitations to existing research, considerable evidence supporting the efficacy and effectiveness of CBT across the specific anxiety disorders has been demonstrated. Subsequently, CBT is currently considered the gold-standard treatment for anxiety disorders (Australian Psychological Society [APS], 2018; National Institute for Health and Care

Excellence [NICE], 2013). According to the NICE (2013) guidelines, CBT is the recommended treatment for generalised anxiety, social anxiety, and panic disorders. Suggested intervention formats include self-guided, therapist facilitated, individual and/or group treatment, with specific recommendations dependent upon the disorder type, severity, and duration. Additional endorsement for the use of CBT for anxiety disorders comes from the APS (2018), based on the presence of Level 1 evidence (the highest evidence level assigned to systematic reviews of high quality RCTs) reported for CBT across the specific anxiety disorders.

The traditional approach to the treatment of anxiety disorders is to treat the primary diagnosis, followed by the separate treatment of any remaining comorbid diagnoses (Norton & Hope, 2005). Subsequently, many of the evidence-based CBT protocols that exist for the treatment of anxiety disorders are diagnosis-specific, such as CBT for social anxiety disorder (Clark et al., 2003) and generalised anxiety disorder (Dugas et al., 2010). Based on the current recommendations for treatment of anxiety disorders by NICE (2013) and APS (2018), along with meta-analytic results discussed above, there is strong evidence demonstrating the usefulness and efficacy of diagnosis-specific approaches. However, there are several identified limitations to diagnosis-specific CBT protocols. Firstly, research has indicated significant comorbidity amongst the anxiety disorders, with rates reported as high as 56% (Brown, Campbell, et al., 2001; Gorman, 1996). Moreover, clinical and epidemiological research has indicated comorbidity rates between 40-80% amongst anxiety and depressive disorders (Brown, Campbell, et al., 2001; Kessler et al., 2005). Additionally, there are some limitations to the reliability and validity of distinct anxiety disorder classifications, including poor discrimination amongst disorders, and high rates of clinically significant symptoms that do not meet criteria for a specific disorder (Brown, Di Nardo, et al., 2001; McLaughlin et al., 2003; Regier et al., 2013). Further, given the vast number of diagnosis specific treatment

manuals available, difficulty in the implementation, dissemination, and training become significant obstacles for service settings to overcome (Barlow et al., 2017; Craske et al., 2011; Newby et al., 2015). Therefore, the traditional treatment of anxiety disorders with specific CBT protocols has been challenged by an updated transdiagnostic conceptualisation.

1.5.1 Transdiagnostic CBT for Anxiety Disorders

Although diagnosis specific treatment approaches vary, it is argued that they share the same underpinning core model and general approach (Hofmann et al., 2012). Transdiagnostic models of anxiety consider distinctions between specific anxiety diagnoses as existing mainly in differences across the eliciting stimuli and coping responses to the stimuli, rather than differences in the neurobiological, aetiological, cognitive, or behavioural features of the disorder (Norton & Paulus, 2017). That is, while observable differences in content may be present between the anxiety disorders, transdiagnostic interventions recognise that “the process of eliciting stimulus → catastrophic misinterpretation → sympathetic activation/emotional experience → escape/avoidance, holds consistent across each of the anxiety diagnoses” (Norton & Paulus, 2017, pp. 123). Hence, it is these common underlying maintaining processes that transdiagnostic CBT (tCBT) interventions aim to treat, rather than specific symptoms of a particular diagnosis (Barrera et al., 2014; McEvoy et al., 2009). Therefore, any person meeting diagnostic criteria for one or multiple anxiety disorders can be treated with a single transdiagnostic intervention targeting the core underlying psychopathology, overcoming the challenges faced by implementing diagnosis specific CBT interventions.

Another pragmatic reason for the implementation of tCBT interventions is the observation that diagnosis-specific CBT protocols share the same effective intervention components, such as graded exposure and cognitive restructuring (Barlow et al., 2004). Thus, the concordance amongst protocols suggest that the unification of intervention components

may increase efficiency of intervention delivery (Pearl & Norton, 2017). Therefore, tCBT interventions provide benefits to clinicians including improved dissemination of resources and training (Hollon et al., 2002), and a reduction in training burden and costs through the focus on one set of therapeutic principles rather than a diverse number of protocols (Barlow et al., 2004).

The efficacy of tCBT in adults has been demonstrated across a number of open trials, RCTs, critical reviews, and meta-analyses (Norton & Paulus, 2017). A recent systematic review and meta-analysis by Newby et al. (2015) evaluated clinician delivered online or face-to-face tCBT for anxiety disorders. A total of 50 open trials and RCTs with WLC, TAU, or other psychological or attentional control were included in the analysis. Results revealed that tCBT led to large and significant reductions in anxiety disorder severity and moderate improvements to quality of life at post treatment, with positive outcomes maintained at 3- and 6-months post treatment (Newby et al., 2015). Further, when tCBT was compared with the control conditions, large effects were observed between tCBT and WLC and attention controls on anxiety and quality of life measures, with a small effect found between tCBT and TAU (Newby et al., 2015). While reductions in primary anxiety symptoms and improvements in general quality of life measures were encouraging, the inclusion of less rigorously designed studies, and comparison with no treatment or ambiguous control indicate significant limitations to the generalisability of results.

More recently, a meta-analysis by Pearl and Norton (2017) compared anxiety disorder treatment effects of diagnosis-specific CBT and tCBT interventions. The meta-analysis compared outcomes from individual, group, and e-based interventions, and included RCTs and open trials with and without a control group. Sixty-seven studies were included, with most studies utilising diagnosis-specific CBT ($n = 57$), and the remainder using tCBT ($n = 14$). Findings indicated large effect sizes and overlapping confidence intervals for both

diagnosis-specific CBT and tCBT. Though the overall effect size of diagnosis-specific CBT and tCBT interventions were statistically different, authors suggested the overlap between confidence intervals indicated a lack of clinical significance. Importantly, the variability and range of effect sizes were comparable in either diagnosis-specific CBT and tCBT approaches, indicating treatments were likely equally efficacious in the treatment of anxiety disorders (Pearl & Norton, 2017). Though it is clear additional high-quality studies are required to further establish the efficacy of tCBT, evidence is mounting that tCBT is an effective evidence-based approach for the treatment of anxiety disorders.

While development of diagnosis-specific CBT and tCBT protocols have progressed, there remains a need to improve anxiety disorder remission rates for individuals treated with these modalities. Recent meta-analytic evidence indicates that the overall mean remission rates for adults with anxiety treated with CBT was 51%, suggesting that 49% of adults who receive CBT retain their anxiety disorder diagnosis post-treatment (Springer et al., 2018). Despite the demonstrated empirical support of CBT (e.g. Carpenter et al., 2018) and outperformance of other treatments (e.g. Marcus et al., 2014), this result indicates a significant scope for improvement of treatment outcomes exists. While a number of limitations have been identified, perhaps the most pertinent to parents of children with co-occurring anxiety is that wider systemic factors are typically not addressed during adult CBT treatment (Dummett, 2010). Given the theorised bidirectional influence of anxiety disorders within parent-child dyads, it is likely that broader systemic factors exacerbate or maintain anxiety disorders in parents. Additionally, while research indicating that the presence of a parent with an anxiety disorder can impact upon child anxiety CBT outcomes by as much as half (Bodden, Bögels, et al., 2008; Cobham et al., 1998; Cooper et al., 2008; Creswell et al., 2020; Hudson et al., 2014), no study to date has investigated the impact of child anxiety disorder on CBT treatment outcomes in adult parents with anxiety disorders. Therefore, the

absence of research in this area constitutes a significant gap in the literature that may provide some insights into the sub-optimal CBT treatment response rates in adults, and particularly for parents of children with co-occurring anxiety disorders. While there does not appear to be any investigation of interventions specific to anxious adults parenting an anxious child within the adult CBT literature, developmentally informed treatment targeting child anxiety disorders offers some hope.

1.6 Research Including Parents in Child CBT for Anxiety Disorders

Most prior research has typically involved parents as facilitators and co-facilitators of child anxiety disorder treatment (Forehand et al., 2013; Rapee et al., 2009; Stallard, 2002; Wei & Kendall, 2014), and has neglected to directly address anxiety disorders in parents (Breinholst et al., 2012). Parents in the facilitator and co-facilitator role typically aide the child in the transfer of skills from clinic to home, which can include prompting, monitoring and reviewing the child's use of therapy skills (Stallard, 2002). The facilitator role is generally limited to one to two sessions designed to provide parents with education to encourage their co-operation with treatment. Parents involved as co-facilitators generally have more involvement in the therapy sessions, which commonly provide parents with psychoeducation about child anxiety disorder development, and/or training for how to respond to their child's worries or anxious behaviours in adaptive ways. In either role, the child remains the focus of the intervention (Breinholst et al., 2012; Forehand et al., 2013; Stallard, 2002). Further, as previously suggested, neglecting to address anxiety in parents has negative consequences for the mental health and functioning of these parents, but can also contribute to the perpetuation of negative intergenerational consequences of anxiety disorders. Conversely, a third category involving parents as co-clients exists, where parents receive some level of intervention to manage their own anxiety (Kendall et al., 2010). Similar to facilitator and co-facilitator roles, the overall aim of including parents as co-clients is to

improve upon child anxiety disorder treatment outcomes. While the involvement of parents as co-clients occurs less frequently, three notable exceptions exist which include the treatment of anxiety in parents alongside child CBT for anxiety disorders.

The earliest study by Cobham et al. (1998) investigated whether the addition of a parent anxiety management program (PAM) to child-focused CBT conferred additional benefits to children with anxiety disorders, than child-focused CBT alone. Children were assigned to child anxiety-only or child and parent anxiety conditions, based on the presence or absence of parental anxiety determined by arbitrary cut-off on an anxiety symptom self-report measure. Children in each condition were then randomly assigned to either child-focused CBT, or child-focused CBT plus PAM. The PAM program consisted of four 60-minute sessions involving psychoeducation, contingency management, cognitive restructuring, and relaxation training. When examining differences between conditions, greater than 80% of children in the child anxiety-only condition achieved remission at post-treatment, and there were no significant differences in remission rates between children who received child-focused CBT and those who received child-focused CBT plus PAM. A significant difference was found for children in the child and parent anxiety condition, where 77% of children who received the child-focused CBT plus PAM were diagnosis free at post treatment, compared with only 39% of children in the child-focused CBT condition. Results indicated that for children of parents with anxiety disorders, the addition of PAM significantly improved treatment outcomes when compared with child-focused CBT. Over time this trend continued, however, was not maintained as a significant effect at 6- or 12-months post-treatment.

Although short-term study results indicated the adjunct PAM intervention was beneficial for improving treatment outcomes for children with an anxious parent, parent self-reported anxiety symptomology did not significantly reduce at post-treatment as a function of

the PAM intervention (Cobham et al., 1998). This result suggests that the brief PAM intervention provided to parents was inadequate for the treatment of anxiety disorders and may account for the dilution of PAM effects on child outcomes at follow-up. Notably, while exposure therapy is identified as a key component of effective treatment for anxiety disorders (Barlow, 2002; Kaczurkin & Foa, 2015; Norton & Price, 2007), exposure was not included in the PAM treatment offered to parents. Thus, the omission of exposure therapy may partly explain why the PAM was inadequate to treat anxiety disorder psychopathology. Additionally, the reliance on a self-report measure to determine presence of anxiety in parents and subsequent group allocation was problematic, as self-report measures tend to be less objective than clinical interviews (Bögels & Brechman-Toussaint, 2006).

An extension RCT of the Cobham et al. (1998) study was conducted by Hudson et al. (2014). The study utilised a similar procedure, however improved upon the methodology by testing five PAM sessions with a greater focus on parent anxiety reduction, included true participant randomisation, and used a clinician-rated assessment tool for diagnosis of anxiety disorder in the parent group. The PAM comprised of a bibliotherapy program supplemented with five 45-min therapist run group sessions which included psychoeducation, cognitive restructuring, exposure, assertiveness, problem solving, and time management training. Results indicated that the addition of PAM did not significantly improve outcomes for children when compared to the CBT only group at post-treatment or 6-month follow-up, even among children who had a parent with an anxiety disorder. Similarly, when comparing anxiety outcomes in parents who received PAM with parents who did not, the PAM intervention did not result in improved anxiety disorder diagnostic status or symptoms in parents at post-treatment or 6-month follow-up. Again, results indicated that the brief PAM provided to parents was inadequate for the treatment of anxiety psychopathology.

While the insignificant findings were disappointing, a promising addition to the PAM offered to parents in the Hudson et al. (2014) study was the inclusion of evidence-based exposure therapy directed at addressing parents fears. However, it is likely the dosage was insufficient due to the brief session time allocated for exposure tasks and the self-help format where parents were encouraged to complete their exposure tasks at home without therapist guidance (Kaczurkin & Foa, 2015; Tolin et al., 2007). Further, given the brevity of the five session PAM provided, the time allocated to other components not typically considered core to CBT for anxiety disorders in adults, including assertiveness and time management training, may have diluted the treatment effects (Breinholz et al., 2012; Kaczurkin & Foa, 2015; Norton & Price, 2007; Taboas et al., 2015).

The most recent clinical trial to investigate outcomes following the inclusion of an anxiety treatment in parents was conducted by Creswell et al. (2020). This RCT aimed to determine the extent to which treatment of anxiety disorders in parents, or parent-child interactions, enhanced the CBT treatment outcomes of children with anxiety disorders. Although the inclusion of the anxiety intervention for parents was aimed at improving child treatment outcomes, this RCT nonetheless presented the first and most comprehensive example of treatment dedicated to addressing anxiety disorders in parents in the literature so far. In this study, mother-child dyads with diagnosed anxiety disorders were randomly allocated to one of three conditions: CBT, mother-child interaction, or active control. All children involved in the study received eight sessions of child-focussed CBT. Mothers allocated to the CBT for anxiety disorders condition received eight sessions of tCBT delivered prior to their child's CBT, while mothers allocated to the mother-child interaction intervention received treatment targeting maternal autonomy granting cognitions and behaviours concurrently to their child's CBT. Mothers in the active control condition received education focused on the promotion of a healthy lifestyle while their children also

received CBT. Additionally, mothers in the active control and mother-child interaction conditions received non-directive counselling to counterbalance therapist contact across groups.

Study results indicated anxiety symptom reductions were achieved for children across treatment conditions; however, neither the CBT treatment for anxiety in mothers, nor the mother-child interaction intervention, significantly improved outcomes for children beyond child-CBT alone (Creswell et al., 2020). For mothers who received the mother-child interaction intervention, results showed a significant improvement in observed overprotection and estimations of the child's ability to cope. Further, primary anxiety disorder remission was initially superior for mothers who received CBT prior to their children. However, after children had received their CBT treatment, no significant differences in mothers' anxiety remission rates were found between groups, with all conditions showing recovery from anxiety disorders. These results support suggestions that effective treatment of child anxiety disorders can confer improvement of anxiety disorder symptoms in their parent. In fact, the recorded remission rates for anxiety disorders in parents of 39.4% in the active control condition, 52.2% in the CBT condition, and 57.8% in the mother-child interaction condition were not dissimilar to the meta-analytic mean remission rates reported for CBT treatment in adults with anxiety of 51% (Springer et al., 2018). Therefore, child anxiety disorder treatment appears to be an important factor in the improvement of anxiety disorder symptoms in parents, however room for the improvement of treatment outcomes in anxious adults parenting an anxious child remains.

While the inclusion of an evidence-based treatment for anxiety disorder in parents takes a positive direction, and improvements were found for all parents involved in treatment (Creswell et al., 2020), some additional limitations have been identified. Given that the presence of child anxiety can influence parents' anxiety psychopathology (Ahmadzadeh et

al., 2019; Settapani et al., 2013; Simon et al., 2011; Thurston et al., 2011), treating mothers eight weeks prior to children may not have been adequate to intervene in the unique contribution of bidirectional factors maintaining anxiety disorders within the dyad. Hence, the stepped approach may have been a missed opportunity to optimise treatment outcomes for parents. Additionally, authors acknowledged that the tCBT manual chosen to treat mothers had not been systematically evaluated, and this could possibly have contributed to the insignificant differences in anxiety remission between groups. Thus, an empirically validated CBT treatment delivered concurrently to a child CBT intervention could result in greater reduction of anxiety disorder symptoms in parents. Further, as the aim of the Creswell et al. (2020) study was to better understand whether intervention of anxiety in parents *or* parenting behaviours had a greater impact on improving child treatment outcomes, optimal treatment outcomes for parents and children with co-occurring anxiety disorders would likely include the intervention of both. Therefore, an intervention incorporating evidence-based treatment of anxiety disorders in adults, which also targets identified bidirectional factors of parenting behaviours and anxious cognitions related to the parenting role is indicated.

1.7 Summary

Anxiety disorders are highly prevalent in both adults and children, and the implications of these disorders are far reaching not only for the individual, but also for families and the broader community. Substantial evidence also indicates that anxiety disorders aggregate within families, suggesting intergenerational transmission of anxiety disorders between parents and children (Percy et al., 2016). While part of this transmission is related to biological risk factors such as genetics, personality and temperament, it is established that the majority of the interaction is attributable to environmental factors (Eley et al., 2015). It is also well established that parents play a unique role in the development and maintenance of anxiety disorders in children (e.g. Lawrence, Waite, et al., 2019; Yap & Jorm,

2015), however emerging bidirectional evidence indicates that childhood anxiety and the parenting role can contribute to the exacerbation and maintenance of anxiety disorders in parents (e.g. Hudson et al., 2009; Moore et al., 2004; Nelson et al., 2014). Additionally, while there is a dearth of research exploring how the identified bidirectional factors contribute to or maintain anxiety in parents of children with co-occurring anxiety disorders, it is hypothesised that anxious cognitions and parenting behavioural responses such as over-control, play a key role in this process. Therefore, a systemically informed intervention for adults which adequately treats anxiety disorders, while simultaneously addressing bidirectional parenting factors hypothesised to maintain anxiety disorders is indicated.

In the treatment of anxiety disorders in adults, CBT is considered the most efficacious intervention, and is therefore recommended as the gold standard treatment (Andrews et al., 2018; APS, 2018; NICE, 2013). While many diagnosis-specific CBT protocols exist, tCBT is an updated empirically supported intervention treating the underlying core pathology across the anxiety disorders without fitting the intervention to a specific diagnosis (Barrera et al., 2014; McEvoy et al., 2009; Norton & Paulus, 2017). However, only approximately half of adults with anxiety disorders who receive CBT achieve diagnostic remission (Springer et al., 2018), suggesting room for improvement of CBT treatment outcomes. Additionally, despite the significant bidirectional influence of anxiety disorders within the dyad, CBT interventions typically overlook the systemic factors that could contribute to anxiety disorders in adults (Dummett, 2010), or mainly involve parents as co-facilitators of child anxiety treatment (Forehand et al., 2013; Rapee et al., 2009; Wei & Kendall, 2014). Consequently, these approaches fail to adequately address anxiety disorders in parents (Breinholst et al., 2012; Forehand et al., 2013).

While it is promising that three studies to date have attempted to address parental anxiety within the context of improving child anxiety treatment outcomes, the interventions

provided to parent participants were either inadequate to treat anxiety disorder symptomatology (Cobham et al., 1998; Hudson et al., 2014), or achieved outcomes equivalent to existing adult CBT treatment (Creswell et al., 2020). Additionally, the interventions provided to parents in these studies did not target the factors hypothesised to exacerbate and maintain anxiety disorders in parents, including anxiety-related parenting behaviours and cognitions. Further, as demonstrated in the Creswell et al. (2020) study, and by bidirectional evidence (Lavallee et al., 2019; Settapani et al., 2013; Simon et al., 2011), it appears that the treatment of anxiety disorders in children can also confer reductions to anxiety disorder symptomatology in their parent. Hence, the concurrent treatment of parents and children with co-occurring anxiety disorders may contribute to improved CBT treatment outcomes in parents. Therefore, a method of treating an adult's anxiety disorder in the context of being a parent, along with addressing anxiety elicited from parenting an anxious child is clearly needed.

1.8 The Current Study and Thesis Aims

The current research has been considered in line with the Medical Research Council's (MRC) guidance on the development and implementation of complex interventions (Craig et al., 2008). The MRC propose a framework which describes the process of development through to implementation of complex interventions in a series of phases, although it is acknowledged that in practice this process may not necessarily follow a linear or even cyclical sequence. The phases outline best practice beginning with the systematic development of intervention utilising best available evidence and relevant theory, followed by staged testing beginning with piloting, before moving onto exploratory and definitive evaluation, ending with the wide dissemination of findings and further research to assist and monitor the implementation process (Craig et al., 2008). The MRC's flexible framework has been used successfully to develop interventions across disciplines (Bobrow et al., 2018; Craig

et al., 2008). Therefore, the present research represents the initial two phases of the MRC framework related to intervention development and initial piloting.

To address the first phase, this thesis includes the development of an enhanced CBT intervention for parents of children with co-occurring anxiety disorders. Anxiety disorder symptomatology in anxious adults parenting an anxious child will be addressed through the provision of an existing evidence based tCBT manual. However, traditional CBT intervention approaches will be enhanced through the addition of systemically-informed adaptations including (1) the concurrent treatment of child anxiety disorder via a parallel child-focused manual, and (2) addition of content to address the identified bidirectional factors hypothesised to exacerbate and maintain anxiety disorders in parents, including anxiety-related parenting behaviours and cognitions. A tCBT manual was chosen to facilitate a concurrent treatment format for parents and their children regardless of their specific anxiety disorder diagnoses. Additionally, the provision of a tCBT manual for both dyad members ensures the alignment of treatment approach and consistency of session content. Given the considerable scope of developing two separate but concurrent interventions for the treatment of anxiety disorders in parent-child dyads, the present thesis encompasses the development of the enhanced CBT intervention parent treatment manual, and the associated initial outcomes. Details pertaining to the development of the child manual and outcomes are included in a separate, but related thesis.

The enhanced intervention parent treatment manual will be an adapted version of the existing Norton (2012a) group tCBT for anxiety disorders treatment manual (hereby referred to as the tCBT manual). While several transdiagnostic treatments have been trialled and evaluated, the tCBT manual is based on extensive theoretical and empirical evidence (Newby et al., 2015; Norton & Paulus, 2017; Roberge et al., 2020). Efficacy for the tCBT manual has been established by a number of open trials and RCTs for principal anxiety disorders

(Norton, 2008, 2012b; Norton & Barrera, 2012; Norton & Hope, 2005), as well as demonstrated efficacy for the treatment of comorbid disorders including depression (Norton et al., 2013; Norton et al., 2004; Talkovsky et al., 2017). Additionally, support for the use of the tCBT manual in routine care was found in a pragmatic superiority RCT conducted across three community-based care settings (Roberge et al., 2020). Study outcomes demonstrated superior improvement in post-treatment anxiety symptoms for participants who received TAU in combination with tCBT, when compared to participants who received TAU alone (Roberge et al., 2020). Further, preliminary empirical evidence has supported recent updates to the tCBT manual including adaptation for primary anxiety and depressive disorders (Harris & Norton, 2019), translation to an individual treatment format (Pearl & Norton, 2020), and individual treatment with the addition of motivational interviewing techniques (Marker et al., 2020).

The second phase details the initial piloting of the enhanced intervention parent treatment manual. Evaluations of interventions are often undermined by problems related to feasibility and acceptability which could have been predicted through comprehensive piloting (Craig et al., 2013). Accordingly, pilot studies play a key role in the research process as they allow for investigations of intervention feasibility and acceptability, which can determine whether to proceed with a larger trial to determine treatment efficacy and intervention validation in the future (Eldridge et al., 2016; Leon et al., 2011). Results obtained from pilot trials are also frequently used to inform the refinement of new interventions and other study procedures (Craig et al., 2008; Leon et al., 2011). However, given pilot trials function as an early-stage intervention development phase to improve the probability of success in a larger future trial, they are not used for hypothesis testing (Leon et al., 2011). Additionally, mixed-methods designs are increasingly utilised in the piloting of complex interventions (O’Cathain et al., 2015), with qualitative data considered of particular value to this stage of research as it

allows for a richer understanding of a recipients perceptions of an intervention than quantitative methods alone (Moore et al., 2015). Thus, the present research incorporates a mixed-methods approach including quantitative feasibility and acceptability outcome data, along with qualitative interviews to determine parents' acceptability of the enhanced intervention.

In accordance with the CONSORT extension for pilot and feasibility trials (Eldridge et al., 2016), assessments of trial feasibility are conducted to better understand whether a future trial can be done, should be done, and how. To address this, feasibility can include investigations of participant engagement, obtain estimates of parameters required for sample size calculations, and establish preliminary evidence for the potential efficacy of the intervention (Bell et al., 2018). While participant engagement is a broad construct, it has frequently been operationalised to include the domains of attendance and adherence (Becker et al., 2015; Chacko et al., 2016). Attendance captures the rate of enrolment among those eligible to participate, and the degree to which enrolled participants attend treatment sessions and complete treatment. Adherence describes the degree to which participants comply with treatment, such as the utilisation of skills between sessions or in-session participation. Additionally, calculation of the pilot trial effect size is commonly used to estimate the sample size of a larger trial (Bell et al., 2018). While the small sample size of a pilot trial can mean uncertainty in the effect size estimate, it can nonetheless provide important guidance for determining a realistic sample size target for a larger clinical trial. Further, investigations of initial intervention response can provide some evidence about whether the intervention may be effective, and if differences could be detected in a future trial.

Consumer acceptability is also considered an essential component in the development of intervention, as well as for future intervention implementation and effectiveness (Byrne, 2019; Sekhon et al., 2017). When an intervention is considered acceptable, recipients are

more likely to adhere to treatment and obtain benefit from improved clinical outcomes (Sekhon et al., 2017). From a participant perspective, the context, content, and quality of care received may all impact upon intervention acceptability. Thus, investigations of acceptability frequently include self-report measures collected following treatment exploring participants' assessment of the intervention. However, in the context of healthcare interventions, the theoretical framework of acceptability (TFA; Sekhon et al., 2017) offers a more nuanced approach. The TFA defines acceptability as a multi-faceted construct that reflects the client's perception of intervention appropriateness, based on anticipated or experiential responses to the intervention. Seven component constructs are outlined to guide assessment of acceptability, including affective attitude, perceived effectiveness, ethicality, intervention coherence, burden, self-efficacy, and opportunity-costs. Further, the use of qualitative interviews during investigations of intervention acceptability allows for collection of diverse perspectives related to retrospective and prospective acceptability (O'Cathain et al., 2015; Sekhon et al., 2017). In addition to acceptability related to intervention appropriateness based on participant experiences, investigations of acceptability can also establish the extent which a new intervention and its components meet the needs of the target population (Ayala & Elder, 2011).

Therefore, with these principles in mind, the current study focusses on two main research aims:

- 1) Develop the enhanced CBT intervention treatment manual for parents of children with co-occurring anxiety disorders. The intervention aims to address anxiety disorders in parents, through adequately:
 - a. Treating anxiety disorder symptomatology in adults; and

- b. Intervening with the identified factors that exacerbate or maintain anxiety disorders in parents, including parenting behaviours of anxiety modelling and over-control, and anxious cognitions related to the parenting role.
- 2) Conduct a mixed methods open-label pilot study to assess the feasibility and acceptability of the enhanced CBT intervention. Feasibility of the enhanced intervention will be determined through investigation of:
 - a. percentages of participant recruitment rate, completion rate and adherence to study requirements; and
 - b. effect size calculations to estimate the sample size of a future definitive RCT; and
 - c. estimates of variability in clinician-report and self-report outcome measures to determine preliminary indications of participants' intervention response.

Acceptability of the enhanced intervention will be assessed through exploration of:

- d. participant self-report ratings of treatment alliance, intervention satisfaction, and helpfulness; and
- e. qualitative interviews to better understand:
 - i. how the enhanced intervention is received, would be received, and how it could be improved; and
 - ii. parents' experiences of the intervention components, and if these components could modify anxiety-maintaining parenting cognitions and behaviours; and
 - iii. bidirectional factors that contribute to anxiety disorder maintenance in parent-child dyads.

Chapter 2

Extended Methodology: The Enhanced CBT Intervention Parent Treatment Manual

Chapter 2 – Extended Methodology: The Enhanced CBT Intervention Parent Treatment Manual

2.1 Preamble

The following chapter presents the first of two extended methodology chapters. The purpose of the present chapter is to address the initial thesis Aim 1 related to the development of the parent treatment manual used to deliver the enhanced intervention to parents of children with co-occurring anxiety disorders. The second subsequent methodology chapter (presented in Chapter 3) will detail the research design and methodology chosen to address thesis Aim 2 related to conducting the mixed-methods open-label pilot study feasibility and acceptability investigations.

Section 2.2 of the present chapter opens with a brief overview of the original Norton (2012a) tCBT manual session structure and contents, in order to provide sufficient context for the adaptations included in the parent treatment manual. Following this, Section 2.3 outlines the background to the *Development* stage of the parent manual within the context of the MRC framework for the Development and Evaluation of Complex Interventions (Craig et al., 2008). Subsequently, the programme theory underpinning the enhanced CBT intervention is described in Section 2.4, and sets the stage for Section 2.5 which describes the design and refinement of the parent treatment manual, including a link to access the manual in full. Specifically, Sub-Section 2.5.1 details the session structure and contents of the enhanced CBT parent treatment manual before demonstrating the specific adaptations and modifications within Sub-section 2.5.2. Sub-sections 2.5.2.1-4 also include excerpts and examples from the parent treatment manual in order to highlight the adaptations made to address the programme theory and overall aims of the enhanced intervention.

2.2 The Norton Group tCBT for Anxiety Disorders Treatment Manual

The Norton (2012a) tCBT manual consists of 12-weekly group sessions approximately two hours in duration, with treatment delivered by two therapists. Each treatment session was designed to be active, where components and skills are learned and practiced in-session. ‘Homework’ tasks are also assigned to clients so that they can continue to practice and apply skills learned in-session to real-world circumstances. In general, sessions include a review of between-session homework tasks, in-session skill building such as cognitive restructuring or exposure facilitated by the clinician, and then assigning further homework. In-session and homework activities are also facilitated using worksheet forms. For example, cognitive restructuring worksheets include space and prompts for the identification of automatic thoughts and underlying cognitive biases, challenging questions and responses, and a rational response to the initial automatic thought. Further, the tCBT intervention is fully manualised and includes session agendas, instructions and rationale for clinicians, scripted text, and suggestions for developing graded exposure tasks based on the client’s exposure hierarchy. Despite the manualized nature of intervention delivery, the session contents are individualised through a focus on the client’s specific anxiety stimuli and exposure hierarchy. The overall structure of the tCBT manual is presented in Table 1.

Table 1

Overview of the Norton (2012) tCBT Manual Structure

Session	Topic
0	Diagnostic Assessment Feedback
1	Psychoeducation
2-3	Psychoeducation & Cognitive Restructuring
4-9	Graded Exposure
10-11	Schema-Based Cognitive Restructuring

2.3 Background to the Development of the Enhanced Intervention Parent Treatment Manual

According to the MRC guidance on the Development and Evaluation of Complex Interventions, the development phase occurs between the idea for an intervention and the formal pilot testing conducted during the second phase (Craig et al., 2008; Hoddinott, 2015). A criticism of the initial MRC framework was that the development phase was only briefly outlined, hence O'Cathain et al. (2019) developed a specific framework for the intervention development phase. The authors proposed a number of key principles of intervention development, specifically that the process is “dynamic, iterative, creative, open to change and forward looking to future evaluation and implementation” (O'Cathain et al., 2019, p. 2). Similar to the original MRC guidance (Craig et al., 2008), the additional guidance and framework for the intervention development phase stipulates a flexible approach (O'Cathain et al., 2019). Here, intervention developers consider a number of key actions, then choose and apply these key actions dynamically to address their intervention context (O'Cathain et al., 2019).

Four key actions were identified as relevant to the development of the enhanced CBT intervention for parents, including reviewing published research evidence, drawing from existing theories, articulating programme theory, and designing and refining the intervention (O'Cathain et al., 2019). The first two points have been addressed in Chapter 1 of this thesis encompassing the literature review. Therefore, the following sections of the methodology chapter will detail the remaining two key actions, related to the articulation of programme theory and the design and refinement of the intervention.

2.4 The Enhanced CBT Intervention Programme Theory

In the development of complex interventions, programme theory describes how an intervention is intended to work, including the causal pathways hypothesised between intervention content and expected outcomes (O'Cathain et al., 2019). The enhanced intervention parent treatment manual is an adapted version of the Norton (2012a) tCBT manual, which has demonstrated efficacy for the reduction of anxiety disorder symptomatology in adults. Therefore, this section will describe the programme theory underpinning the adaptations and enhancements that were incorporated to tailor the parent manual to the target population. As it is hypothesised that parent anxiety disorders are exacerbated and maintained by increased anxious cognitions and behaviours elicited in response to anxiety in their child, the following adaptations were included in the parent treatment manual: (1) a novel joint-observational exposure task; (2) modified cognitive restructuring tasks and psychoeducation addressing anxious cognitions related to the child and/or parenting role; and (3) the addition of psychoeducation on the bidirectional influences of anxiety modelling and over-controlling parenting behaviours. As the overall enhanced CBT intervention was designed to be concurrently delivered to parent-child dyads with co-occurring anxiety disorders via separate but parallel treatment manuals, it is important to note manual content was adapted specifically for parents of primary school aged children 6-12 years old.

2.4.1 Novel Joint-Observational Exposure Task

The novel joint-observational exposure tasks are considered a key component of the enhanced intervention, and to the best of the authors knowledge, do not appear to have been utilised as a component of CBT in the past. During sessions utilising joint-observational exposures, dyad members take turns acting as silent observers of each-others' graded exposure task. That is, while the parent completes an individual graded exposure task, their

child observes, and the roles are then reversed. The joint-observational tasks are theoretically informed by Bandura's social learning theory (1977, 1986), and aimed to promote adaptive parent modelling and reduce parent's anxious cognitions related to competence via observation of the child's exposure task. Through observing their child face fears, parents can view their child interacting with an aversive stimulus, without performing negatively reinforced avoidance responses such as over-controlling parenting behaviours. Instead, parents are able to view their child utilising adaptive strategies to manage their anxiety and demonstrate successful coping during an anxiety provoking task. This information is hypothesised to challenge the parent's past fear learning through updated corrective information about their child's anxiety coping, subsequently reducing anxious primary and secondary appraisals about child- and self-competence (Beck & Clark, 1997; Kaczurkin & Foa, 2015; Mowrer, 1947; Norton & Paulus, 2017). Further, through modification of these anxious cognitions, it is expected that ensuing anxiety-related parenting behaviours enacted in response will also reduce (Creswell et al., 2013; Moore et al., 2004; Rubin et al., 1999; Udy et al., 2014).

2.4.2 Modified Cognitive Restructuring Tasks and Psychoeducation

Joint-observational exposure tasks are supported by the tailoring of cognitive restructuring content and psychoeducation to further address anxious cognitions related to the child and/or the parenting role. Updated psychoeducation about anxious parenting cognitions and their relationship with anxiety-related parenting behaviours is expected to help parents become aware of anxiety maintenance factors, but also help to provide a rationale for joint-observational exposures and scaffold parent learning through observation. Additionally, cognitive restructuring content was tailored to include pre-observational exposure cognitive restructuring and post-observational exposure reviews. Prior to observing their child, parents will complete a cognitive restructuring task to identify and systematically challenge

cognitions related to the parenting role, including cognitions related to their own and their child's expected coping ability. Following the joint-observational exposure tasks, parents also complete post-exposure reviews to identify when they and their child successfully demonstrated adaptive coping behaviours, and to reflect on any new evidence which may challenge prior anxious appraisals. Therefore, as it is hypothesised that parents engage in avoidance behaviours in response to anxious cognitions elicited by anxiety in their child (Creswell et al., 2011; Lester et al., 2009; Moore et al., 2004; Rubin et al., 1999; Udy et al., 2014), it is anticipated that parents' engagement with the tailored cognitive restructuring content will contribute to modified anxious cognitions related to the parenting role, subsequently leading to reductions in underlying anxious parenting behaviours.

2.4.3 Psychoeducation on Anxiety Modelling and Over-controlling Parenting Behaviours

In addition to the joint-observational exposure tasks, supplementary psychoeducation on the bidirectional influences of anxiety modelling and over-controlling parenting behaviours are included in the parent manual. Psychoeducation on over-control and anxiety modelling were selected for the parent manual as these parenting behaviours have the greatest empirical basis for their contribution to child anxiety disorder development and maintenance (McLeod, Wood, et al., 2007; Pinquart, 2017; Yap & Jorm, 2015), but are also the most frequently identified parenting behaviours elicited in response to child anxiety disorders (Creswell et al., 2013; Hudson et al., 2008; Hudson et al., 2009; Moore et al., 2004; Rubin et al., 1999). Thus, anxiety modelling and over-control were hypothesised to be key parenting behaviours implicated in the exacerbation and maintenance of anxiety disorders in parents. Further, psychoeducation delivered during CBT aims to provide the client with knowledge about their disorder to empower and motivate effective coping (Hedman-Lagerlöf & Axelsson, 2019). Therefore, psychoeducation on anxiety modelling and over-control was expected to assist parents in understanding the bidirectional factors maintaining anxiety

disorders in parent child-dyads, but also to normalise the experience of anxiety related to the parenting role. Further, it is anticipated that greater understanding of bidirectional influences related to parenting behaviours would also support the rationale for, and parent participation in, the joint-observational exposure tasks.

2.5 The Design and Refinement of the Enhanced Intervention Parent Treatment Manual.

This stage of intervention development included the generation of ideas about intervention content, format, and delivery, leading to the development of an initial version of the parent treatment manual, and the refinement and optimisation of the intervention through a series of iterations. Subsequently, the following Sub-section 2.5.1 describes the enhanced intervention parent treatment manual contents and structure, before detailing the manual adaptations in Sub-Section 2.5.2.

2.5.1 The Enhanced Intervention Parent Treatment Manual

During the design and refinement process, only essential modifications were made to ensure that the parent treatment manual would remain as true to the original tCBT manual as possible. Accordingly, adaptations to the tCBT manual were made in consultation with the original author, Professor Peter J. Norton. The format of the original tCBT manual was largely maintained, where the parent treatment manual was fully manualised, followed a session structure of reviewing homework tasks, in-session skill building, the assignment of homework, and the utilisation of in-session and homework forms.

Given that the enhanced intervention was designed to be delivered to parent-child dyads concurrently, the original tCBT manual structure and components were reviewed. During this review process, the schema-based restructuring component was considered developmentally inappropriate for child dyad members aged 6-12 years old, and a decision was made to remove this content from the child treatment manual. Subsequently, to bring the

parent treatment manual and session structure in line with the child treatment manual, the schema-based restructuring component was also removed, reducing the total number of sessions from 12 to 10. Therefore, a session-by-session overview of the main structure and contents of the parent treatment manual is presented in Table 2.

Table 2

Session-by-Session Overview of the Enhanced CBT Intervention Parent Treatment Manual Structure and Contents

Session	Contents
Session 0 – Feedback	<i>Parent and child session:</i> Discussion and feedback of diagnostic assessment results and case-formulation are presented to the parent-child dyad. Child assessment results are presented with the parent and child present, while parent assessment results are delivered with only the parent present. The information generated from the diagnostic interview provides a snapshot of the parent's presenting problems and provides context within which the anxiety disorder is occurring. Development of the rank-ordered exposure hierarchy is completed with the parent.
Session 1 – Psychoeducation	<i>Parent only session:</i> Education about the causes of anxiety and anxiety disorders to help correct any misconceptions about why the parent and their child are experiencing an anxiety disorder(s). Psychoeducation provided also creates shared goals and terminology, as well as normalise the client's experience of anxiety. Additionally, psychoeducation about the unique bidirectional factors which can maintain anxiety within a parent-child dyad are introduced, along with a specific explanation of the influence of anxiety modelling,

	<p>highlighted with a case vignette. Further, information about the specific treatment elements, and rationale for how the treatment elements address the parent's, and where relevant the child's, anxiety disorder(s) are provided.</p>
<p>Sessions 2-3 - Psychoeducation & Cognitive Restructuring</p>	<p><i>Parent only sessions:</i> Further psychoeducation about anxiety disorder maintenance is provided during Session 2, along with specific bidirectional psychoeducation about over-controlling parenting behaviours, highlighted with a case vignette. Parents also learn to address thoughts and perceptions underlying their anxiety disorder through the utilisation of cognitive restructuring techniques, including identification of anxious cognitions related to the parenting role. Parents are encouraged to generate and evaluate alternative outcomes to their feared position using disputing questions. The cognitive restructuring techniques are introduced and learned, and are then actively used throughout the graduated joint-observational and individual exposure tasks.</p>
<p>Sessions 4-6 – Joint- Observational Exposures</p>	<p><i>Parent and child sessions:</i> Joint-observational exposures differ to traditional graded exposure, as they involve the parent-child dyad acting as silent observers of each other's individual exposure tasks. Parents gradually confront fear provoking stimuli in-session, modelling adaptive anxiety approach and coping to their observing child. Parents then act as an observer of their child's exposure task, viewing their child demonstrate adaptive anxiety management and successful coping. Exposure tasks are graded, starting with easier and building up to more difficult fears, as previously identified in the</p>

	rank-ordered hierarchy. Cognitive restructuring is practiced immediately before exposure, and a post-exposure review is conducted following the exposure, with exposure content used to evaluate the validity of catastrophic fears, including cognitions related to the parenting role.
Sessions 7-9 - Individual Exposures	<i>Parent only sessions:</i> Continuation of exposure activities, however parents instead confront fear-provoking stimuli individually in-session without child observation. Individual exposure sessions provide the parent an opportunity to practice exposure tasks with content that may not have been appropriate during observational exposures (e.g., anxiety-based fears related to a hypothetical terminal illness). Thought challenging is practiced immediately before exposure, and a post-exposure review is conducted following the exposure, with exposure content used to evaluate the validity of catastrophic fears.
Session 10 - Termination & Relapse Prevention	<i>Parent and child session:</i> Session devoted to dealing with potential termination issues and focuses on developing post-treatment plans including steps to continue addressing difficulties related to anxiety and strategies to prevent and respond to relapse. Session ends with a celebration of treatment completion, with both the parent and child present.

2.5.2 The Enhanced Intervention Parent Treatment Manual Adaptations

The aims of the enhanced CBT intervention parent manual were to treat anxiety disorder symptomatology in adults, while simultaneously intervening with the identified

parenting factors hypothesised to exacerbate and maintain anxiety in parents. Therefore, adaptations made to the parent treatment manual to deliver upon these aims are demonstrated in the following Sub-sections 2.5.2.1-4. First, general adaptations made to deliver the intervention content to parents are detailed, including adapting content from a group to individual treatment format, inclusion of session summary forms, and tailoring existing psychoeducation to parents. Next, the addition of psychoeducation on the bidirectional impacts of parental over-control and modelling of anxiety are described, followed by adaptation of existing content to address anxious cognitions related to the parenting role. Finally, adaptations made to conduct joint-observational exposure tasks are presented, and include the modification of pre-exposure cognitive restructuring forms, and the development of a post-observational exposure review form.

The adaptations undertaken are presented generally across the four sub-sections, rather than as session-by-session adaptations. The information is presented this way as many of the adaptations and modifications occur across multiple intervention sessions, thus, this format allowed for discussion of the changes across sessions in the most parsimonious way with minimal repetition. Further, examples of intervention worksheets and excerpts of scripted and explanatory text have been included to demonstrate the content adaptations made for the parent treatment manual. For additional information about session content and worksheets, the entire parent treatment manual (<https://doi.org/10.26180/16781449>), and the accompanying concurrent child treatment manual (<https://doi.org/10.26180/15058317>), can be viewed online.

2.5.2.1 General Adaptations Made to Deliver the Intervention Content to Parents. Several adaptations were made to the parent treatment manual to ensure the intervention was deliverable to parents, including modifications from group to an individual treatment format, inclusion of session summary forms, and tailoring existing psychoeducation

examples for parents. The first adaptation made for the parent treatment manual was the adaptation from group to individual treatment. This modification was made as the concurrent treatment delivery and novel observational exposures were not able to be feasibly conducted within a group format. Subsequently, all references to the group or more than one client were reworded to be appropriate for delivery to an individual client. Additionally, all group-based activities, such as facilitated introductions between group participants, were removed. Further, the session length was reduced from 120-minute group sessions to 60-minute individual sessions. While the removal of group-based activities resulted in a shorter session length, some passages of therapist scripted text were refined in Sessions 1 to 3 to ensure sessions could be completed within 60-minutes. The changes made to deliver the parent treatment manual individually were made in line with adaptations applied by Pearl and Norton (2020) during their evaluation of an individual version of the group tCBT manual. Results indicated that when the adapted individual version was compared with anxiety disorder symptom reduction in past open trials utilising the group tCBT manual (Norton, 2008), the adapted individual format produced similar pre- to post-treatment effect sizes (Pearl & Norton, 2020). Therefore, the adaptations from group to individual treatment applied to the parent treatment manual are not expected to impact upon subsequent outcomes of the enhanced CBT intervention for parents.

Additionally, to assist parents with retainment of session content and implementation of learned skills, session summaries were provided following each main component of the intervention. Stand-alone session summaries were written for Sessions 1 and 2 encompassing psychoeducation, Session 3 covering the cognitive restructuring skill, and Session 10 detailing information on relapse prevention. A single session summary form was generated for Sessions 4 to 9 which encompassed both the joint-observational exposures and individual exposure sessions. Further, to acknowledge the systemic and intergenerational influences of

anxiety disorders, existing psychoeducation was tailored to parent participants through the inclusion of population specific examples, and modification of treatment rationale passages to acknowledge the concurrent nature of the intervention. An excerpt from the parent manual is presented below demonstrating a population specific example.

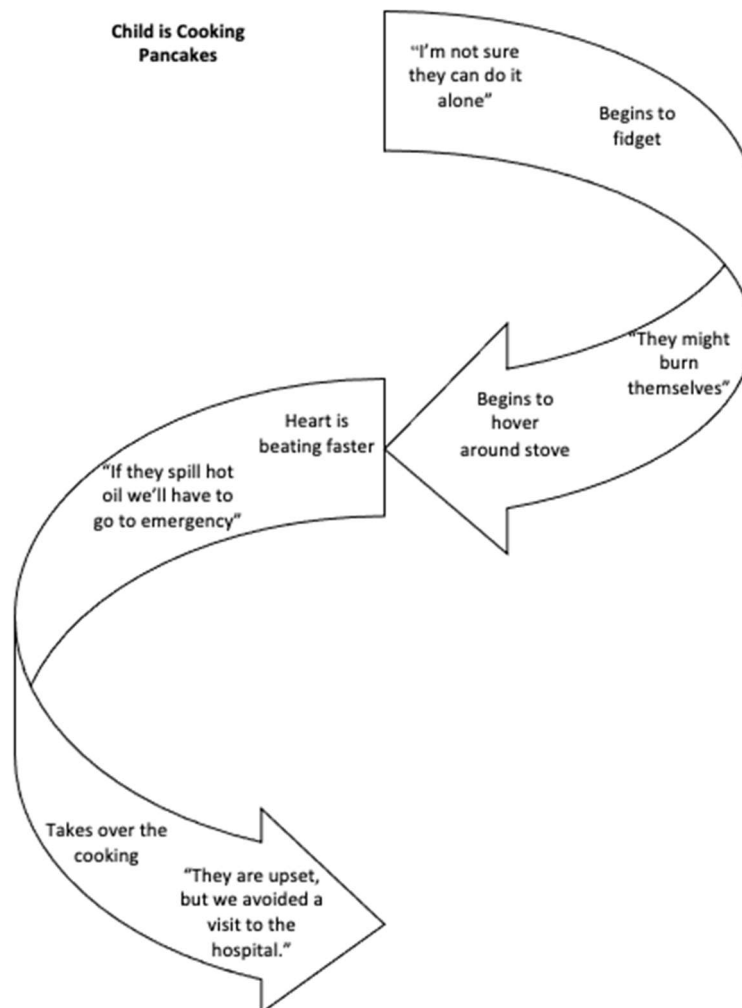
Addition of Population Specific Examples. Example of text from the parent treatment manual added to provide parent specific content. The excerpt also refers to an accompanying in-session form, which is presented in Figure 1.

“Say: Here is another example of the three components of anxiety. Here we have Jan who has lots of worries about her child Ruby’s safety. When Ruby is about to cook a batch of pancakes, Jan becomes anxious that Ruby will seriously hurt herself. [Walk client through spiral on Form 1.1]

Say: Can you see how the thought component (‘Ruby can’t do it alone because she’ll hurt herself’) impacted on the physiological component (heart beating faster), impacting on the behavioural component (hovering and taking over), with each affecting each other and contributing to Jan becoming more and more anxious?”

Figure 1

Diagram Presented in Session 1, Form 1.1, of the Parent Treatment Manual



2.5.2.2 Addition of Psychoeducation on Parental Modelling of Anxiety and Over-control. In line with the systemic focus of the manual, additional psychoeducation on the bidirectional influences of anxiety disorders in parent-child dyads was included in Sessions 1 and 2 of the parent treatment manual. These modifications were illustrated within the parent treatment manual using vignettes specific to the parent-child dyad. Excerpts of the additional psychoeducation, including the vignettes, are presented below.

Psychoeducation Related to Parental Modelling of Anxiety. This extended passage details the psychoeducational content included in Session 1 of the parent treatment manual on

the topic of parental modelling of anxiety. The passage includes therapist information about the purpose of the psychoeducation, along with scripted text.

“This section is for the exploration of ways the client might inadvertently model anxious behaviours and thoughts to their child. The purpose is for the parent to develop insight into how their cognitions and behaviours can potentially impact on their child’s cognitions and behaviours. Additionally, the exercise helps clients to develop a greater understanding on the unique influences of anxiety in parent-child dyads.

Say: Since the focus of treatment relates to your anxiety, but also your child’s anxiety,

I want to spend some time talking about a special type of learning about threat, called modelling. Children frequently copy their parents; just think of the little boy or girl who pretends to shave to be just like dad. It’s reasonable then to expect that children may learn ways to behave or cope through watching and imitating their parents. Let’s go through an example:

Say: Joe has a 9-year-old daughter named Maddy. When Joe was 7, he was playing outside with his siblings and a stray dog bit him on the arm. His siblings and dad managed to scare the dog off, but Joe’s arm required 4 stitches. Since then, Joe has an intense fear of dogs. Joe is extremely wary when it comes to dogs, especially around his daughter Maddy. He doesn’t let her play in the front yard for fear of a stray dog wandering in. He also doesn’t let Maddy pet the neighbour’s dog, taking every opportunity to explain to Maddy that dogs are very dangerous. When Joe and Maddy are walking down the street and they see a dog, Joe immediately stiffens up, grabs Maddy by the hand and squeezes tightly, telling her that she is safe with dad, and that the ‘bad dog’ can’t get her. Now,

every time Maddy sees a dog, she immediately tenses, runs up to her dad and squeezes onto his leg in fear.

Generate a discussion of how Joe's experience of a dog bite, has influenced the way he responds to dogs. Importantly these behaviours are consistently 'modelled' to Maddy who learns that dogs are dangerous and imitates the same behaviours of her father around dogs. Allow the client some time to reflect on ways they potentially may model anxious behaviours to their child. Finally, make it clear that the discussion of modelling is not to blame parents for anxiety in their child, but it is for them to understand the influences of their own and their child's anxiety.

Say: What are some of the things that Joe does that might communicate to Maddy that she should be afraid of dogs? What about Maddy's behaviours around dogs?

Say: Now thinking about your own relationship with your child, are there any ways in which your own experience of anxiety might impact on your child's anxious behaviours? Do you notice your child behaving similarly in situations that cause you anxiety?

Say: I really want to stress that this exercise is not one of self-blame. I find that many parents want to know at least a bit about the potential causes of anxiety in children. What's important to remember here is that it doesn't matter where the anxiety came from, what matters is that we become aware of the patterns so we can do something about it. The fact that children are like little sponges that absorb the information around them means we can use the power of modelling to our advantage. It means that parents can model courageous behaviour to show their child helpful ways to manage tough situations. Throughout treatment you and your child will learn these helpful ways of managing tough situations, and

you'll have the opportunity to model courageous behaviours in a supportive environment."

Psychoeducation Related to Over-controlling Parenting Behaviours. The following extended passage details the psychoeducational content included Session 2 of the parent treatment manual on the topic of over-controlling parenting behaviours. This passage includes therapist information about the purpose of the psychoeducation, along with scripted text.

"Facilitate a discussion about parent over-control and its impact on child anxiety. To help parents better understand the behaviours, parent overprotection is used within scripted text as it is more intuitively understood. Discuss the special relationship between a parent and their child and validate the parent's experience through acknowledging that child anxiety is likely to affect parent anxiety by increasing their worries about their child, particularly about their child's ability to cope independently or their parenting ability. Link how this increased worry may also increase the parents own anxious over-controlling or overprotective behaviours, like watching the child closely, permitting/encouraging avoidance, or rescuing/doing things for the child. Talk briefly about the benefits and then the consequences of over-control for themselves and their child.

Say: I want to have a think about the behavioural component some more, but this time with you and your child in mind. Being a parent isn't always easy, and this can be even more challenging when your child experiences anxiety. We spoke last week about how parent modelling can contribute to anxiety in children, but in turn a child's own anxious behaviours can contribute to anxiety in the parent. This can cause an increase in worry about your anxious child, but can also change a parent's behaviours in relation to their anxious child. Parents might

start to become overprotective, by doing things like watching their child closely, permitting or even encouraging they avoid certain tasks, directing their child on what to do, how to behave, or even take over completely and do something on behalf of their child.

Generate a discussion with the client about the pulls and benefits of engaging in over-controlling behaviours toward their anxious child. Elicit a discussion about why the parent might behave that way and normalise the behaviours. Consider reasons of over-control for the child's benefit: child is distressed or there is the potential for threat, watching closely over the child means they can act quickly or protect them, avoiding tasks or taking over means their child's distress decreases quickly. Consider reasons for over-control for the parent's benefit: parents might be busy, and it reduces the child's distress quickly in the short term, it makes the parent feel good to be useful to their child, stepping in can also quickly reduce the parent's distress and anxiety. Further, over-controlling/protective behaviours may stem from the client's belief that it is what a parent should do!

Say: Have you ever found yourself doing this? Why do you think you act that way?

What are some of the advantages of this behaviour?

Next, explore the consequences to the behaviour. Assure parents that they engage in these behaviours not because they are naturally mean or pushy, but that they are trying to help the situation. In the short term, these behaviours help reduce anxiety for the parent and their child. The immediate reduction in anxiety means parents are more likely to be over-controlling in the future. The child learns they cannot handle feared situations themselves and can only do it with their parent's help. This increases child anxiety next time they encounter the situation, reinforcing the parent's over-controlling behaviours. Over time, this reduces the parent's confidence in their

own and/or their child's ability, sending a message that the child cannot cope alone.

This can exacerbate the parent's worry/anxious cognitions and maintain the over-controlling behaviours.

Say: What do you think might be some of the consequences of this behaviour? Why might this reinforce a pattern of anxiety for you and your child?"

2.5.2.3 Content Modifications to Address Anxious Cognitions Related to the Parenting Role. Given the hypothesised role of anxious cognitions related to the parenting role in the maintenance of anxiety disorders in parents, several content adaptations were made to the parent treatment manual to cater for these types of cognitions. Adaptations to general anxiety psychoeducation and cognitive restructuring psychoeducation provided in Sessions 1 and 2 of the parent manual were applied. Information and vignettes associated with anxious cognitions related to the parenting role were provided to parents as a way of normalising their experience, but also as an explanation for how the interpretation of cognitions related to the parenting role can maintain anxiety.

Adaptations to Cognitive Restructuring Psychoeducation to Assist Parents Identify Anxious Cognitions Related to the Parenting Role. The following excerpt from the parent treatment manual details a vignette included for the purposes of cognitive restructuring psychoeducation. The purpose of the vignette is to demonstrate the cognitive model, and rationale for the use of cognitive restructuring. The following vignette about 'Jacob' was included in the original tCBT manual, however the example has been extended upon in the parent manual to include details about his son 'Daniel' to assist parents in identifying anxious cognitions related to the parenting role.

"Importance of Thoughts: In this section, we begin to introduce the idea that it isn't the thing, event, or situation that causes anxiety, but rather our interpretation of the thing, event, or situation. Describe a hypothetical person who has fears that are

different from any of the clients' fears. Show how their interpretation of the feared stimulus, not the feared stimulus itself, evokes the anxiety.

Say: The first step is noticing and acknowledging why at times parents might become overprotective of their child, but now I want to start exploring strategies to help break the cycle. You might have noticed in our discussions that overprotective behaviours usually happen because of an anxious thought, usually that something bad might happen if you don't step in. So, it appears our thoughts about a situation are really important because they can influence how we feel and act. Let's explore this with an example.

Say: Jacob has a fear of health problems. He had always been somewhat anxious all of his life, but when he was a teenager, his father suddenly collapsed from a stroke and died later in the hospital. While Jacob was at the hospital with his father, he also saw lots of other stroke patients. Some of them couldn't speak well, others were partially paralysed. Ever since then, Jacob has been terrified of having a stroke or some other sudden major health problem. Specifically, whenever Jacob experiences a sharp headache, he automatically fears that he is having a stroke or an aneurysm. Terrified that he will die, Jacob will immediately rush to the Emergency Room. Each time, the doctors run some tests and assure him that he isn't dying, and he feels lucky... like he cheated death. He worries that the next time, though, he might really have a stroke.

Say: Let's look at Jacob's story for a moment. What was it that triggered his anxiety in the story? [Headache]. What could be some reasons that someone could have a headache? Jacob thought it could be a stroke. What are some other reasons why people have headaches? [Develop a list of 5 or 6 neutral causes of

headaches]. How do you think someone would react if they had a headache and assumed it was because of [Reason #1]? How about [Reason #2]?

Say: So, it looks like how you interpret different things makes a difference in how you react to those things. If you believe that something is dangerous, you'll react fearfully. In Jacob's case, although the headache could have been the result of any number of things that are not dangerous, Jacob's interpretation of the headache as a sign of a stroke is what made him feel anxious.

Next, use the example of Jacob to explore the influence of anxiety in a parent-child dyad. Here a similar but different situation might trigger a similar interpretation and response from a parent. Again, highlight how important the interpretation of the event is, rather than the event itself. Finally, tie it together by demonstrating how cognitions impact upon feelings and behaviour, potentially reinforcing anxiety for the parent and their child.

Say: Now let's use the same example, but this time with an added piece of information, Jacob is a dad of a 10-year-old son Daniel. Everything else you know about Jacob's is still the same, his father died of a stroke, and ever since that experience Jacob has been terrified that he will have a stroke. One day, Jacob's son Daniel comes to him saying, 'Dad, I've got a headache'. Again, Jacob feels terrified and thinks his son might be having a stroke, and that he could die. He immediately rushes his son to the Emergency Room.

Say: Let's look at Jacob's story again. What was it that triggered his anxiety in the story? [his son Daniel's headache]. What could be some reasons that Daniel could have a headache? What are some other reasons why people have headaches? [Develop a list of 5 or 6 neutral causes of headaches]. How do you

think someone would react if their child had a headache and they assumed it was because of [Reason #1]? How about [Reason #2]?

Say: You see, although the situations were different, the same anxious thoughts were triggered for Jacob. That is because in both situations Jacob's interpretation of the events were catastrophic and very dangerous, and therefore his reactions were driven by this fear. Again, Jacob's interpretation of his son's headache as a stroke is what caused him to feel anxious, and this led to him overreacting or becoming overprotective.

Say: How do you think this might affect Daniel the next time he has a headache?

What do you think Daniel's interpretation of a headache might be in the future?"

2.5.2.4 Development of the Novel Joint-Observational Exposure Tasks and

Forms. Joint-observational exposure tasks occur during Sessions 4 to 6, while individual exposure tasks are conducted during Sessions 7 to 9. The ordering of exposure tasks was intentional to ensure parents and clinicians could select anxiety stimuli from the parent's hierarchy that would be developmentally appropriate for their child to observe, while also being considerate of the parent's privacy. This ordering allowed parents to tackle greater anxiety inducing stimuli in-session with the therapist and/or as homework tasks, without concerns of being observed by their child. Further, given the complexity of conducting joint-observational exposure tasks, additional information for therapists was included in the parent treatment manual. This information included joint-observational exposure planning, intervention rationale, suggested session structure, and instructions for using pre-observational cognitive restructuring and post-exposure review forms.

Additional Information Provided to Therapists About Conducting Joint-observational Exposures. An example of the additional information provided to therapists in the parent manual prior to the commencement of joint-observational exposures. The

accompanying Table 3, also contained within the parent treatment manual, has been included here to outline the recommended structure of the joint-observational exposure sessions.

“The first three exposures comprise the joint-observational exposures. The co-therapists (that is the parent therapist and child therapist) should spend some time prior to Session 4 examining both the parent and child’s Trigger and Response Hierarchies, and begin planning how best to conduct the observed exposure sessions. Consider ways that appropriate items on the hierarchy can be created in vivo, simulated, or imagined, during the exposure sessions. Consideration of the child’s developmental stage and parent’s privacy should be given when determining the appropriateness of the observed exposures. Exposures deemed inappropriate for the child to observe should not be discarded, but instead considered for the parent’s individual exposures or for between-session homework.”

Table 3

Joint-Observational Exposure Task Recommended Format and Timeline.

Parent Session – Therapist 1	Child Session – Therapist 2
Review Homework (5mins)	Review Homework (5mins)
Pre-Exposure Cognitive Restructuring (10mins)	Exposure Process Discussion (10mins)
Conduct Exposure Task (10-15 mins)	Observation of Parent Exposure Task (10-15mins)
Post-Exposure Review (5mins)	Post-Observational Exposure Review (5mins).
Pre-Observational Exposure Cognitive Restructuring (10mins)	Pre-Exposure Cognitive Restructuring (10mins)
Observation of Child Exposure Task (10-15mins)	Child Exposure Task (10-15mins)

Post-Observational Exposure Review (5mins)

Post-Exposure Review (5mins)

Homework (5mins)

Homework (5mins)

Development of In-Session Joint-Observational Exposure Forms. Parents also participated in cognitive restructuring utilising an adapted observational exposure form prior to observing their child's exposure. The purpose of the pre-observational exposure cognitive restructuring form was to facilitate the identification of cognitions related to their child's expected performance and coping ability, the parent's worry, or concern about their child and/or parenting ability, and any possible ensuing behavioural response such as parental over-control. The pre-observational exposure form utilised a modified language version of the existing in-session exposure form used by parents during their own exposure tasks. Language shifts related to the identification of automatic thoughts, where the in-session exposure form was designed to elicit cognitions about the parent's exposure task (e.g., "*List the major Automatic Thoughts you will probably have in this exposure*"), while the observational exposure form elicited cognitions related to observing the child's exposure task (e.g., "*List the major Automatic Thoughts you have about observing your child's exposure*").

Following joint-observational exposures, parents also completed a post-observational exposure review form, displayed in Figure 2, to identify when their child successfully modelled adaptive coping behaviours, and to reflect on new evidence about their own or their child's behaviours that might challenge prior anxious assumptions and cognitions. A secondary version of this form was created for parents to complete post-individual exposures, instead with language modified for parents to identify and reflect upon their own exposure tasks. Parents were asked to describe their exposure task and outcome, along with the two questions "*What new evidence do you have about your experience of anxiety following the*

exposure?”, and *“What new evidence do you have about your ability following the exposure?”*.

Figure 2

Post-Observational Exposure Form 4.5 used in Sessions 4-6

Form 4.2: Post-Exposure Form	Date: _____
Describe the Exposure: (please be brief but provide the important details)	

Describe the outcome of your exposure - Were there changes in SUDs ratings, did you meet your behavioural goals?:	

What new evidence do you have about your experience of anxiety following the exposure?:	

What new evidence do you have about your ability following the exposure?:	

Chapter 3

Extended Methodology: Open-Label Pilot Study Protocol

Chapter 3 – Extended Methodology: Open-Label Pilot Study

3.1 Preamble

The following chapter details the method utilised to examine the feasibility and acceptability of the enhanced CBT intervention for parents of children with co-occurring anxiety disorders. The published protocol manuscript included in Section 3.2 is a synthesised presentation of the broader study context and details the methodology used to address the present thesis Aims 2a-e related to conducting the open-label pilot study feasibility and acceptability investigations. Following the manuscript, supplemental information unable to be included in the protocol about the measures utilised in the pilot study are provided in Section 3.3. This section includes information about the structure, scoring, and psychometric properties of the quantitative measures selected to address intervention feasibility and acceptability research aims for parent participants. Finally, Section 3.4 of this chapter ends with an explanation of the impacts to the open-label pilot study methodology caused by the worldwide COVID-19 pandemic.

3.2 Paper 1 - Feasibility and Acceptability of an Enhanced Cognitive Behavioural Therapy Programme for Parent–Child Dyads with Anxiety Disorders: A Mixed-Methods Pilot Trial Protocol

The manuscript titled *“Feasibility and acceptability of an enhanced cognitive behavioural therapy programme for parent–child dyads with anxiety disorders: A mixed-methods pilot trial protocol”* published in *BMC: Pilot and Feasibility Studies* is presented. As the current research was undertaken as part of a larger research project, the protocol manuscript details the intervention and method utilised in the open-label pilot study for the concurrent enhanced CBT intervention. The overall enhanced intervention includes separate parent and child protocols developed for the treatment of co-occurring anxiety disorders in parent-child dyads, with children aged 6-12 years. As the parent and child intervention

treatment manuals were developed separately but as part of the overarching larger research project, and the study method and procedures for parent and child dyad members were identical, it was advantageous to publish this information conjointly. This format had the additional advantage of providing a complete picture of the intervention rationale, context, and potential benefits. Therefore, the protocol manuscript was published under a joint-first authorship agreement, with the equivalent first author undertaking the accompanying child treatment manual development and evaluation.

The protocol manuscript was submitted for publication to *BMC: Pilot and Feasibility Studies* in November 2020, and published online via open access in May 2021. The formatting of the published manuscript has been preserved here, however; the thesis page numbers have been retained in order to maintain consistency with the overall thesis.

STUDY PROTOCOL

Open Access

Feasibility and acceptability of an enhanced cognitive behavioural therapy programme for parent–child dyads with anxiety disorders: a mixed-methods pilot trial protocol



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Abstract

Background: Cognitive behavioural therapy (CBT) is the most widely recognised and efficacious psychological therapy for the treatment of anxiety disorders in children and adults. However, suboptimal remission rates indicate room for improvement in treatments, particularly when both children and their parents have anxiety disorders. Bidirectional transmission and maintenance of anxiety within parent–child dyads could be better targeted by CBT, to improve treatment outcomes for children and parents with anxiety disorders. This study aimed to develop and evaluate the feasibility and acceptability of a concurrent parent–child enhanced CBT intervention that targets the individual's anxiety disorder(s), as well as the bidirectional factors that influence and maintain anxiety in the dyad.

Methods: Feasibility and acceptability of the proposed CBT protocol will be evaluated in an open-label pilot trial of the intervention utilising qualitative and quantitative data collection. Ten parent–child dyad participants ($n = 20$) with anxiety disorders will be recruited for the proposed intervention. The intervention is based on an empirically supported 10-week CBT programme for anxiety disorders in adults, adapted to be delivered to parent–child dyads concurrently, and to target anxious modelling and overprotective behaviours through joint observational exposures. Intervention feasibility will be explored by pre-post symptom change on a range of clinician- and self-report measures to determine preliminary indications of participants' intervention response and effect size calculations to estimate sample size for a future definitive randomised controlled trial (RCT). Additional feasibility measures will include recruitment rates, completion rates, and adherence to programme requirements. To explore participant acceptability of the intervention, qualitative interviews will be conducted with five parent–child dyads who complete the intervention ($n = 10$), along with five parent–child dyads with anxiety symptoms who express interest in the intervention ($n = 10$). Acceptability measures will include prospective and retrospective quantitative self-report and qualitative interview data.

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Discussion: This pilot trial will utilise a mixed-methods design to determine the feasibility and acceptability of delivering an enhanced CBT intervention for the concurrent treatment of parent–child dyads with anxiety disorders. The results of this trial will inform the development and implementation of a future definitive randomised clinical trial to evaluate intervention efficacy.

Trial registration: Australian and New Zealand Clinical Trials Registry, [ANZCTR1261900033410](https://www.anzctr.org.au/Trial/Registration/Trial.asp?id=1261900033410). Prospectively registered: pre-results. Registered 04 March 2019.

Keywords: Cognitive behavioural therapy, Anxiety disorders, Parent and child, Feasibility, Acceptability, Pilot trial, Mixed-methods

Background

Anxiety disorders are amongst the most prevalent class of mental health disorders in adults and children [1, 2]. They often first occur in childhood and continue into adulthood if untreated [3]. Across the lifespan, the presence of clinical anxiety is associated with poorer outcomes in interpersonal, academic, occupational, and health domains [4, 5]. Cognitive behavioural therapy (CBT) is recognised as the most efficacious and cost-effective psychological treatment for anxiety disorders in adults and children [6–8]. Despite its extensive evidence base, recent meta-analytic results of CBT for anxiety disorders reported mean remission rates of approximately 50% in adults and children [9, 10]. These modest response rates suggest significant scope for improvement of treatment outcomes [6, 11]. Given the prevalence of anxiety disorders and associated negative impacts for individuals and society [4, 12, 13], further research refining and trialling efficacious CBT protocols targeting anxiety is warranted.

The link between parental anxiety and the development and maintenance of anxiety disorders in children is widely reported. Several clinical trials of CBT for treating child anxiety disorders have found that having a parent with clinical levels of anxiety can significantly reduce CBT effectiveness, as assessed by pre-post clinician- and self-report measures of anxiety severity [14–18]. In addition to parental psychopathology, various parenting factors have been proposed to mediate parent–child anxiety transmission, and contribute to poorer treatment outcomes in children. These parenting factors include rejection, overprotection, accommodation, parent cognitions of child competence, modelling of anxiety, and information transfer [19–21]. Of these factors, parental modelling of anxiogenic responses and overprotective parenting behaviours have been most consistently associated with child anxiety [22, 23], with growing evidence emerging for the role of parental accommodation in maintaining the child's anxiety [24]. Specifically, parents with anxiety are more likely to model avoidance and show increased sensitivity to child distress and increased apprehension when their child engages in age-

appropriate tasks [25]. When repeatedly exposed to parents' anxious responses, children may vicariously learn to respond in similarly anxious ways [26, 27]. Overprotective parenting increases children's risk of developing anxiety disorders [22], by reducing opportunities to develop self-confidence and adaptive coping behaviours in new or challenging situations [28–30]. This in turn maintains the anxiety, as children form negative cognitions of being unable to cope, and increasingly avoid threatening stimuli [30, 31].

While less is known about the impacts of child anxiety on parent anxiety treatment outcomes, a growing body of research suggests that the presence of child anxiety can impact on anxiety in parents. A study investigating interactions in mother–child dyads indicated that anxious and non-anxious mothers of anxious children expressed greater catastrophising cognitions compared to anxious and non-anxious mothers of children without anxiety disorders [32]. Other studies investigating bidirectional anxiety relationships in parent–child dyads found that post-treatment reductions of children's anxiety symptoms were associated with later reductions in parental anxiety [33], and overprotective and controlling parenting behaviours [34]. Similarly, other research has indicated that higher child anxiety predicted greater parental control [35], over involvement [36, 37], and parental accommodation [38]. Taken together, this body of research indicates that the presence of anxiety in a child, irrespective of their parent's psychopathology, may influence behavioural responses and anxiety symptoms in parents.

Despite evidence for bidirectional influences of anxiety disorders in parent–child dyads, most prior research has typically involved parents as co-facilitators in child anxiety treatment [39–41] but has neglected to adequately address anxiety in parents [42]. However, there have been three notable exceptions to date which have examined whether targeting anxiety in parents might improve child CBT outcomes. In two randomised controlled trials (RCT) of CBT for child anxiety disorders, Cobham et al. [17] and Hudson et al. [14] included an adjunct parental anxiety management (PAM) programme to

treat co-occurring parental anxiety. While results of the Cobham study indicated PAM initially improved diagnostic outcomes for children with an anxious parent compared to control, significant differences in treatment outcome were not maintained at 6- and 12-month follow-up. Similarly, Hudson reported that the addition of PAM conferred non-significant differences in remission rates for child primary anxiety diagnosis compared to child-CBT alone at post-treatment and 6-month follow-up. Furthermore, adjunct PAM did not improve self-reported anxiety symptoms [17] or remission rates for parents with an anxiety disorder [14] at post-treatment or follow-up. These findings suggest that the brief PAM sessions were insufficient for treating parent psychopathology. An evidence-based treatment such as CBT may be required to target parental anxiety, to in turn improve CBT outcomes for children with anxiety disorders.

The third study was a comprehensive three-arm RCT where children received CBT and their mothers were assigned to either maternal-CBT conducted 8 weeks prior to their child's CBT, a concurrent mother-child interaction (MCI) intervention, or maternal active control [20]. The MCI intervention was designed to reduce potentially anxiogenic dynamics within the parent-child relationship and to increase maternal autonomy-promoting cognitions and behaviours. The maternal active control condition involved sessions which promoted family physical health behaviours. Results indicated the addition of maternal-CBT, or MCI intervention did not significantly improve outcomes for children beyond child-CBT alone. Additionally, mothers treated with CBT initially showed greater primary anxiety disorder remission than mothers in the MCI or active control conditions; however, this effect was no longer significant after children received CBT. Maternal-CBT results were not maintained following child-CBT as reductions in child anxiety led to reductions in mothers' anxiety symptoms across conditions. While this result supports the bidirectional influence of child anxiety, the reported primary anxiety disorder remission rates for mothers across conditions ranged from 39.4 to 57.8%, consistent with meta-analytic adult CBT remission rates [9]. Therefore, a further scope for the improvement of parent treatment outcomes exists. Additionally, while the inclusion of evidence-based treatment for anxiety in parents takes a positive direction, the non-significant differences between treatment arms suggest that treating mothers 8-weeks prior to children may not have adequately intervened with bidirectional factors maintaining anxiety disorders within the dyad. Furthermore, since anxiogenic parent-child interactions are known risk factors for child anxiety [22, 26, 27] and appear to contribute to the bidirectional nature of anxiety maintenance within the dyad [32–34], targeting

anxiogenic interactions *concurrently* with CBT for child and parent anxiety may achieve stronger effects for parent and child anxiety treatment outcomes.

While substantial evidence indicates bidirectional associations maintain anxiety in parent-child dyads, the impact of these bidirectional factors has not been adequately catered for by existing treatment protocols. Hence, we propose a treatment approach that targets anxiety symptomatology in both parents and children, as well as bidirectional factors which maintain and exacerbate anxiety disorders within the parent-child dyad via graded exposure techniques. The proposed protocol is adapted from an existing transdiagnostic CBT manual [43], which has demonstrated successful pre-post treatment outcomes in several previous clinical trials [44–46]. This manual was chosen to facilitate a concurrent treatment format for children and parents regardless of their specific anxiety diagnoses. To ensure alignment of treatment approaches and consistent session content for both members of the dyad, the original adult protocol was modified for child participants rather than utilising an existing child CBT protocol for anxiety. The process of adapting the original protocol for children involved extensive developmentally appropriate translations based on knowledge of the cognitive and emotional developmental stages of the target treatment population. Additionally, feedback on a preliminary version of the adapted protocol was provided by primary school-aged children to ensure that content was 'child-friendly' and comprehensible. Subsequently, the following major adaptations and additions to the original protocol were made: (1) the development of a child-version of the adult protocol, (2) addition of psychoeducation and cognitive strategies for parents targeting bidirectional factors which maintain anxiety within the dyad, and (3) incorporation of joint observational exposure sessions.

The joint observational exposures are considered the key component of the proposed intervention and to our knowledge has not been undertaken as a component of CBT previously. In the joint observational exposure activities, the parent will undertake an individual exposure while being observed by the child. Following this, the child will participate in an exposure activity while the parent observes. Neither dyad member will be directly involved in the other's exposure; however, after acting as observers, both the parent and child will complete post-exposure reviews separately with their individual therapist to reflect on new evidence that emerged from observing the exposures.

Grounded in Bandura's social learning theory [47] and the recognised impacts of parental modelling on anxiety transmission in their children [19, 36, 48], joint exposures allow parents to model alternative adaptive coping behaviours to their child. Through observation, it is expected

that the child will vicariously learn that experiencing anxiety is normal and manageable, thus increasing perceptions of self-efficacy and coping ability. Additionally, as parental anxiogenic cognitions are both a known risk factor for anxiety in children and a maintenance factor for anxiety in parents [32, 36], by observing their child, parent cognitions about the child's coping ability and resilience may be modified. It is subsequently anticipated that modified parent cognitions will lead to reductions in overprotective and accommodating behaviours. Furthermore, as silent observers, parents practice regulating their own physiological anxiety response and behavioural impulses to overprotect. We anticipate that this adapted exposure approach will significantly improve treatment outcomes for parents and children with anxiety disorders.

In line with guidance from the Medical Research Council on the development and implementation of complex intervention [49], the current study is an initial step in determining if the proposed enhanced intervention is feasible and acceptable for parent-child dyads with anxiety disorders. A mixed-methods approach was chosen to explore preliminary indications of participants' intervention response and to include the essential contribution of the client voice, which provides a richer understanding of participants' programme acceptability [50]. In accordance with the CONSORT extension for pilot and feasibility trials [51], trial feasibility asks questions related to whether a future trial can be done, should be done, and how. To address feasibility, the present study includes a calculation of effect size estimates for outcome measures to estimate the sample size of a future definitive RCT [51]. Further, feasibility will be assessed via recruitment rate, completion rate, and adherence to study requirements. Trial acceptability will be examined within the theoretical framework of acceptability as outlined by Sekhon et al. [52]. This framework defines acceptability as consisting of multiple components that reflect clients' anticipated (prospective) or experiential (retrospective) responses to an intervention [52]. The seven component constructs outlined in the framework include affective attitude, perceived effectiveness, burden, self-efficacy, ethicality, intervention coherence, and opportunity costs [52]. Outcomes of the pilot feasibility and acceptability trial will inform whether to proceed with a powered randomised controlled trial to determine treatment efficacy and intervention validation in the future.

To the best of our knowledge, the proposed protocol is the first to concurrently treat parents and children with anxiety disorders, and to utilise a joint observational exposure format. The overarching aims of this study are as follows:

- 1) Assess study feasibility through investigation of:
 - a. Variability in clinician-report and self-report outcome measures to determine preliminary indications of participants' intervention response;
 - b. Effect size calculations to estimate the sample size of a future definitive RCT;
 - c. Percentages of recruitment rate, completion rate, and adherence to study requirements.
- 2) Explore participants' prospective and retrospective acceptability of the enhanced programme using quantitative self-report and qualitative interview data collection methods.

Method

Study design and setting

Feasibility and acceptability of the protocol will be evaluated utilising a mixed-methods design, encompassing qualitative and quantitative data collection. The intervention component is an open-label pilot trial (hereafter referred to as 'the intervention'), utilising a pre-test-post-test within-groups design to obtain an effect size estimate for future RCT planning. The intervention will be conducted in person at the Monash University psychology training clinic. Acceptability of the protocol will also be investigated with qualitative interviews of parent and child dyads. All qualitative interviews will be conducted remotely via video conferencing software.

Participants and sample size

The intended intervention sample will be 10 parent-child dyads ($n = 20$). This sample size is recommended by Birkett and Day [53] as sufficient for a pilot feasibility trial effect size estimate in advance of conducting a powered RCT. Parent participants will be adults 18 years and older, while child participants will be aged 6–12 years. The parent participant is defined as the biological parent and/or primary caregiver of the child participant. For the qualitative interviews, approximately 10 parent-child dyads ($n = 20$) will participate; however, a slightly higher number of dyads may be recruited to achieve data saturation. Purposive sampling will be utilised to gather a diverse range of consumer perspectives. Therefore, participants will include five dyads ($n = 10$) that have completed the intervention to determine retrospective acceptability, and five dyads ($n = 10$) that express interest in participating to evaluate prospective acceptability.

Eligibility criteria

For the intervention

Parent-child dyads (child age range 6–12 years) must both meet criteria for a primary diagnosis of an anxiety disorder as defined by the *Diagnostic and Statistical Manual*, 5th edition (DSM-5) [54]. Clinician-administered diagnostic

interviews will be undertaken prior to the intervention phase of the study to assess for current primary anxiety disorder diagnoses in both dyad members (see 'Pre-intervention assessment', below). Dyads who present with a principal DSM-5 diagnosis other than an anxiety disorder, any other condition of sufficient severity that requires immediate clinical prioritisation, e.g. suicidality and neurocognitive impairment, or insufficient English ability, will be excluded from the study and referred to appropriate alternative services.

For the qualitative data

As participants who complete the study protocol have previously met intervention eligibility criteria, the only additional requirement is the completion of the intervention. For parent–child dyads who express interest in the intervention, additional eligibility requirements are that they self-report current anxiety symptoms and have not previously participated in the intervention. Exclusion criteria for the qualitative study are the same as those specified for the intervention.

Recruitment and screening

Potential participants will be recruited via promotional study flyers sent to local schools for dissemination amongst school mental health and wellbeing staff, and publication in school newsletters. Additionally, paid targeted advertising on social media will be utilised. Promotional material will contain a link to an electronic expression-of-interest form. Interested parents will be contacted by study researchers to complete a brief phone screening. For the intervention, potentially eligible parent–child dyads will be invited to participate in a formal diagnostic pre-intervention assessment. Ineligible families as indicated by the phone screening will be provided with information to access alternative psychological support, if required. For the qualitative interviews, dyads who previously participated in the intervention or who had expressed interest in being involved will be invited to participate. Following phone screening, eligible families will submit online informed consent prior to their interviews.

Pre-intervention assessment

Prior to conducting the pre-intervention assessment, parents and children will be provided with detailed age-appropriate explanatory statements, and informed consent and assent to participate will be obtained. The Anxiety Disorders Interview Schedule for DSM (ADIS-5) [55] for parents and the Anxiety Disorders Interview Schedule for DSM Child and Parent Versions (ADIS-IV-CP) [56] for children will be administered to determine presence of a primary anxiety disorder diagnosis. The adult and child versions of the Columbia-Suicide

Severity Rating Scale (C-SSRS) [57] will be administered to parents and children respectively, to determine risk status. Following the diagnostic interviews, parent–child dyads will be invited to attend a feedback session to discuss assessment results and treatment recommendations. Ineligible dyads will be presented with options for referral and/or alternative treatment recommendations. Eligible dyads will be invited to participate in the intervention.

Qualitative interview procedure

All interviews will be conducted via video conferencing software at times convenient to families. The parent interviews will be conducted in two parts, with part 1 (parent focus) administered by SG and immediately followed by part 2 (child focus) administered by CS. Child interviews will be undertaken separately to the parent interview, by CS. It is anticipated that children will be interviewed independently of their parent; however, parents will be permitted to sit in on the interview if requested. Parents who elect to sit in on child interviews will be asked not to provide input to interview content. Parent interviews are estimated to take 60–90 min; child interviews will be approximately 30 min. For dyads who participated in the intervention, interviews will be conducted following the conclusion of the intervention. Dyads who have not participated in the intervention will be interviewed as they are recruited. All dyads will receive a \$30 gift card as reimbursement for their time participating in the interviews.

Intervention

The concurrent intervention will consist of ten treatment sessions. Sessions will be conducted individually, with one therapist, although some intervention activities will be shared experiences involving the dyad and two therapists. Sessions will occur weekly and last for 60 min each. Intervention content follows a typical CBT format of psychoeducation, cognitive restructuring, exposure, and relapse prevention, with homework assigned and reviewed weekly (see Table 1 for intervention content outline). The following major adaptations and additions to the original protocol [43] were made to tailor the intervention for parent–child dyads:

- (1) Child-version of the adult protocol: modifications included extensive changes in language and simplification of some CBT concepts to accommodate the developmental stage and cognitive abilities of the target participant age group. To increase programme appeal, vignettes with child-relevant content, diagrams, and illustrations; a workbook with colourful worksheets and handouts; and a rewards chart to monitor and

Table 1 Intervention content

Session	Cognitive behavioural therapy strategies and description
Session 0: 'Pre-Treatment Feedback Session'	Present and discuss anxiety assessment results with participant ^a (parent is present for child assessment feedback). Familiarise the participants with the treatment structure. Describe and illustrate subjective units of distress ratings and coping response. Set treatment goals by developing a trigger response hierarchy.
Session 1: 'Introduction to the Anxiety Treatment Program'	Psychoeducation to create shared understanding of terminology and to normalise the experience of anxiety. Psychoeducation on: The development and maintenance of anxiety disorders and the relationship between thoughts, feelings and behaviours. Child only: introduction to the workbook, achievement charts, and rewards. Parent only: psychoeducation on modelling of anxiety.
Session 2–Session 3: 'Challenging and Changing our Anxious Thoughts'	Additional psychoeducation on the importance of thoughts as antecedents to anxiety. Introduction to the concept of cognitive restructuring. Participants will learn to identify anxious thoughts, recognise cognitive biases and assumptions through the utilisation of challenging questions, and generate adaptive alternative responses to reduce habitual anxious cognitions. Parent only: psychoeducation on bidirectional nature of anxiety in parent–child dyads, overprotective and accommodating parenting behaviours.
Session 4–Session 6: 'Facing Our Fears Together'	Participants undertake exposure activities to systematically confront items on their trigger-response hierarchies ^a . Parent and child dyads observe each other completing exposures. Exposures function to habituate clients to the physiological responses of anxiety, provide a learning opportunity to evaluate the validity of catastrophic fears, and reduce avoidance/escape behaviours. Cognitive restructuring and review is completed pre- and post-observing and participating in exposure tasks.
Session 7–Session 9: 'Facing Our Fears'	Participants continue individual exposure activities. Sessions follow the same format as previous exposure sessions but without the observational component. Parent only: parent's anxiety triggers that may be distressing to children will be targeted during these sessions.
Session 10: 'Finishing Treatment: Where to From Here?'	Relapse prevention including treatment review, psychoeducation, and skills development on maintaining successes and continuing to make progress and managing setbacks. Congratulations and celebration of treatment completion ^a .

Note. Parents and children are treated in separate individual treatment sessions, although some treatment activities are shared experiences

^aShared treatment activities

acknowledge progress were included in the child treatment manual. Appropriate rewards for completing treatment components will be individually negotiated between the parent and child.

- (2) Additional psychoeducation for parents on bidirectional factors: specifically, psychoeducation on the impact of overprotection, accommodation, and modelling anxious behaviours on child anxiety. These modifications are illustrated by vignettes specific to the parent–child dyad.
- (3) Content modifications to address anxiogenic cognitions related to the parenting role: cognitive restructuring tasks to identify bidirectional anxiety maintenance factors and normalise anxiogenic cognitions in the dyad.
- (4) Joint observational exposure sessions: during joint observational exposures, dyad members act as silent observers of each other's exposure. For example, a child may observe his parent with social anxiety disorder initiating a conversation with a stranger, while a parent may observe her daughter with selective mutism read a page of a storybook aloud to the therapist. For parents, cognitive restructuring is undertaken prior to observing their child. This includes identifying cognitions about their child's

expected performance and coping ability, and the parent's ensuing overprotective response. Following joint observational exposures, both dyad members' complete post-exposure reviews to identify when the other member successfully modelled adaptive coping behaviours, and to reflect on new evidence to challenge prior anxious assumptions.

Data collection

Participants will complete self-report feasibility and acceptability measures using paper versions of all questionnaires. Verbal assistance may be provided by clinicians to enhance child participants' comprehension of self-report questionnaires, if required. Administration time-points for all clinician assessments and self-report measures are listed in Table 2.

Feasibility measures

In line with the CONSORT definition of a pilot trial [51], estimates of variability for the following outcome measures which are planned to be administered in a future RCT will be utilised in the current study. These measures will provide preliminary indications of participants' intervention response and enable

Table 2 Schedule of enrolment, interventions, and assessments

STUDY PERIOD													
	Enrolment		Allocation		Post-allocation						Close-out		
TIMEPOINT**	P -t ₁	C -t ₁	P 0	C 0	P t ₁	C t ₁	P t ₅	C t ₅	P t ₁₀	C t ₁₀	P t _x	C t _x	
ENROLLMENT													
Eligibility screen	X	X											
Informed consent	X	X											
Allocation			X	X									
INTERVENTION													
CBT					X	X	X	X	X	X			
ASSESSMENT													
ADIS-5	X										X		
C-SSRS	X	X									X	X	
ADIS-IV-CP		X										X	
OUTCOMES													
CSR	X	X									X	X	
CGI-S	X	X									X	X	
CGI-I											X	X	
STAI-S			X		X	X	X				X		
STAIC-S				X	X	X	X	X				X	
BDI-II			X			X					X		
WHOQOL-BREF			X			X					X		
PSS			X			X					X		
PWM			X			X					X		
POM			X			X					X		
BYI-2				X			X					X	
													35
KIDSCREEN-27				X			X					X	
CBCL/6-18-A				X			X					X	
ACCEPTABILITY													
SRS					X	X	X						
CSRS					X	X	X						
CSQ-8											X		
THQ											X	X	

Note: P parents, C child, -t₁ pre-intervention assessment, t₀ feedback session, t₁ treatment session 1, t₅ treatment session 5, t₁₀ treatment session 10, t_x post-treatment, X administered at that time-point; t₅ measured/undertaken weekly, ADIS-5 Anxiety Disorders Interview Schedule for DSM-5, ADIS-IV-CP Anxiety Disorders Interview Schedule for DSM-IV Child and Parent Version, BDI-II Beck Depression Inventory, BYI-2 Beck Youth Inventory, CBCL/6-18-A Child Behaviour Checklist Anxiety Subscale, CBT cognitive behavioural therapy, CGI-I Clinical Global Impressions Improvement, CGI-S Clinical Global Impressions Severity, CSQ-8 Client Satisfaction Questionnaire, CSR Clinician Severity Rating, CSRS Child Session Rating Scale, C-SSRS Columbia-Suicide Severity Rating Scale, POM Parental Overprotection Measure, PSS Parental Stress Scale, PWM Parent Worry Measure, SRS Session Rating Scale, STAI-C-S State-Trait Anxiety Inventory Child State Form, STAI-S State-Trait Anxiety Inventory State Form, THQ Therapy Helpfulness Questionnaire, WHOQOL-BREF World Health Organization Quality of Life Scale Abbreviated Version

effect size calculations to inform the sample size for a future definitive RCT:

The ADIS Clinician Severity Rating (CSR) [55, 56] will be used to quantify anxiety disorder symptom severity and impairment for both parent and child participants. A CSR rating of ≥ 4 (moderate psychopathology) is considered to meet the threshold for a clinically significant diagnosis [56]. The Clinical Global Impressions (CGI) [58] will be utilised to specify parent and child participant illness severity (CGI-S) and clinical improvement or worsening (CGI-I) in comparison to baseline presentation. Participant self-report of pre- and post-treatment anxiety symptoms will be assessed using the State-Trait Anxiety Inventory child (STAI-C-S) [59] and adult (STAI-A-S) [60] versions. Table 2 summarises all outcome measures and assessment time-points.

Fluctuations in self-reported anxiety symptom severity throughout the course of the intervention will be monitored using the STAI-C-S and STAI-A-S. Parent ratings of child anxiety symptoms will be captured using the Child Behaviour Checklist Anxiety Subscale (CBCL/6-18-A) [61]. The Beck Depression Inventory (BDI-II) [62] and Beck Youth Inventories (BYI-2) [63] will be used to determine recent depressive symptoms in adults, and depression, anxiety, anger, disruptive behaviour, and self-concept in children. Quality of life across broad life domains will be evaluated using the World Health Organization Quality of Life Scale Abbreviated Version (WHOQOL-BREF) [64] and KIDSCREEN-27 [65]. Parenting-related symptoms and behaviours will be assessed with the Parental Stress Scale (PSS) [66], the Parent Worry Measure (PWM) [67], and Parental Overprotection Measure (POM) [68].

Recruitment rates will be determined by the proportion of dyads who meet the intervention eligibility criteria and consent to enter the trial. We will consider the success threshold for recruitment rates $\geq 70\%$. The proportion of dyads that consent and remain participants at the end of the defined study period will be used to evaluate completion rates, with $\geq 80\%$ considered feasible. Adherence to study requirements includes dyad completion of homework tasks, as well as completion of clinician and self-report questionnaires at defined assessment time-points. For all adherence measures, the success threshold will be $\geq 80\%$.

Acceptability measures

Considered within the conceptual framework of health-care intervention acceptability as defined by Sekhon et al. [52], participants' acceptability of the intervention will be explored utilising the following quantitative and qualitative measures:

The Session Rating Scale child (CSRS) [69] and adult versions (SRS) [70] will be utilised to assess participants'

perspectives across key treatment dimensions. Participants' perceptions of therapy helpfulness and credibility related to specific CBT components will be rated with the Therapy Helpfulness Feedback Questionnaire (THQ) [71]. Additionally, five open questions to elicit feedback related to the intervention experience and engaging in observational exposures are included. Child participants will complete a modified language version of the adult THQ. Parents will complete the Client Satisfaction Questionnaire (CSQ-8) [72], which will measure their satisfaction with the intervention.

Qualitative interviews will be conducted to explore participants' prospective and retrospective acceptability. Topics of interest covered in the interview questions will be (1) perceptions of the overall enhanced intervention experience and (2) acceptability of adapted intervention components, with a focus on the novel exposures. Additionally, parents will be asked questions pertaining to (3) the bidirectional influence of anxiety between parent and child, as this relationship is considered a key conceptual underpinning of the enhanced protocol. Part 1 of the parent interview asks about their experience, while part 2 enquires about parents' perspectives of their child's experience. Separate versions of questions were developed contingent upon participants' previous involvement in the intervention.

Data collection

The diagnostic assessments, intervention, and qualitative interviews will be conducted by CS and SG, both provisional psychologists and advanced Doctor of Psychology (Clinical) post-graduate students. CS and SG have prior clinical experience in the provision of general and transdiagnostic CBT techniques. Regular oversight and supervision will be provided from two registered psychologists with extensive experience in clinical practice and research, KL and MY. In addition, an external expert in parenting and qualitative research methods will be regularly consulted throughout the iterative processes of the interview schedule development, qualitative data collection, and analysis.

Prior training will be conducted to achieve inter-rater reliability greater than 80% for ADIS diagnostic assessments. KL will randomly review 20% of diagnostic interviews and intervention videos, to provide supervision, ensure assessment and treatment fidelity, and to prevent clinician drift. To preclude the potential for clinician bias during the collection of pre- to post-intervention outcome measures, the same clinician will not deliver the intervention and conduct the diagnostic assessments for an individual client. SG will conduct the child assessments and deliver parent intervention, while CS will conduct the parent assessments and deliver child intervention.

Data management

Participant data will be de-identified and labelled using unique alphanumeric codes. All interviews and intervention sessions will be video/audio recorded. Qualitative interviews will be transcribed verbatim using an electronic transcription programme. QSR International's NVivo [73] will be used to store and organise qualitative study material to aid in data analysis. All study electronic data including recordings and transcriptions will be password protected and stored on a secure research drive only accessible to the study researchers. Hard-copy files will be stored in locked filing cabinets at the study site. Double data entry will be conducted for 10% of participant questionnaires to promote data quality. For the clinical trial, all raw data pertaining to parents will be stored for 7 years from the last encounter, as required by law. All raw data pertaining to child participants will be stored until the child attains the age of 25 years. For the qualitative study, all digital data collected will be permanently deleted 5 years after the last publication from this research.

Data analysis plan

To assess feasibility related to preliminary indications of participants' intervention response and effect size calculation, repeated-measures analyses of variance (ANOVAs) will be conducted between pre- and post-treatment for outcome measures of the CSR, CGI, STAI-S, and STAI C-S. Repeated measures ANOVAs will be utilised to analyse pre-, mid-, and post-treatment scores on outcome measures of BDI-II, WHOQOL-BREF, PSS, PWM, and POM, and the BYI-2, KIDSCREEN-27, and CBCL/6-18-A. Prior to analysis, data will be screened and relevant assumptions checked. For repeated-measures ANOVAs, partial eta-squared will be calculated as the measure of effect size. Descriptive statistics and visual inspection of scatter plots will be reported session-by-session on the STAI-S and STAI-C-S. The feasibility measures of recruitment rates, completion rates, and adherence to study requirements will be determined by calculating the percentages of these measures throughout the study period.

Acceptability will be assessed utilising a mixed-methods approach. Descriptive statistics of participants' ratings on the quantitative measures of CSQ-8, THQ, and SRS will be reported. Qualitative interviews will be analysed utilising reflexive thematic analysis [74]. Accordingly, full interview transcripts will be repeatedly reviewed for data familiarisation; initial codes will be generated, followed by collating codes into themes, refining themes, and finally defining themes and sub-themes [74]. The qualitative analysis will be undertaken utilising an iterative review process in collaboration with supervisors MY, KL, and research collaborators.

Possible harms

Potential harms of being involved in the intervention and qualitative interviews will be explicitly outlined in the participant explanatory statements. The primary potential risk for participants is experiencing psychological distress during assessment, intervention, or interview procedures; however, this is not anticipated to exceed levels of psychological distress typically experienced in their daily lives. To minimise risk of harms, participants will be informed that they may freely withdraw their participation from any procedure at any time. Further, a range of psychological support options, including 24-h crisis support, will be discussed with participants prior to their involvement. All study clinicians and interviewers are experienced working with individuals with anxiety and other emotional problems, and in responding to distress. Adverse events to participants (e.g. significant symptom deterioration, suicidal ideation or attempt, reported or observed abuse) will be monitored routinely throughout the study. Any adverse events will be immediately reported to the principal study investigator, KL, and specific harm minimisation and prevention protocols will be enacted.

Ethics approval and dissemination

All study procedures will be conducted in accordance with the Monash University Human Research Ethics Committee approval (project ID 9781). Study results will be disseminated through peer-reviewed scientific journals. Two publications are expected, one reporting intervention and qualitative outcomes for parents and the second reporting these outcomes for child participants.

Discussion

This pilot study aims to investigate the feasibility and acceptability of an enhanced parent-child intervention which augments standard CBT to include treatment components targeting bidirectional maintenance factors of anxiety in parent-child dyads. In addition to evaluating the overall intervention feasibility and acceptability, this study will specifically explore participant responses to the novel intervention component of joint observational exposures. The results of this trial will inform the development and implementation of a future definitive RCT to evaluate intervention efficacy.

We anticipate that participating in the intervention will result in short-term improvements in symptomatology from pre- to post-treatment. Additionally, we expect that feasibility estimates for completion, recruitment, and adherence will be met, and results of outcome measures will enable an effect-size estimation for future RCT planning [53]. It is also anticipated that parent and child participants will prospectively and retrospectively find the overall intervention and joint observational

exposures acceptable. The qualitative component provides a unique opportunity to gain a rich perspective of consumers' experience and acceptability, to inform future planning and trialling of the enhanced intervention. The broader study implications may highlight the importance of targeting bidirectional maintenance factors in subsequent research exploring treatment of anxiety disorders in this population.

While recognising the potential implications of this research, the limitations must be acknowledged. A limitation of the proposed open-label design is that it lacks a control condition. Accordingly, we are unable to draw definitive conclusions regarding the short-term benefits of the intervention. Additionally, as a mixed-methods approach will be utilised to investigate intervention acceptability, qualitative findings cannot be generalised to a broader population. Nevertheless, despite the inherent limitations of the intended methodology, this research proposes an important initial step prior to conducting a definitive RCT [49] to determine the efficacy of the enhanced CBT intervention for anxiety in parent–child dyads.

Trial status

This research study was prospectively registered with the Australian New Zealand Clinical Trials Registry (ANZCTR): 12619000334101. Recruitment commenced November 2019; the intervention is expected to conclude late 2020. Following completion of the pilot trial, data collection for the qualitative component will commence. Following final data collection and analysis, outcomes will be prepared for publication in 2021.

Abbreviations

ADIS-5: Anxiety Disorders Interview Schedule for DSM-5; ADIS-IV-CP: Anxiety Disorders Interview Schedule for DSM-IV Child and Parent Version; BDI-II: Beck Depression Inventory; BYI-2: Beck Youth Inventory; CBCL/6-18-A: Child Behaviour Checklist Anxiety Subscale; CBT: Cognitive behavioural therapy; CGI-I: Clinical Global Impressions, Improvement; CGI-S: Clinical Global Impressions, Severity; CSQ-8: Client Satisfaction Questionnaire; CSR: Clinician Severity Rating; CSRS: Child Session Rating Scale; C-SSRS: Columbia-Suicide Severity Rating Scale; DSM-5: Diagnostic and Statistical Manual, 5th edition; PAM: Parental anxiety management; POM: Parental Overprotection Measure; PSS: Parental Stress Scale; PWM: Parent Worry Measure; RCT: Randomised controlled trial; SRS: Session Rating Scale; STAI-S: State-Trait Anxiety Inventory Child State Form; STAI-S: State-Trait Anxiety Inventory State Form; THQ: Therapy Helpfulness Questionnaire; WHOQOL-BREF: World Health Organization Quality of Life Scale Abbreviated Version

Authors' contributions

All authors contributed to the development and design of the study protocol. SG, CS, and KL developed the treatment manuals. SG and CS contributed equally to the participant recruitment, data collection, and drafting of this manuscript. PN and KL have been involved in the project management. MY and KL were involved in the critical revision of the manuscript. The authors read and approved the final manuscript.

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Availability of data and materials

The datasets generated and/or analysed during the current study will not be publicly available as consent will not be obtained from participants for this purpose.

Declarations

Ethics approval and consent to participate

Ethical approval for this protocol was provided by the Monash University Human Research Ethics Committee (project ID 9781). Participation in the trial is voluntary and signed written consent will be obtained from participants prior to involvement.

Consent for publication

Not applicable.

Competing interests

The authors declare that they have no competing interests.

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3.3 Open-Label Pilot Study Measures

Supplemental information about the measures utilised in the mixed-methods open-label pilot study methodology for parent participants are provided within this section. The information about study measures has been expanded upon here, as this detail was unable to be included in the protocol manuscript given the strict word limit applicable to publication. The assessment measures detailed in Sub-section 3.3.1 were used to determine participant eligibility for the pilot study, while the measures included under Sub-sections 3.3.2-3 were utilised to investigate quantitative feasibility and acceptability of the enhanced CBT intervention for parent participants.

3.3.1 Assessment Measures.

Anxiety and Related Disorders Interview Schedule for DSM-5 (ADIS-5; Brown & Barlow, 2013). Parents in the present study were assigned an anxiety disorder diagnosis based on the ADIS-5 assessment conducted prior to commencing the intervention. The ADIS-5 is a semi-structured diagnostic interview designed to assess the presence and severity of anxiety, mood, and other psychological disorders according to criterion symptoms designated by the DSM-5. The interview also includes screening questions relevant to other conditions such as eating and psychotic disorders. The ADIS-5 provides a dimensional assessment of key and associated features of the disorders assessed, as well as sufficient enquiry to determine a functional analysis of the disorder. While there is no published data on the psychometric properties of the ADIS-5 currently available, the previous version has demonstrated good to excellent inter-rater reliability for primary diagnosis, and adequate to excellent inter-rater agreement on differential diagnosis (Brown, Campbell, et al., 2001).

Columbia-Suicide Severity Rating Scale (C-SSRS; Posner et al., 2011). The C-SSRS is a semi-structured interview designed to assess past and current suicidal ideation and behaviours. The Baseline/Screening version was utilised during the initial pre-treatment

assessment of participants, while the Since Last Visit version was utilised during the post-treatment assessment. The Baseline/Screening assessment provides probes to determine the presence “yes” or absence “no” of current and past suicidal ideation or behaviours and includes ratings of ideation or behaviour severity. The Since Last Visit version follows a similar format, but instead captures suicidal ideation and behaviours since the most recent previous assessment. Along with being the gold-standard suicide assessment tool recommended by the United States Food and Drug Administration, the measure has shown to have good internal, concurrent, and predictive validity (Gipson et al., 2015; Madan et al., 2016).

3.3.2 Feasibility Measures

ADIS-5 Clinical Severity Rating (CSR; Brown & Barlow, 2013). Once a disorder is detected using the ADIS-5, clinicians assign a CSR which is a single item rating of symptom severity based on degree of distress and lifestyle impairment associated with the disorder. The CSR is rated on a scale from 0 = “none”, to 8 = “very severely disturbing/disabling”. Disorders that meet or exceed the threshold for a formal diagnosis are assigned a $CSR \geq 4$ = “definitely disturbing/disabling”, while sub-clinical or sub-threshold diagnoses are assigned a $CSR \leq 3$. In patients with two or more current DSM-5 disorders, the primary diagnosis is determined by the condition associated with the highest level of distress and impairment, with other co-occurring clinical diagnoses referred to as secondary or additional diagnoses.

Clinical Global Impressions (CGI; Guy, 1976) - Severity Scale (CGI-S) & Improvement Scale (CGI-I). The CGI rating scales are clinician assigned ratings of overall severity of symptoms (CGI-S), and changes in symptoms and functioning over time (CGI-I). The CGI-S is a seven-point scale ranging from 1 = “normal, not at all ill” to 7 = “among the most extremely ill patients”, specifying participant illness severity at the time of assessment

in comparison to others with the same diagnosis. The CGI-I is also a seven-point scale ranging from 1 = “*very much improved*” to 7 = “*very much worse*”, allowing clinicians to rate participant clinical improvement or worsening in comparison to baseline presentation. Participants who receive a rating of 1 = “*very much improved*” or 2 = “*much improved*”, are considered treatment responders (Hedges et al., 2009). The CGI has demonstrated good concurrent validity with other clinician-administered and self-report measures of anxiety (Hedges et al., 2009; Zaider et al., 2003).

State-Trait Anxiety Inventory – State Form (STAI-S; Spielberger et al., 1993).

The STAI-S is a 20-item self-report questionnaire designed to measure the concept of state anxiety. State anxiety refers to an individual’s actions in response to a perceived threat and is based on how the individual feels in the present. Items on the STAI-S scale are made up of descriptive statements like “*I feel nervous*” and are measured on a 4-point Likert-scale with responses ranging from 1 = “*not at all*” to 4 = “*very much so*”. Scores have a direct interpretation, where higher scores indicate higher state anxiety. The STAI-S has demonstrated excellent internal consistency (Barnes et al., 2002), as well as sensitivity to treatment effects (Fisher & Durham, 1999), and adequate convergent validity when compared with other state anxiety measures (Spielberger et al., 1993).

Beck Depression Inventory (BDI-II; Beck et al., 1996). The BDI-II is a 21-item self-administered screening tool used to determine recent depressive symptoms. Each item is presented as a list of four statements about a particular symptom of depression, with each statement arranged in increasing symptom severity. For example, for the symptom “*sadness*” the scale ranges from 0 = “*I do not feel sad*” to 3 = “*I am so sad or unhappy that I can’t stand it*”. The BDI-II is a commonly used outcome measure to demonstrate treatment efficacy and monitor treatment progress for patients with depression. The BDI-II is also used to assess patients diagnosed with depression, and to detect depression among the non-clinical

population. The BDI-II has demonstrated high internal consistency and retest reliability, as well as good convergent, discriminant, and construct validity (Beck et al., 1996; Segal et al., 2008; Wang & Gorenstein, 2013).

World Health Organisation Quality of Life Scale - Abbreviated Version (WHOQOL-BREF; Whoqol Group, 1998). A 26-item instrument measuring quality of life in four broad domains of physical health, psychological health, social relationships, and environment. The WHOQOL-BREF is administered in a self-report format, where participants rate responses about their life over the past two weeks on a 5-point scale. Scores for each domain are calculated by summing the point values for the questions corresponding to each domain and are then transformed to a 0–100-point interval to aid in interpretation. Higher scores indicate higher quality of life. The WHOQOL-BREF domain scores have demonstrated good discriminant and content validity, internal consistency and test–retest reliability (Trompenaars et al., 2005; Whoqol Group, 1998).

Parental Stress Scale (PSS; Berry & Jones, 1995). The PSS is an 18-item self-report scale measuring perceived stress related directly to the parenting role. The scale represents both positive themes of parenthood (emotional beliefs, self-enrichment, personal development) and negative themes (demands on resources, opportunity costs and restrictions). Items relate to the parent’s typical relationship with their child, and respondents rate the degree of agreement or disagreement with each statement (e.g., *“I feel overwhelmed by the responsibility of being a parent”*) on a 5-point scale. Responses range from 1 = *“strongly disagree”* to 5 = *“strongly agree”*, with higher scores indicative of greater stress. Psychometric studies of the scale indicate strong internal consistency and test-retest reliability, as well as robust convergent and concurrent validity (Berry & Jones, 1995; Zelman & Ferro, 2018).

Parent Worry Measure (PWM; Fisak et al., 2012). The PWM is a 34-item measure developed to assess the content of parent worries in relation to their children and the frequency in which parents experience these worries. Thirty-three of the items are presented by 5-point Likert scales, with response options ranging from 0 = “*never/almost never*” to 4 = “*always/almost always*”. Items were designed to assess the degree to which parents experience specific worries about their children, for example “*I worry about my child’s future*”. Initial development and testing of the measure has indicated strong reliability and good predictive validity, where high scores on the measure predicted anxiety in both parents and children (Fisak et al., 2012). Further, exploratory factor analysis revealed the measures items loaded on a single factor, indicating that parent worry about their children was a single global construct (Fisak et al., 2012).

Parental Over-Protection Measure (POM; Edwards et al., 2010). The POM is a 19-item scale designed to assess parenting behaviours that restrict a child’s exposure to situations perceived as threatening or harmful. Example items include “*I accompany my child on all outings*” and “*I keep a close watch on my child at all times*”. Items are answered on a 4-point Likert scale, where response options range from 0 = “*not at all*” to 4 = “*very much*”. High internal consistency for mothers and fathers, and strong test–retest reliability over 12 months was found for the scale (Edwards et al., 2010). Additionally, initial evidence for the validity of the scale was demonstrated through significant correlations between mothers’ scores on the POM and overprotective behaviour detected during an experimental parent–child physical threat task (Edwards et al., 2010).

3.3.3 Acceptability Measures

Client Satisfaction Questionnaire (CSQ-8; Hargreaves & Attkisson, 1978). The CSQ-8 is one of a limited number of standardised satisfaction measures available. The CSQ-8 is a brief self-administered 8-item measure of client satisfaction and is used widely across

health services. The measure uses four response choices, where “1” indicates the lowest degree of satisfaction and “4” the highest, for example for item “*How would you rate the quality of the service you have received?*”, 1 = “*poor*” and 4 = “*excellent*”. The scale generates a single total score ranging from 8 to 32 indicating overall satisfaction, with higher scores indicating greater satisfaction with services. Psychometric properties of the CSQ-8 indicate a high internal consistency, concurrent, and predictive validity, where higher reports of satisfaction are predictive of greater treatment completion (De Wilde & Hendriks, 2005; Hargreaves & Attkisson, 1978; Kelly et al., 2018).

Therapy Helpfulness Feedback Questionnaire (THQ; McLean & Hope, 2005).

The THQ examines client perceptions of therapy helpfulness and credibility in treatment-seeking individuals with a primary anxiety diagnosis. The THQ is used to assess the helpfulness of seven aspects of therapy at post-treatment including the therapist and other therapy components such as graded exposure work. Each aspect of treatment is rated on a 9-point scale from 1 = “*extremely hindering*” to 9 = “*extremely helpful*”, with an option of 5 = “*neither hindering nor helpful*” with a maximum possible scale score of 63. The scale was slightly modified to include parent’s ratings of the novel observational exposures utilised in the enhanced intervention. Therefore, participants utilising the modified scale rated helpfulness of eight aspects of therapy, increasing the total possible scale score to 72. Further, an additional five open questions eliciting feedback from parents related to their experience of participating in treatment with their child and engaging in joint-observational exposures, were added to the scale. The THQ has not been psychometrically validated, but has been utilised in past studies evaluating CBT interventions including the Norton (2012a) group tCBT for anxiety disorders (Graham-LoPresti et al., 2017; McLean & Hope, 2005; Smith et al., 2013).

Session Rating Scale (SRS; Johnson et al., 2000). The SRS is a simple, four-item visual analogue scale designed to assess key dimensions of effective therapeutic relationships. The four key dimensions assessed are respect and understanding, relevance of the goals and topics, client-practitioner fit, and overall alliance. Each key dimension is presented as a visual analogue scale each 10cm long, where clients indicate their perceptions by placing a mark along the scale. Negative responses are depicted on the left of the analogue scale, while positive responses are depicted on the right. For example, for the “*relationship*” analogue scale, the session is rated on a continuum from “*I did not feel heard, understood, and respected*” on the left to “*I felt heard, understood, and respected*” on the right. The total score can range from 0 to 40, with higher scores indicative of greater therapeutic alliance. Total scores lower than 36 are considered a source of concern. The SRS has demonstrated good concurrent and construct validity, as well as clinical practicability given the scale’s simplicity and brevity (Duncan et al., 2003).

3.4 Impacts to the Open-Label Pilot Study Due to the COVID-19 Pandemic

The worldwide COVID-19 pandemic had major implications on the mixed-methods open-label pilot study as described in the protocol manuscript. In particular, the piloting of the enhanced CBT intervention with parent participants was impacted. Restrictions to face-to-face research and clinical practice imposed in Melbourne, Australia during state-wide lockdowns occurring for much of 2020, significantly impacted upon the delivery of key components of the enhanced intervention. The practical, ethical, and confidentiality concerns related to the delivery of the intervention via online video-conferencing software during imposed lockdowns were considered. Particularly, the ability to conduct the key novel joint-observational exposures was not considered feasible via an online format. Therefore, under the restrictions imposed, the project as designed was not considered viable, and the intervention component of the pilot study was terminated prematurely. Originally, a sample

of ten parents was intended to obtain initial effect size estimates to determine the required sample size of the future RCT. Of the planned sample, a total of five parents were enrolled into the study with two completing the intervention, and three terminated following session four of the ten-session intervention. Consequently, the cessation of the pilot trial impacted significantly upon the collection of quantitative measures to estimate intervention feasibility and acceptability.

Fortunately, the qualitative acceptability component of the study was able to continue with minimal disruption. Instead, participant interviews were conducted online via a video-conferencing platform, utilising a modified participant pool. The original anticipated sample for the qualitative interviews were five parents who had completed the intervention, and five parents who had expressed interest in the intervention. However, given the early termination of the enhanced intervention piloting, three groups emerged: “*intervention-completed*” ($n = 2$), “*intervention-withdrawn*” ($n = 3$), and “*intervention-interested*” ($n = 5$). All other aspects of the qualitative acceptability interviews and methodology proceeded as outlined within the protocol manuscript.

Chapter 4

Acceptability Results

Chapter 4 – Acceptability Results

4.1 Preamble

The previously mentioned impacts of the COVID-19 pandemic resulted in the premature termination of the enhanced intervention pilot prior to achieving the required sample size. As a consequence of the study closure, considerable disruption was caused to the collection of the quantitative measures at defined study time points for participants who were enrolled at the time of termination. Accordingly, the incomplete data collection altered the planned reporting of quantitative self-report and clinician-rated measures used to address the thesis feasibility and acceptability aims. Consequently, the originally planned publication of the pilot results within a combined mixed-methods manuscript was no longer viable. Instead, the results of the feasibility and acceptability investigations are presented across two chapters.

Acceptability results are first presented in this chapter, and include a stand-alone qualitative manuscript prepared and submitted for publication to *Clinical Psychologist* in Section 4.2. Further, as the termination of the pilot trial impacted upon the quantitative self-report acceptability measures collected from participants post-intervention completion, additional acceptability results are included in Section 4.3. Finally, given the results pertaining to participant feasibility of the enhanced intervention were not considered publishable, the results obtained from quantitative feasibility measures are detailed in the next Chapter 5. The chapter will also include a preliminary discussion of the feasibility results prior to the integrated discussion of the thesis.

4.2 Paper 2 - Acceptability of an Enhanced Transdiagnostic CBT Intervention for Adults With Anxiety Disorders who are Parenting an Anxious Child

The results obtained from the semi-structured interviews conducted are presented below in the manuscript titled “*Acceptability of an enhanced transdiagnostic CBT*”

intervention for adults with anxiety disorders who are parenting an anxious child”. The manuscript was submitted to the journal *Clinical Psychologist* for publication in October 2021, and addressed the thesis aims related to investigating parents’ acceptability of the enhanced intervention via qualitative interview methods. The purpose of the article was to explore the retrospective and prospective acceptability of the enhanced intervention with parents who had participated in the intervention, and parents who were interested, but did not participate in the intervention. Parents’ actual and anticipated experiences of the enhanced intervention were also explored to understand if the intervention components could modify anxiety-maintaining parenting cognitions and behaviours. Additionally, the study also aimed to better understand parents’ perspectives of the bidirectional factors contributing to anxiety disorder maintenance in parent–child dyads. Aims were addressed through comprehensive qualitative data collection via semi-structured interviews and analysis using a reflexive thematic analysis.

The formatting of the manuscript is consistent with requirements set by *Clinical Psychologist*. However, for ease of reading, the manuscript pagination has been altered to remain consistent with thesis pagination.

The supplementary material referred to in this paper consists of the interview schedule that can be found in *Appendix A*.

Acceptability of an enhanced transdiagnostic CBT intervention for adults with anxiety disorders who are parenting an anxious child.

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Abstract

Objectives: Anxiety disorders are highly prevalent in adults, and commonly aggregate within families. Although cognitive behavioural therapy (CBT) is regarded as the most efficacious psychotherapy for anxiety disorders, remission rates are sub-optimal and broader systemic factors are typically not considered. The present study examined the acceptability of a modified transdiagnostic CBT intervention for adult anxiety that also targeted anxiety-maintaining parenting behaviours and cognitions in anxious adults parenting an anxious child. **Methods:** Ten anxious adults (M age = 39.5, SD = 2.9) parenting an anxious child (M age = 8.5 years, SD = 1.4) participated in qualitative interviews. Five parents who received the enhanced intervention and five parents who expressed interest in the intervention provided retrospective and prospective perceptions of intervention acceptability respectively, along with perspectives on bidirectional parent–child factors relevant to anxiety symptom maintenance. Responses were analysed using a reflexive thematic analysis. **Results:** Six themes emerged showing that the intervention was perceived as beneficial and effective for reducing the parents’ own anxiety as well as managing bidirectional anxiety maintaining factors in the parent-child dyad. **Conclusions:** Parents’ rich perspectives and experiences shed light on the aspects of intervention important to this underrepresented population. The targeting of an adult’s anxiety in a systemic context was valued by anxious adults parenting an anxious child, providing a rationale for broader intervention evaluation. Trial prospectively registered, ANZCTR1261900033410, 04 March 2019.

Key Words

Cognitive behavioural therapy, anxiety disorders, transdiagnostic, parent, acceptability.

Key Points

- Anxious parents with anxious children endorsed the acceptability of a systemically-informed transdiagnostic CBT intervention for clinical anxiety.
- The adaptations made to the original intervention were well-received, valued, and appeared relevant to the target population.
- Future trials to establish intervention efficacy and cost-effectiveness are indicated.

Introduction

Anxiety disorders are the most prevalent class of adult mental disorders (Baxter et al., 2013; Vos et al., 2016) and result in considerable distress and functional impairment (Beard et al., 2010; Olatunji et al., 2007). It is also well established that anxiety disorders aggregate in families, with intergenerational studies indicating that child anxiety disorders are associated with an up to five-fold increased risk of anxiety disorders in their parents (Cooper et al., 2006; Lieb, 2000; Percy et al., 2016). Further, parents of children with anxiety disorders report significant challenges, including increased distress and worry about their child, loss of income and increased expenses, strained family relationships, decreased parental adjustment, and impaired social interactions (Angold et al., 1998; Meltzer et al., 2011; Mendenhall & Mount, 2011; Thurston et al., 2011). Consequently, anxious adults parenting an anxious child represent a particularly vulnerable group of the community.

Cognitive behavioural therapy (CBT) is recognised as the most efficacious and cost-effective strategy for treating anxiety disorders (Heuzenroeder et al., 2004; Hofmann et al., 2012). However, recent meta-analytic evidence has indicated overall mean anxiety disorder remission rates of 51% in adults treated with CBT (Springer et al., 2018), suggesting significant scope for improvement of treatment outcomes. While several limitations have been identified, perhaps the most pertinent to parents of children with co-occurring anxiety is that wider systemic factors are typically not addressed during adult CBT treatment (Dummett, 2010), and may contribute to sub-optimal remission rates. Therefore, as parents are more likely to experience an anxiety disorder and additional impairment in the context of having a child with an anxiety disorder, there is a clear need for intervention in this population which considers broader systemic influences.

Existing theoretical models stress a reciprocal or bidirectional relationship between parent and child environmental factors in the development of anxiety disorders (e.g. Ballash

et al., 2006; Negreiros & Miller, 2014). Yet, much of the research has focused on the influence of parent factors on anxiety disorder treatment outcomes in children (Settipani et al., 2013). Specifically, randomised controlled trials (RCTs) examining CBT for child anxiety indicate that the presence of parental anxiety disorder can reduce the efficacy of child treatment (Bodden et al., 2008; Cobham et al., 1998; Cooper et al., 2008; Creswell et al., 2008; Hudson et al., 2014). There is also evidence that parenting behaviours commonly utilised by parents with anxiety disorders contribute to the development and maintenance of childhood anxiety. These parenting behaviours include parental rejection, accommodation, over-control, cognitions of child incompetence, modelling of anxiety and information transfer (Askew & Field, 2008; Lawrence et al., 2019; Lebowitz et al., 2013; Murray et al., 2009; Yap & Jorm, 2015). Mounting empirical evidence suggests that these parenting behaviours are in response to the presence of an anxiety disorder in the parent's child, rather than being driven by anxiety psychopathology in the parent alone (Hudson et al., 2008; Hudson & Rapee, 2009; Moore et al., 2004; O'Connor et al., 2020). Indeed, research investigating parenting behaviours and anxiety following CBT for child anxiety indicates that decreases in child anxiety are associated with decreases in negative and controlling parenting behaviours (Settipani et al., 2013; Silverman et al., 2009), and self-reported parent anxiety symptoms (Lavalley et al., 2019; Settipani et al., 2013; Silverman et al., 2009; Simon et al., 2011). Therefore, the impact of parenting an anxious child should be considered in the assessment and treatment of anxiety disorders in parents.

Research indicates that parents' cognitions and expectations about their child being vulnerable, alone, or in combination with beliefs that they themselves are incapable of managing their child's anxiety response, can lead to parenting behaviours such as over-control (Rubin et al., 1999). Additionally, parents of children with co-occurring anxiety disorders experience increased difficulty tolerating their children's negative emotions,

promoting anxiety-related parenting responses of over-control and anxiety modelling (Creswell et al., 2013). Accordingly, it is hypothesised that anxious cognitions related to child vulnerability and the parenting role drive anxiety-related parent emotions and behaviours in attempt to avoid distress in themselves and their child (Creswell et al., 2011; Lester et al., 2009; Moore et al., 2004; Udy et al., 2014). These parenting behaviours encourage future avoidance and anxiety in the child (Chorpita & Barlow, 1998), further reinforcing the avoidance response pattern of parental anxious cognitions and behaviours, maintaining anxiety within the parent (Beck & Clark, 1997). Therefore, along with addressing child anxiety disorder, an intervention targeting anxiety-maintaining parenting behaviours and cognitions could lead to improvements in anxiety disorder treatment outcomes for parents.

Subsequently, an enhanced CBT intervention outlined in the protocol by Galea et al. (2021) was developed. Given the frequent co-morbidity amongst adults with anxiety disorders (Brown et al., 2001), transdiagnostic treatment approaches are advantageous to facilitate intervention, regardless of the recipient's specific anxiety diagnoses. Thus, the enhanced intervention was an adapted version of Norton's (2012a) transdiagnostic CBT manual, which has demonstrated successful pre- to post-treatment outcomes in a number of open trials and RCTs (Norton, 2012b; Norton & Barrera, 2012; Roberge et al., 2020). The enhanced intervention follows the typical structure and content of adult CBT, including psychoeducation, cognitive restructuring, graded exposure tasks, and relapse prevention. However, systemically-informed enhancements were made through the addition of new content to address identified bidirectional maintenance factors of anxiety-related parenting behaviours and cognitions, delivered alongside concurrent treatment of child anxiety disorder via a parallel child-focussed manual.

The content in the adapted parent treatment protocol included psychoeducation on the bidirectional impacts of parental over-control and anxiety modelling. Over-control and anxiety modelling were selected as they have the greatest empirical support for associations with child anxiety (McLeod et al., 2007; Pinquart, 2017; Yap & Jorm, 2015). These parenting factors were also targeted because parent avoidance responses to child anxious distress are hypothesised to contribute to anxiety disorder maintenance in parents (Creswell et al., 2013; Rubin et al., 1999). Additionally, cognitive restructuring tasks were modified to identify and normalise anxiogenic cognitions related to their child and the parenting role. The intervention also included joint-observational graded exposure tasks that involved parents and children observing each other face fears. The joint-observational exposures were theoretically grounded in Bandura's (1977, 1986) social learning theory and designed to create opportunities for the parent to model brave behaviour to their child and to observe their child facing fears. The tasks aimed to challenge the parent's anxious cognitions about their child's ability to face fears and cope on their own, and reduce behavioural responses such as over-control.

To the best of the authors' knowledge, this is the first systemically-informed CBT intervention developed specifically for adults with anxiety disorders who are parenting an anxious child. In developing intervention, consumer acceptability is considered an essential component for intervention implementation and effectiveness (Byrne, 2019; Sekhon et al., 2017). Importantly, when an intervention is considered acceptable, consumers are more likely to adhere to treatment and obtain benefit from improved clinical outcomes. Therefore, the purpose of the current study was to explore participants' acceptability of the enhanced intervention, including the novel joint-observational exposure tasks. In the context of healthcare interventions, the theoretical framework of acceptability (TFA; Sekhon et al., 2017) defines acceptability as a multi-faceted construct that reflects the client's perception of

intervention appropriateness, based on anticipated or experiential responses to the intervention. The framework comprises seven constructs of acceptability. These include affective attitude, perceived effectiveness, burden, ethicality, intervention coherence, self-efficacy, and opportunity-costs. Further, qualitative research is increasingly utilised in studies developing complex interventions, as it can provide a rich understanding of participants' acceptability, while also allowing for collection of diverse perspectives related to retrospective and prospective acceptability (O'Cathain et al., 2015; Sekhon et al., 2017). Focusing on participant perceptions or experiences of an intervention can also establish the extent which a new intervention and its components meet the needs of the target population (Ayala & Elder, 2011).

With these principles in mind, the current study aimed to explore the acceptability of the enhanced intervention with parents who were interested in the intervention as well as those who participated in the intervention. Further, parents' actual or anticipated experiences of the enhanced intervention were explored to understand if the intervention components could modify anxiety-maintaining parenting cognitions and behaviours. Additionally, as research exploring the influence of child factors on parent anxiety disorders is limited, and bidirectional theory underpinned the adaptations included in the enhanced intervention, the present study also aimed to better understand parents' perspectives about the bidirectional factors that contribute to anxiety disorder maintenance in parent–child dyads.

Method

Participants

The sample comprised ten anxious adults of all whom identified as female ($M\ age = 39.5$, $SD = 2.9$) who were parenting an anxious child ($M\ age = 8.5$, $SD = 1.4$; 50% female gender). A purposive sampling approach was adopted and included the perspectives of five parents who had participated in the intervention pilot ("*intervention-involved*"), and five

parents who expressed interest in participating in the pilot (“*intervention-interested*”). The intervention-involved parent sample was drawn from a broader pilot study, where their children also completed a concurrent 10-week enhanced CBT protocol. Child dyad members received a parallel intervention to that received by their parents, with additional information on content provided in the *Enhanced CBT Intervention* section below.

Eligible parents were aged 18 years and above, and the primary carer of a child aged 6-12 years. Intervention-involved parents were previously enrolled in the pilot trial, and along with their child, had met criteria at baseline for a primary anxiety disorder diagnosis as defined by the *Diagnostic and Statistical Manual of Mental Disorders, 5th edition* (American Psychiatric Association, 2013). Intervention-interested parents could not have been previously involved in the intervention pilot, and had to endorse current anxiety symptoms for themselves and their child during eligibility screening conducted with a provisional psychologist (authors S.G or C.S). Dyads who presented with primary symptoms other than an anxiety disorder, insufficient English ability, or any other condition requiring immediate clinical prioritization (e.g., suicidality), were excluded from participation.

All parents lived with and were the biological parent of the child, with demographic information presented in Table 1. Intervention-involved parents met criteria for a minimum of two and maximum of four disorders ($M = 2.80$, $SD = 0.84$) as determined during pre-intervention assessment using the *Anxiety and Related Disorders Interview Schedule for DSM-5* (Brown & Barlow, 2013). The most common primary diagnosis was generalised anxiety disorder. Other disorders diagnosed included social anxiety, panic, major depression, and persistent depression.

Procedure

The trial was approved by the Monash University Human Research Ethics Committee, with informed consent obtained from all participants. Intervention-involved

parents were contacted to participate in the qualitative interviews 3-to-6-months post-intervention. Intervention-interested parents were recruited from the pool of participants who had initially enquired about partaking in the intervention pilot. Researchers contacted parents via phone and e-mail to inform them of the qualitative interviews and complete eligibility screening. Parents meeting eligibility were invited to participate, with interviews conducted as parents consented. All interviews were administered by S.G via an online video-conferencing platform. Interviews were on average 43 minutes in length, ranging from 30-58 minutes. Parents also participated in a short debrief following interviews, with recommendations for mental health support provided to two parents. Parents received an AUD\$30 gift-voucher as reimbursement.

Measures

Qualitative Interview

Two versions of the interview were developed, with topic questions summarised in Table 2 and complete interview schedules provided in the appendix. The main difference between interview versions were the wording of questions, with past tense used for intervention-involved parents, and future tense used for intervention-interested parents. In both versions, parents were provided with information about the intervention followed by questions related to the information presented. An accompanying presentation was also displayed during the interview summarising key information. The interview schedules were drafted by S.G and reviewed by co-authors for refinement, and to ensure open-ended questions were used. Finally, to ensure content was relevant and understandable to parents, the interview schedules were piloted twice prior to administration with two clinicians who had extensive experience working with parents and children. Based on feedback, minor changes to Question 2 were made to ensure non-judgemental phrasing.

Enhanced CBT Intervention

The intervention consisted of ten 60-minute treatment sessions occurring once per week, with an overview of session content included in Table 3. The intervention was fully manualised and followed a typical session structure of reviewing homework tasks, in-session skill building, and assignment of homework. Sessions were conducted individually with parents by S.G, apart from the joint-observational exposures which were shared activities involving the parent, child and corresponding parent and child therapists, S.G and C.S respectively. Children's perspectives of the concurrent enhanced intervention have been published in a related paper by Salvaris et al. (in press).

Data Analysis

Qualitative responses were analysed using a reflexive thematic analysis with a realist theoretical framework in attempt to reflect the true meaning of participants' experiences (Braun & Clarke, 2006). This methodology has previously been utilised to explore client experiences of psychotherapy (Binder et al., 2012). An inductive and semantic coding process was adopted, where identified themes were explicitly reported and strongly linked to the data, rather than to the researchers' theoretical and analytical preconceptions (Braun & Clarke, 2006; Patton, 2015). Interviews were initially transcribed with audio transcription software, followed by full transcription review to assess accuracy. Interviews were transcribed verbatim, except for names and locations which were replaced with alternative codes to ensure confidentiality. The thematic analysis was conducted in accordance with steps outlined by Braun and Clarke (2006), including: data familiarisation, initial code generation, collation of codes into themes, refinement of themes, and defining and labelling themes and sub-themes. QSR International's NVivo version 12 (QSR, 2019) was used during data analysis. The thematic analysis was conducted by author S.G with review and discussion of codes and themes with authors C.W, M.Y & K.L.

Results

Major disruptions caused by the COVID-19 pandemic resulted in the premature termination of the intervention pilot. Consequently, of the five parents providing retrospective feedback, two completed the intervention and three were withdrawn following session four. The three dyads withdrawn were referred to appropriate alternative services. Therefore, the intervention-involved group included two “*intervention-completed*” parents, and three “*intervention-withdrawn*” parents, with no change to the intervention-interested group. To differentiate between status, intervention-completed participant codes begin with the number 1, intervention-withdrawn codes begin with 2, and intervention-interested codes begin with 3. Responses clustered around six themes and subsequent sub-themes, as displayed in Table 4, to address if the intervention was acceptable, if components could modify anxiety-maintaining factors in parents, and better understand bidirectional factors contributing to dyadic anxiety disorder maintenance.

1. Parents had positive reactions to the enhanced intervention.

Overall, participant perceptions about the enhanced intervention appeared positive. All parents reported they would prospectively and retrospectively enrol in the enhanced intervention, as parents perceived the intervention as effective and were able to identify several benefits to the concurrent treatment format. Further, intervention-involved parents demonstrated additional insights into the benefits of the intervention.

1.1 Parents viewed the enhanced intervention as effective.

All parents stated that the intervention was or would be effective at reducing anxiety in themselves and their child, reflecting that the treatment components provided a framework to manage and improve anxiety symptoms. Additionally, three parents appreciated having a safe and judgement-free space to discuss anxiety related to parenting, which would or did contribute to reduced anxiety symptoms. Further, all intervention-involved parents described

reduced anxiety symptoms and increased functioning in themselves and their child post-intervention participation, noting greater management of anxiety and increased coping as a function of applying learned intervention skills.

It's changed our lives, I just can't be more grateful, it's helped me personally on so many levels (Participant 11 – intervention-completed)

1.2 Parents identified benefits of the concurrent treatment format.

Parents viewed the concurrent treatment format as a shared positive experience. Most parents indicated the concurrent format would help or helped to normalise anxiety, whereby parents would have or had a better understanding of their own and their child's anxiety experience. Parents also stated the concurrent format encouraged the dyad to work together to manage symptoms. Further, intervention-involved parents experienced increased communication between themselves and their child following the intervention. Specifically, concurrent participation allowed the development of a shared language and understanding of concepts, which increased communication, support, and problem solving within the dyad.

[The intervention] helped me develop language to talk to her, that we both understood... if she did bring something up, I could know what's been discussed with her and how to handle it, so I think that's awesome, really good. (Participant 22 – intervention-withdrawn)

1.3 Intervention-involved parents demonstrated additional insight into the benefits of the intervention.

All intervention-involved parents reported increased awareness of anxiety and anxiety-maintenance factors due to greater knowledge about their own and their child's anxiety, suggesting additional insight through experience. This increased awareness and knowledge allowed parents to implement learned strategies to reduce their own or their child's anxiety and to respond in an alternative way to their child. Additionally, three parents reported that the increased knowledge and subsequent learned strategies had been applied to

interactions with their other children, and/or shared with their partner, indicating possible transfer of knowledge and skills within families.

[The intervention was] a very good reminder to analyse our thoughts... and our reactions so we are more sensitive to the way we talk to [our child] ... those things we can pick up on much faster because the program brought it to our awareness (Participant 21 – intervention-withdrawn)

2. The joint-observational exposures triggered mixed emotional responses.

Parents endorsed both positive and negative experienced or anticipated emotions in response to the observational exposures, suggesting a complex or mixed feeling state. Most parents stated that observing their child would not cause any additional anxiety or distress because they would not need to respond to their child's anxiety while in the role of observer. Particularly, some parents reported feeling at ease about observing as a mental health professional was assisting their child during the task.

I know I was supposed to feel anxious, but I didn't, I found it fascinating because I got to watch and see without the expectation of needing to step in. (Participant 12 – intervention completed)

However, parents also reported anticipated or actual increased worry about their child's potential inability to cope with exposure tasks. Further, half of parents reported feelings of anxiety, frustration, or sadness if their child appeared distressed during the exposure task. Consequently, some parents reported wanting to protect and provide comfort to their child should they become distressed.

Some parents reported that being observed by their child would not/did not trigger additional anxiety, due to the distraction of their own exposure task. However, most parents also described feelings of anxiety and vulnerability related to 'failing' or being unable to complete the exposure task due to anxious distress. Of these parents, some also articulated

that ‘failing’ would trigger subsequent embarrassment, and/or worry about negative impacts of this on their child.

Mostly it's the fear of failure I guess, if I can't do it, then what would she think of me? Would she think less, or would she use that as an example for her [avoidance] in the future?

(Participant 32 – intervention-interested)

3. Joint-observational exposures were perceived as effective in modifying anxious parenting behaviours and cognitions.

Despite mixed emotional responses, all parents would participate in joint-observational exposure tasks and perceived them as beneficial overall. Parents viewed joint-observational exposures as an effective strategy to reduce anxiety in themselves and their child, specifically through opportunities to observe their child demonstrate adaptive coping, and to model adaptive coping themselves.

3.1 Parents valued the opportunity to observe their children demonstrate adaptive coping.

All parents viewed the actual or anticipated observation of their child’s exposure task(s) as an enjoyable activity, with some stating they would feel or felt proud observing their child facing fears. Parents reported that observing their child complete exposure tasks provided or would provide an opportunity to receive live feedback about their child’s progress, and to learn more about their child’s responses to anxiety and coping ability.

[Observational exposures were] powerful in the sense that it had long lasting impacts because I can forever recall what he is capable of... it was awesome, a very unique experience. (Participant 12 – intervention-completed)

3.2 Parents viewed joint-observational exposures as opportunities to promote adaptive modelling.

Parents reported being observed by their child would or did motivate greater modelling of adaptive anxiety coping during exposure tasks. This was partly driven by fears

related to the consequences of failure, but mostly motivated by parents wanting to provide a good example of coping to their children. The increased motivation to model adaptive coping during joint-observational exposures was described as helpful for parents to face their own fears and reduce anxiety, but also to increase motivation in their child while completing their own exposure tasks.

I guess I'll try to show her that I can do it... be a model for her and show her 'yes I can do it, so you can too'. (Participant 32 – intervention-interested)

4. Parents identified some barriers to treatment engagement, and suggested improvements.

Parents were in general satisfied with the intervention content, structure, and method of delivery. However, they also identified potential barriers to treatment delivery and provided suggestions for improvement to intervention structure. Location and appointment times were identified barriers to treatment delivery. Some parents preferred a clinic close to home or their child's school, and out of hours/weekend appointments due to work commitments, having to arrange care for other children, or concerns about their child missing school.

Parents also had suggestions for flexibility with the intervention structure. Two intervention-interested parents noted that flexibility for additional treatment sessions, and/or longer appointment times, would reduce concerns about their child's inability to build rapport and engage with intervention tasks. Additionally, two intervention-involved parents suggested similar flexibility to add more joint-observational exposure sessions and/or time to discuss and practice skills in session.

I wouldn't think any less if anything maybe you could stretch it out to 12-weeks and just have a bit of extra exposure therapy together. (Participant 12 – intervention-completed)

Finally, three intervention-involved parents discussed initial difficulties with shifting attention away from their child's anxiety and to their own personal experience of anxiety, as much of their time and energy had been previously directed toward their child's anxiety difficulties.

5. Anxious parents engaged in anxiety-related parenting behaviours.

Parents were able to identify anxiety-related parenting behaviours that they claimed increased anxiety in their child. Namely, parents described engaging in increased anxiety modelling, information transfer, and critical parenting when feeling anxious.

5.1 Parents' anxious thoughts and behaviours increased their children's anxiety.

All parents reported that when anxious, they displayed anxious behaviours and/or shared anxious thoughts which increased their child's experience of anxiety. Most parents described generalised shifts in behaviours when anxious, noting non-specific changes to body language and actions. Some were more specific, describing direct demonstration of fearful behaviours and cognitions in the presence of a feared stimulus, while others described more subtle behaviours such as asking multiple questions when feeling worried about their child. Some parents also said that their own avoidance resulted in similar avoidance behaviours in their child.

Probably me saying a lot of the time 'I'm not going to go' and I think that would be him, he would hear that, and then when he doesn't want to go somewhere or he's feeling anxious he might say to me, 'I don't want to go'. (Participant 33 – intervention-interested)

5.2 Parents' criticism towards their child increased when they were anxious.

Most parents noted shifts in their language and tone of voice when anxious, where they described becoming direct and terse in response to their children. Parents also reported raising their voice or yelling at their child when feeling anxious, but also in response to frustration at anxiety expressed in their child. Further, some parents reported being dismissive

of their child's anxious emotions by ignoring their child when feeling anxious, putting pressure on their child to complete tasks despite their child's anxiety, or minimising their child's emotions.

I get anxious about something, or I've got something in my mind, and he's not doing what he's supposed to, I'll tell him off... I'll just sort of snap at him. (Participant 35 – intervention-interested)

6. Anxiety in children elicited anxiety-related parenting responses and cognitions in their parent.

When describing experiences of anxiety within the dyad, parents identified ways in which their child's anxiety impacted upon them, including increasing anxiety-related parenting responses of over-control and accommodation, and increased anxious emotions and cognitions.

6.1 Parents responded to child anxiety by taking control and accommodating.

Some parents described responding to child anxiety with control and/or accommodation. Parents reported several strategies related to controlling situations or child responses, including allowing or encouraging avoidance, excessive planning, and taking over tasks. Parents also described accommodation of child anxiety through providing reassurance, answering on behalf of their child, and asking others to modify behaviours. Primarily, parents engaged in these behaviours to reduce or eliminate child distress, or manage their own anxiety in response to their child.

I just feel frustrated because I know that he can answer people...but he just won't... I answer for him most of the time... but if I don't acknowledge it, I feel like they're thinking it's even more rude because I'm not bringing up. (Participant 31 – intervention-interested)

6.2 Child anxiety increased anxious thoughts and feelings in their parent.

All parents described ways their child's anxiety increased their own anxious thoughts and feelings. Parents reported concerns about negative perceptions and judgements from others about their parenting ability, or about their child. Frequently, parents described worry related to their child's inability to cope when confronted with anxiety-provoking stimuli, and the potential future consequences of this. Some parents also reported experiencing worry about their own inability to effectively manage anxiety-provoking situations for their child. Subsequently, parents primarily described feeling anxiety in response to child anxiety, but also feelings of helplessness, sadness, and guilt.

He's so anxious to go to school, even though I know he's fine...I know he doesn't want to be there either, so then I just feel worried 'what's going to happen when I pick him up?' ... I know I have it [anxiety], and I know that it's worse when he's worse. (Participant 33 – intervention-interested)

Discussion

This study gathered rich and diverse perspectives on the acceptability of an adapted transdiagnostic CBT intervention for parents of children with co-occurring anxiety disorders. Parents' anticipated and experiential responses to the intervention were indicative of intervention acceptability, where the intervention was well received, and enhancements were valued. Responses were also consistent with a number of component constructs identified within Sekhon and colleagues' (2017) theoretical framework of acceptability (TFA). Parents' responses aligned with affective attitude and intervention coherence, relating to participant's feelings, and understanding of the intervention. Moreover, responses reflected self-efficacy and perceived effectiveness, which relate to confidence in the ability to perform required behaviours of an intervention, and the extent to which the intervention is likely to achieve its purpose. Thus, the alignment of participant responses with constructs of the TFA provides additional support for conclusions of intervention acceptability.

Parents also described treatment barriers and suggestions for improvement which were associated with the TFA component constructs of burden and opportunity costs (Sekhon et al., 2017). Consistent with experiences of parent carers who perceive their own well-being needs as a lower priority than their child's and less likely to express needs (Bourke-Taylor et al., 2012; Gilson et al., 2018), three parents described initial difficulty shifting attention from their child and toward their own anxiety experience. Accordingly, additional psychoeducation on the importance of prioritising parent mental health may assist parents with this transition. Further, feedback related to session structure could be addressed by extending the length of or including additional joint-observational exposure sessions. Either option would allow the dyad flexibility and further opportunities to practice techniques, while still remaining well within the parameters of typical CBT intervention structure (Kaczurkin & Foa, 2015). Finally, while comments related to location and appointments reflect the limited resources of the intervention pilot, clinic proximity and appointment availability are important recruitment and engagement considerations for future intervention trialling.

Parents also acknowledged worry related to child incompetence or personal failure during or in anticipation of joint-observational exposure tasks. Worry related to child incompetence is expected as negative evaluations are likely based on past learning of their child's response to anxiety-related stimuli (Kortlander et al., 1997; Udy et al., 2014), however, worry related to personal failure appears unique to the novel joint-observational component of the enhanced intervention. Though parents would still participate in joint-observational exposures, it may be important for clinicians to utilise existing intervention components such as cognitive restructuring in the lead up to observational exposure sessions to increase parent engagement and acceptability.

Exploration of participant experiences of the intervention provided initial indications that intervention enhancements may modify hypothesised anxiety-maintaining parenting

cognitions and behaviours. In line with the aim of avoidant-behaviour reduction during standard graded exposure (Andrews et al., 2018), it appears that child observation of parent-exposure tasks could motivate additional effort from parents to adaptively face anxiety-provoking stimuli, with parents also recognising this to be an effective strategy to reduce their anxiety. Further, consistent with the aims of social learning theory (Bandura, 1977, 1986), parents understood the importance of modelling adaptive coping to their children and the potential for this to increase subsequent anxiety coping in their child. Parents also viewed observational exposure tasks as an opportunity for feedback and learning about their child's anxiety coping ability. This finding suggests that through observation, parents could receive updated information about their child's coping ability which may challenge and modify previously learned negative evaluations of incompetence. As cognitions related to their child's inability to cope with anxiety-related stimuli are proposed to underpin parenting behavioural responses such as over-control in an attempt to avoid distress in themselves or their child (Creswell et al., 2011; Lester et al., 2009; Moore et al., 2004; Udy et al., 2014), modified cognitions may also lead to reduced anxiety-related parenting behaviours.

Further, intervention-involved parents appeared to have gained additional insight including increased knowledge and awareness of anxiety, resulting in the implementation of learned strategies, and altered parenting behavioural responses. As psychoeducation in CBT aims to provide the client with knowledge about their disorder to empower and motivate effective coping (Hedman-Lagerlöf & Axelsson, 2019), it is possible that parents' increased anxiety awareness and knowledge was a product of the additional psychoeducation on the bidirectional impacts of anxiety modelling and over-control. Conceivably, parents' increased awareness and knowledge could also have occurred via direct observation of their child's exposure tasks. Regardless, it appears that one or both adapted intervention components may have contributed to increased parent knowledge and awareness, subsequently modifying

parenting behaviours hypothesised to maintain anxiety disorders in parents. Further, parents shared knowledge and skills with their partner and/or applied these to interactions with their other children. While not directly related to parent anxiety-maintenance factors, it appears that the systemically-informed adaptations may confer additional familial and intergenerational benefits.

Parents' rich descriptions of dyadic anxiety experiences have also contributed to better understanding the bidirectional impacts of anxiety in parent-child dyads and concur with bidirectional theories underpinning the enhanced intervention adaptations. Consistent with bidirectional theories of anxiety development in parent-child dyads (e.g. Ballash et al., 2006; Spence & Rapee, 2016), parents were able to identify ways in which anxiety symptoms impacted upon and exacerbated anxiety disorders in dyad members. Specifically, findings were consistent with past research suggesting parents with anxiety disorders engage in parenting behaviours of over-control, accommodation, rejection, modelling of anxiety and information transfer (Askew & Field, 2008; Lawrence et al., 2019; Lebowitz et al., 2013; Murray et al., 2009). While it is frequently posited that parent psychopathology drives anxiety-related parenting behaviours, an important distinction in the present study is that parents endorsed engaging in over-control and accommodation in response to child anxiety, consistent with literature indicating child-to-parent effects (Hudson et al., 2008; Hudson & Rapee, 2009; Moore et al., 2004; O'Connor et al., 2020). Similarly, parents also described increased anxious emotions and cognitions related to their child's inability to manage anxiety-provoking situations, their own inability to manage their child's anxiety, and subsequent judgement of their parenting ability from others. Together, parents' responses to child anxiety support the hypothesis that anxious cognitions related to their child and parenting role can drive anxiety-related emotions and behaviours, which in turn can maintain anxiety disorders in the parent (Creswell et al., 2011; Lester et al., 2009; Moore et al., 2004;

Udy et al., 2014). Further, as much of the enhanced intervention's adaptations were based on bidirectional theory, the alignment of participants' experiences with the theoretical underpinnings of the enhanced intervention is promising, and suggests that the intervention components meet the needs of the target population. However, given that parents frequently reported engaging in critical parenting and accommodation, additional psychoeducation related to these behaviours could be important considerations for future iterations of the enhanced intervention.

Limitations

The present study's investigations were descriptive and exploratory to obtain initial indications of participant acceptability of a newly developed enhanced intervention. Nonetheless, several limitations can be identified. All participants were the biological mother of children involved in the study, impacting upon transferability of outcomes to other dyadic relationships such as fathers or other primary caregivers. While recruitment was open to all genders, only one father expressed interest in participating. The predominance of mothers in this study appears consistent with reported gender differences in anxiety disorder occurrence, where anxiety disorders are more common amongst females than males (Essau et al., 2018; Kessler et al., 2012), and amongst mothers of children with anxiety disorders than fathers (Cooper et al., 2006). Further, mothers are more frequently the primary caregiver of children in the region the trial was conducted (Wilkins et al., 2020).

The premature study closure caused by COVID-19 also impacted upon the intended participant sample of the present investigations. Rather than five parents who had completed the enhanced intervention pilot, only two parents completed the intervention and three were withdrawn following Session 4. Thus, study findings concerning participants' perceptions, in particular those related to intervention effectiveness, should be interpreted with this in mind. Nonetheless, the acceptability results presented were able to capture valuable views and

insights from a diverse group of parents who had completed, commenced, or expressed interest in the enhanced intervention.

A risk of bias is also acknowledged related to the dual-role of the primary author as both the clinician who delivered treatment to intervention-involved parents, and as the interviewer collecting acceptability data. Given this dual-role, participants may have been susceptible to a social desirability bias during the interviews. However, given the dual relationship was not a factor for half of the sample (i.e., intervention-interested parents), and feedback was consistently positive, it is unlikely social desirability had a major influence on the results. The dual role also increased potential for researcher bias during data analysis, however this risk was mitigated via researcher reflection, supervision, and reviewing codes with co-authors.

Conclusions

This study was conducted to explore the acceptability of the first systemically-informed transdiagnostic CBT intervention for parents of children with co-occurring anxiety disorders. Parents' rich descriptions and experiences indicate the enhanced intervention is valued, has the capacity to positively impact the adults' anxious cognitions and parenting behaviours, and contributes to an emergent literature base understanding bidirectional factors maintaining anxiety disorders in parent-child dyads. Taken together, the enhanced intervention demonstrates good integration of transdiagnostic adult anxiety disorder treatment approaches with systemic content. Thus, the enhanced intervention provides an alternative approach to standard CBT interventions, which may better meet the specific needs of adults with anxiety disorders who parent an anxious child. While findings are promising, further research to experimentally evaluate the treatment efficacy and cost-effectiveness of the enhanced CBT intervention is warranted. Given that the intervention appears acceptable to parents, if found to be efficacious, the enhanced intervention may address significant gaps in

the literature and provision of treatment for parents of children with co-occurring anxiety disorders.

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Abbreviations: CBT: cognitive behavioural therapy; RCT: randomised controlled trial; TFA: theoretical framework of acceptability.

Ethics Approval: Ethical approval for this protocol was provided by the Monash University Human Research Ethics Committee (project ID: 9781). The procedures used in this study adhere to the tenets of the Declaration of Helsinki.

Consent: Participation in the trial was voluntary with signed written informed consent obtained from all participants included in this study.

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Table 1

Participant Demographic Information: Means (M), Standard Deviations (SD), and Frequencies

	Intervention- Involved (n=5)	Intervention- Interested (n=5)	Combined (N=10)
Parent Age in years <i>M (SD)</i>	40 (1.2)	39 (4.1)	39.5 (2.9)
Employment Status:			
Employed ^a	4	4	8
Homemaker	1	1	2
Education Level:			
Secondary School	1	2	3
Vocational	3	2	5
Certificate	1	1	2
University			
Child Age in years <i>M (SD)</i>	8.8 (1.5)	8.2 (1.3)	8.5 (1.4)
Child Gender			
Female	3	2	5
Male	2	3	5

Note: ^aThe term employed encompasses casual, part-time, and full-time paid work.

Table 2

Interview Schedule Topic Questions

Q1. How does (child's name)'s anxiety contribute to your anxiety?*

Q2. Are there ways your anxiety could contribute to (child's name)'s anxiety?*

Q3. What would it be like for you to watch (child's name) face one of their fears?

What was it like to watch (child's name) face their fear(s)?

Q4. What would it be like for you to have (child's name) watch you face one of your fears in session? *What was it like for you having (child's name) watch you face your fear(s) in session?*

Q5. Knowing all that you know about the treatment program, would you still sign yourself and (child's name) up for the program? Why? *Having participated in the program, and knowing all that you know about the treatment, would you still have signed yourself and (child's name) up for the program? Why?*

Notes: *Same question delivered to intervention-interested and intervention-involved participants. Intervention-interested group questions are presented in normal text, and intervention-involved group questions are presented in italicised text.

Table 3*Overview of the Enhanced Intervention Parent Treatment Sessions*

Session	Content
1	<i>Psychoeducation:</i> Education on the development and maintenance of anxiety disorders, including explanation of the bidirectional influences of anxiety modelling. Also includes information about the treatment components and intervention rationale.
2-3	<i>Psychoeducation & Cognitive Restructuring:</i> Additional psychoeducation on the importance of thoughts as antecedents to anxiety and impacts of over-controlling parenting behaviours. Introduction to cognitive restructuring and skill practice.
4-6	<i>Joint-Observational Graded Exposure Tasks:</i> Parent and child dyads observe each other completing exposure tasks in accordance with their individual trigger and response hierarchies. Cognitive restructuring and review is completed pre- and post- observation and participation in exposure activities.
7-9	<i>Individual Graded Exposure Tasks:</i> Parents continue exposure activities as described above, but instead complete tasks individually without the observational component.
10	<i>Termination & Relapse Prevention:</i> Review of treatment and relapse prevention including psychoeducation related to maintaining successes, continuing to make progress, and managing setbacks.

Table 4*Reflexive Thematic Analysis Themes and Sub-Themes*

Theme 1:	Parents had positive reactions to the enhanced intervention.
<i>Sub-theme:</i>	<i>1.1 Parents viewed the enhanced intervention as effective.</i>
	<i>1.2 Parents identified benefits of the concurrent treatment format.</i>
	<i>1.3 Intervention-involved parents demonstrated additional insight into the benefits of the intervention.</i>
Theme 2:	The joint-observational exposures triggered mixed emotional responses.
Theme 3:	Joint-observational exposures were perceived as effective in modifying anxious parenting behaviours and cognitions.
<i>Sub-theme:</i>	<i>3.1 Parents valued the opportunity to observe their children demonstrating adaptive coping.</i>
	<i>3.2 Parents viewed joint-observational exposures as opportunities to promote adaptive modelling.</i>
Theme 4:	Parents identified some barriers to treatment engagement, and suggested improvements.
Theme 5:	Anxious parents engaged in anxiety-related parenting behaviours.
<i>Sub-theme:</i>	<i>4.1 Parents' anxious thoughts and behaviours increased their children's anxiety.</i>
	<i>4.2 Parents' criticism towards their child increased when they were anxious.</i>
Theme 6:	Anxiety in children elicited anxiety-related parenting responses and cognitions in their parent.

Sub-theme: 5.1 Parents responded to child anxiety by taking control and accommodating.

5.2 Child anxiety increased anxious thoughts and feelings in their parent.

4.3 Additional Acceptability Results

The following section reports the results of the qualitative acceptability investigations. In Sub-section 4.3.1 descriptive statistics related to intervention helpfulness and satisfaction are reported for the two participants who completed the intervention, with treatment alliance data reported for all five intervention-involved participants. Further, while not directly outlined within a specific thesis aim, Sub-section 4.3.2 details clinical observations noted during the use of the post-individual and post-observational exposure forms developed for the enhanced intervention. While these forms are not validated measures, nor were they intended to be, commentary has been included to provide additional information related to participants acceptability of the individual and novel joint-observational exposure tasks.

4.3.1 Participant Self-Report Ratings of Intervention Helpfulness, Satisfaction, and Treatment Alliance

For the two participants who completed the enhanced intervention, total score satisfaction on the CSQ-8 was high ($M = 32.0$, $SD = 0.0$), with both participants indicating satisfaction ratings of 32 out of a possible scale maximum score of 32. Perceptions of therapy helpfulness and credibility related to specific CBT components were also rated highly on the THQ ($M = 68.5$, $SD = 4.95$), with a total possible scale score of 72. Given the SRS treatment alliance measures were collected following each intervention session, a total of 32 observations ($n = 20$ from the two intervention completed parents; $n = 12$ from the three parents withdrawn following Session 4 of the intervention) were available to calculate the mean session rating score for all five participants involved in the intervention. Therefore, the participant mean total session rating score ($M = 39.04$, $SD = 1.57$) was above the scale cut-off of 36, indicating satisfactory treatment alliance.

4.3.2 Clinical Observations: Participant Use of Newly-Developed Post-Exposure Task

Forms

As detailed in the extended methodology (Chapter 3), two new post-exposure review forms were developed and included in the enhanced parent intervention, one a post-individual exposure form, and the other a post-observational exposure form. These forms were added to help the parents identify their own and their child's use of adaptive behaviours during exposure tasks and encouraging reflection upon any new evidence that might challenge prior anxious assumptions and cognitions. Following their involvement in individual and joint-observational exposures, parent responses to the review form questions were discussed with the treating clinician, and key points of the discussion were written on the forms during the session. Subsequently, the following paragraphs detail the general contents of the responses recorded on the post-exposure review forms.

Post-individual exposure review forms were completed by all participants. Given the impacts of the premature study closure, intervention-completed participants engaged in six exposure reviews each ($n = 12$), and intervention-withdrawn participants engaged in one exposure review each ($n = 3$). Unfortunately, data was missing for two of three intervention-withdrawn participants. Therefore, given the significant disparity between available data for the two groups, the general themes recorded on post-individual exposure review forms are discussed only for the intervention-completed group. Parents noted that through facing anxiety rather than engaging in avoidance, they could meet their own goals even when it was uncomfortable to do so. Further, parents displayed insight into the anxiety maintenance role of anxious cognitions, explaining that joint exposure tasks were less anxiety-provoking than the original catastrophic thoughts identified during pre-exposure cognitive restructuring tasks. Further, parents described that their ability to manage and cope during anxiety provoking

situations was considerably greater than they had originally expected and perceived that using strategies such as cognitive restructuring contributed to their coping ability.

Post-observational exposure forms also prompted parent reflection following the observation of their child's exposure tasks. All parents completed post-observational exposure reviews in-session and there were no missing data points. Intervention-completed participants each engaged in three observational exposure reviews each ($n = 6$), and intervention-withdrawn participants engaged in one observational exposure review each ($n = 3$). When exploring new evidence about their child post-exposure, all parents referred to their child's coping during anxiety provoking situations, but comments about child ability varied. Three parents described their child's coping as better than expected, one stating their child coped as expected, and one reported that their child coped worse than expected. However, all parents acknowledged that their child was able to successfully complete the task despite periods where they appeared visibly anxious. Further, parents identified that their own expectations about their child's ability and subsequent feelings of anxiety could place additional pressure on their child when facing fears. Most parents also recorded that through observing their child cope in exposure tasks, they did not need to 'step in' or respond to their child's anxiety as they had originally thought.

Chapter 5

Feasibility Results

Chapter 5 – Feasibility Results

5.1 Preamble

The current chapter presents the results of the feasibility investigations. Section 5.2 opens with a brief explanation of the impacts to data analysis and reporting due to the COVID-19 pandemic, followed by the presentation of the feasibility results in line with the original aims of the thesis in Sub-sections 5.2.1-5. Following on from this, as feasibility results were not considered publishable, a preliminary discussion of the feasibility results is included in Section 5.3 prior to the thesis integrated discussion presented in Chapter 6.

5.2 Investigations of Intervention Feasibility

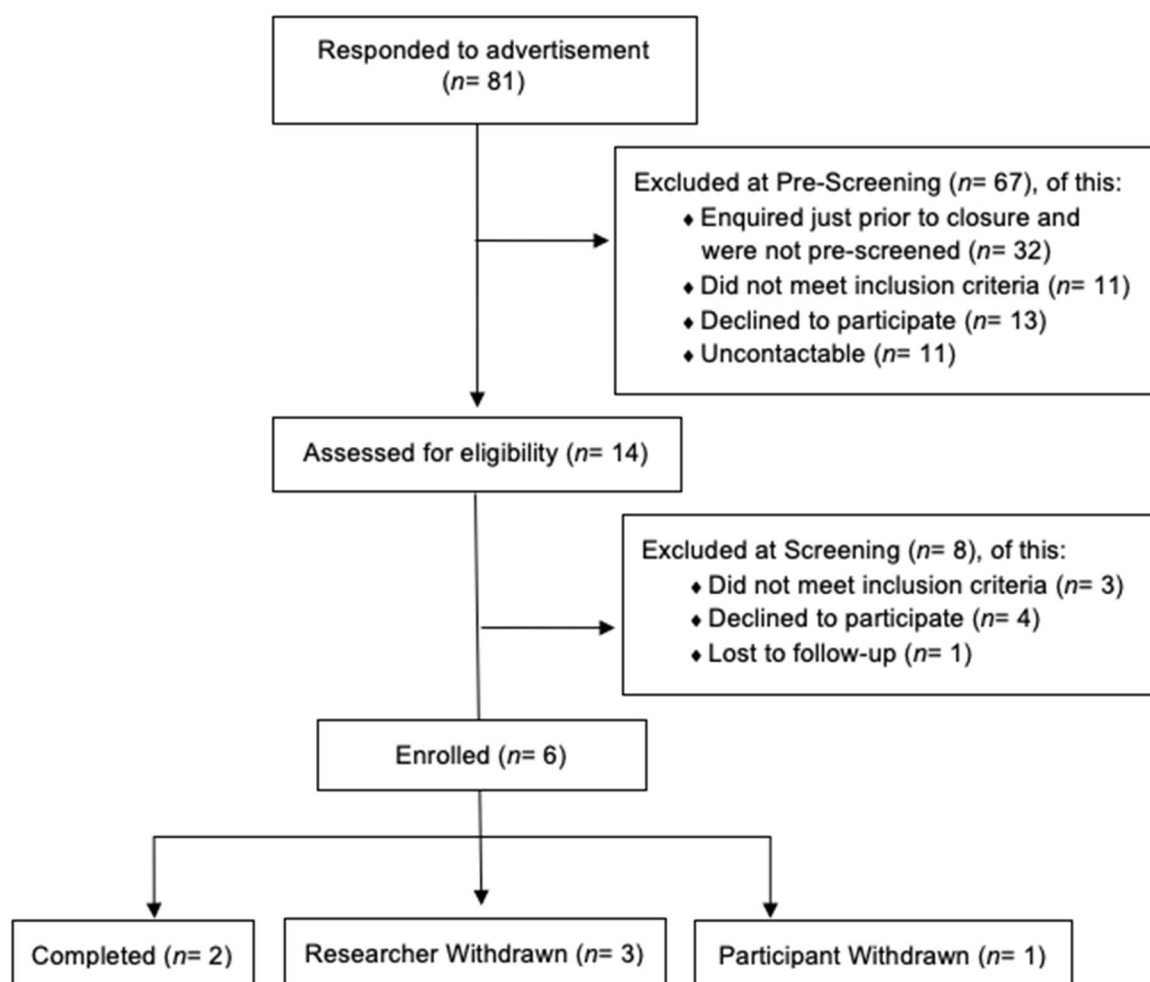
Investigations of intervention feasibility were the most impacted by the aforementioned premature pilot study closure, resulting in a smaller and insufficiently powered sample. Consequently, the reduced sample size and resulting insufficient data collection meant that the planned statistical analyses could not be performed. Subsequently, the first feasibility aim which included calculations of recruitment rate, completion rate, and adherence, are reported as frequencies and percentages in Sub-sections 5.2.1-3, based on the smaller sample and reduced study enrolment period. Additionally, the partial eta-squared effect size calculations planned to estimate the sample size for a future RCT could not be conducted as a minimum sample of 10 participants was required. The final feasibility aim to determine initial indications of participants intervention response via calculations of pre- to post-symptom change on a range of measures was also unable to be conducted as planned. Instead of the planned statistical analysis of repeated-measures ANOVAs, descriptive statistics of the clinician-rated and self-report measures are presented within Sub-sections 5.2.4-5 for the participants enrolled in the pilot study.

5.2.1 Recruitment Rate

Eighty-one parents responded to the pilot study advertisement during two recruitment waves. A total of 49 parents responded to the initial recruitment wave conducted in November 2019, while 32 responded to the second which occurred in early March 2020, just prior to the initial COVID-19 outbreak in Australia. The participant flow diagram detailing the recruitment profile for the pilot study is shown in Figure 1.

Figure 1

CONSORT Participant Recruitment Flow Diagram



Note: From “CONSORT 2010 statement: Extension to randomised pilot and feasibility trials”, by Eldridge, S. M., Chan, C.L., Campbell, M. J., Bond, C. M., Hopewell, S., Thabane L, and Lancaster, G. A., 2016, *BMJ*, 355, article number i5239, (<https://doi.org/10.1136/bmj.i5239>)

Forty-nine parents responded to recruitment wave one. Of these parents, 11 did not meet inclusion criteria during initial telephone pre-screening. Eligibility requirements were that parents were aged 18 years and above, the primary carer of a child aged 6-12 years, and both members of the dyad met diagnostic criteria for a current primary anxiety disorder. Dyads who presented with primary symptoms other than an anxiety disorder, insufficient English ability, or any other condition requiring immediate clinical prioritization (e.g., suicidality) were excluded from participation. Of participants ineligible at pre-screening due to study exclusion criteria, common reasons included: the child's age was outside of study requirements, the child was diagnosed with a neurodevelopmental disorder interfering with study requirements such as an inability to read, write, or communicate verbally, and the parent and/or child were diagnosed with and/or experiencing symptoms related to a primary disorder other than an anxiety disorder. Additionally, 13 parents declined further participation and 11 were unable to be contacted by researchers despite multiple attempts at contact via phone and e-mail. Parents who declined provided reasons including an inability to attend weekly appointments during the intervention period, inconvenient appointment times or clinic location, or an inability to attend appointments due to living regionally or interstate.

Of the parents who responded to the second wave of recruitment, some were provided initial information about the study over the phone, but none were able to be pre-screened or screened for eligibility due to the aforementioned COVID-19 restrictions. Further, parents who were initially provided study information requested a pause on any potential participation due to uncertainty caused by the pandemic. Consequently, the parents who enquired during the second recruitment wave were initially informed via e-mail that study participation had been placed on hold, followed by an updated e-mail that recruitment had closed due to the pandemic.

The feasibility measure related to recruitment rate was intended to be determined by the proportion of dyads who met the intervention eligibility criteria and consented to enter the trial, with a success threshold for recruitment rate set at $\geq 70\%$. A total of 14 parents and their children were invited for assessment to determine eligibility for the intervention pilot study. Screening for intervention eligibility was determined via an in-person interview conducted over two sessions, including diagnostic and risk assessments. Of those parents assessed: three were excluded as their child did not meet the primary anxiety disorder diagnostic criteria, four declined participation and one was lost to follow-up prior to determination of eligibility, and six consented to participate in the enhanced intervention pilot. Of those who declined participation prior to determination of eligibility, three declined due to limited or conflicting appointment availability, and one due to separation distress experienced by their child during assessment. Of the six parents meeting study eligibility, 100% consented to participate in the pilot study.

5.2.2 Completion Rate

To determine completion rate, it was proposed that the proportion of parents that consented and remained enrolled at the end of the defined study period would be calculated, with the success threshold set at $\geq 80\%$. A total of six participants consented to participate in the pilot study. Two participants completed the intervention, three participants were prematurely terminated by study researchers following Session 4 of the intervention, and one participant withdrew from the pilot study prior to Session 1 of the intervention due to clinic distance and conflicting appointment availability. In particular, the parent resided regionally and preferred weekend appointments, which were not available. Therefore, while not all participants completed the intervention in line with the defined study period, at the time of the intervention pilot closure the completion rate was 83%.

5.2.3 Adherence to Study Requirements

Adherence to study requirements included completion of homework tasks, as well as completion of clinician and self-report questionnaires at defined assessment time points. For both adherence measures, the success threshold was set at $\geq 80\%$. For the five parents involved in the intervention, adherence was calculated based on the total observations for each parent during their period of enrolment. For homework adherence this was the total number of homework tasks completed for each intervention session where homework was assigned, and for questionnaire adherence it was the total number of questionnaires completed at each study assessment time point the parent was enrolled.

Homework was assigned following each intervention session beginning at Session 1, except for Session 10 where homework was not assigned. Therefore, for participants who completed the intervention, the maximum possible homework tasks they could each complete was $n = 9$, and for those who were withdrawn was $n = 4$. Therefore, based on these occurrences, total homework adherence for the sample was 89%. Questionnaires were administered across each intervention session, as well as at pre- and post-intervention timepoints. For participants who completed the intervention, a maximum number of questionnaires each could complete over the entirety of their enrolment was $n = 44$, and for those withdrawn it was $n = 16$. Based on these maximum occurrences, the total questionnaire adherence rate for the sample was 96%.

5.2.4 Diagnostic Profiles of Participants: Clinician-Rated Measures of Symptoms and Functioning

Participants included in the piloting of the enhanced intervention included five adult parents (M age = 40, $SD = 1.2$; 100% female gender) of children aged between 6-12 years (M age = 8.8, $SD = 1.5$; 60% female gender) who both met criteria for a principal anxiety disorder diagnosis according to the DSM-5 (APA, 2013). Of the parents involved in the

intervention pilot, Table 1 provides a breakdown of pre- to post-treatment scores on the clinician-rated diagnostic questionnaires. The sample was highly comorbid, with all parents meeting criteria for at least two and maximum of four disorders ($M = 2.80$, $SD = 0.84$). The most common primary disorder diagnosis was generalised anxiety disorder ($n = 5$), with secondary anxiety diagnoses being social anxiety disorder ($n = 3$) and panic disorder ($n = 2$). Three parents also met criteria for a secondary depressive disorder of major depression ($n = 2$), or persistent depression ($n = 1$). At pre-treatment, primary disorder severity as rated on the CSR for the sample was ‘severe’ ($M = 6.80$, $SD = 0.84$).

Of the two parents who completed treatment, participant 11 achieved remission of primary and secondary disorder diagnoses at post treatment as indicated by a $CSR \leq 3$. Participant 12 achieved symptom reduction of their primary anxiety disorder diagnosis, and remission of a secondary depressive disorder. However, a change in secondary social anxiety and panic disorder diagnoses occurred between pre- and post-treatment for parent participant 12, as panic disorder symptoms at post-treatment were better explained by a diagnosis of social anxiety disorder with a panic attack specifier. Therefore, symptom change is unclear for this participant’s secondary anxiety disorders. For both participants who completed the intervention, a reduction in pre- to post-treatment symptom severity was found on the CGI-S. Additionally, improvement on the CGI-I at post-treatment was rated as ‘very much improved’ for parent participant 11 and ‘much improved’ for 12, indicating treatment response.

Table 1

Intervention-Involved Participant Diagnosis and Pre- to Post-Treatment Clinician Rated Diagnostic Scores

Participant	Pre-Treatment			Post-Treatment			
	Diagnosis	CSR	CGI-S	Diagnosis	CSR	CGI-S	CGI-I
11	GAD	7	6	GAD	2	2	1

	PD	6		PD	2		
	MDD	6		MDD	1		
12	GAD	8	6	GAD	5	4	2
	SAD	6		SAD w/Panic	6		
				Specifier ^a			
	PD	6		-	-		
	MDD	5		MDD	2		
21	GAD	7	6				
	SAD	6					
	PDD	5					
22	GAD	6	4				
	SAD	5					
23	GAD	6	5				
	SAD	6					

Note. To differentiate between participant status, intervention-completed participant codes begin with the number 1 and intervention-withdrawn codes begin with 2. List of table abbreviations: CSR=Clinician Severity Rating; CGI-I=Clinical Global Impression – Improvement; CGI-S=Clinical Global Impression – Severity; GAD=Generalised Anxiety Disorder; MDD=Major Depressive Disorder; PD=Panic Disorder; PDD=Persistent Depressive Disorder; SAD=Social Anxiety Disorder.

^aChange in diagnostic category based on symptom assessment at post-treatment.

5.2.5 Participant Symptom Profiles as Rated on Self-Report Measures

Parent self-report of symptom measures are detailed in Table 2. For parents who completed the intervention, scores on the STAI-S at baseline ($M = 58.0$, $SD = 7.1$) exceeded

clinical cut-off and remained stable between pre- and mid-treatment, before decreasing at post-treatment. Mean post-treatment scores on the STAI-S at post-treatment ($M = 32.0$, $SD = 8.5$) were below the recommended cut-off score of 40. Scores on the BDI-II also decreased across treatment time, with the difference in pre-treatment ($M = 33.5$, $SD = 5.0$) and post-treatment scores ($M = 6.5$, $SD = 3.5$) indicating an average reduction of 27 points following treatment. Additionally, quality of life on all domains of the WHOQOL-BREF showed improvement from pre- to post-treatment, with a percentage increase of 46.9% demonstrated across total domain scores at post-treatment. Parenting responses collected using the PSS, PWM, and POM are also provided in Table 2, however meaningful interpretation is limited due to missing data at key pre- and post-treatment timepoints. While results are unable to be determined for these measures, there appears to be significant variability in participant responses on the PWM and POM.

Table 2

Self-Report Questionnaire Mean (M) and Standard Deviation (SD) Scores at Pre-, Mid-, and Post-treatment

Measure	Pre			Mid		Post	
	<i>n</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
<i>STAI-S</i>							
Intervention-Involved ^a	5	51.2	11.6				
Intervention-Completed ^b	2	58.0	7.1	60.0	8.5	32.0	8.5
<i>BDI-II</i>							
Intervention-Involved	5	23.8	16.4				
Intervention-Completed	2	33.5	5.0	29.0	11.3	6.5	3.5
<i>WHO-QOL-BREF</i>							
Intervention-Involved	5						

Physical Health		57.6	13.4				
Psychological		38.8	22.7				
Social Relationships		46.2	23.8				
Environment		66.6	18.5				
<i>Intervention-Completed</i>	2						
<i>Physical Health</i>		56.0	0.0		72.0	12.7	
<i>Psychological</i>		25.0	8.5		59.5	5.0	
<i>Social Relationships</i>		31.0	0.0		62.5	9.2	
<i>Environment</i>		75.5	17.7		81.5	9.2	
<hr/>							
<i>PSS</i>							
Intervention-Involved	5	50.2	8.2				
<i>Intervention-Completed</i>	2	54.5	12.0	52.5	6.4	-	-
<hr/>							
<i>PWM</i>							
Intervention-Involved	4	44.5	19.5				
<i>Intervention-Completed</i>	2	-	-	55.0	26.9	46.5	30.4
<hr/>							
<i>POM</i>							
Intervention-Involved	4	30.3	16.5				
<i>Intervention-Completed</i>	2	-	-	16.0	18.4	10.0	9.9

Note. List of table abbreviations: BDI-II=Beck Depression Inventory Second Edition; STAI-S=State-Trait Anxiety Inventory State Form; POM=Parent Overprotection Measure; PSS=Parental Stress Scale, PWM=Parent Worry Measure; WHO-QOL-BREF= World Health Organisation Quality of Life Scale Abbreviated Version.

^aGiven the reduced number of participants, questionnaire data for participant groups is presented as intervention-involved, which is the combination of intervention-completed and intervention-withdrawn participants. ^bIntervention-completed participant data is a sub-sample

of the intervention-involved group and is presented separately in italics to demonstrate change in score across timepoints for participants who completed the intervention. -Indicates missing data.

5.3 Brief Discussion of the Enhanced CBT Intervention Feasibility Results

As mentioned above, the impacts to the sample size caused by the premature termination of the enhanced intervention pilot resulted in an inability to conduct the planned statistical analyses and publish the feasibility results. Thus, the following section provides a discussion of the feasibility outcomes in accordance with the thesis aims that would have otherwise occurred within a prepared manuscript.

5.3.1 Attendance Rates

Both measures of attendance rates exceeded the success thresholds set, where recruitment rate was recorded as 100%, and completion rate was 83%. When exploring attendance rates within the adult CBT literature, completion rates are the most frequently reported measure of engagement. In a recent meta-analysis comparing treatment outcomes of CBT and tCBT, mean completion rates of 75% were reported across 64 studies investigating CBT outcomes, and 72% across 14 tCBT studies (Pearl & Norton, 2017). Similarly, in a recent open trial examining the effectiveness of an individual adaptation of the Norton (2012a) group protocol, the reported completion rate was 72%, and mean session attendance of 10.8 ($SD = 2.3$) was reported for the 12 session protocol (Pearl & Norton, 2020).

Similar attendance rates were reported in the three studies published to date which included the treatment of anxiety in parents as an adjunct to child CBT for anxiety disorders. Across the three studies, reported engagement rates ranged from 75-88% for recruitment, 88-91% for completion, and 81-97% for session attendance (Cobham et al., 1998; Creswell et al., 2020; Hudson et al., 2014). Interestingly, research has indicated that parents exhibit

higher rates of engagement in programs involving both parents and children as opposed to parent-only formats (Novick et al., 2020). Thus, it is possible that in the current study and past research, parents appear more engaged as child treatment is contingent upon their continued involvement in the intervention. Regardless, the incomplete data collection and small number of participants in the current study mean that direct comparisons cannot be drawn. While the sample is small, it appears that parents are interested in the enhanced intervention, with the initial strong attendance rates suggesting that a larger sample could be recruited for a future trial. Additionally, once enrolled, parents appear to remain engaged in the intervention.

In addition to investigating attendance rates, exploring reasons why participants withdraw or do not engage after expressing interest arguably provides important information about initial participant engagement, but these details are frequently omitted in the literature (Finan et al., 2020). Overwhelmingly, the reason for disengagement of parents in the present study related to inconvenient clinic locations and appointment availability. Similar program-specific obstacles have been identified by parents in other studies investigating parent engagement in child treatment. For example, two meta-analyses of qualitative research investigating parent engagement during parent training programs aimed at improving child mental health concluded that parents were more willing to engage in interventions offered in a convenient time and place, and also identified barriers to program access due to time constraints related to work, or having other children (Koerting et al., 2013; Mytton et al., 2014). Other quantitative studies investigating parent engagement in child preventative programs and community mental health settings also identified factors such as transportation, scheduling of intervention sessions, and program location as barriers to program engagement (Birkin et al., 2008; Spoth et al., 1996; Stevens et al., 2006). Therefore, while the populations and interventions offered in these previous studies differ from that of the present research,

clinic location and appointment availability are important factors for consideration to increase parent engagement in any future trialling of the enhanced intervention.

5.3.2 Program Adherence

Good adherence to study requirements was indicated, where the success threshold of 80% was exceeded on both measures of questionnaire and homework completion for the five parents involved in the intervention. While not directly related to any specific treatment component of the enhanced intervention, questionnaire completion adherence can be used to ascertain participant burden associated with data collection (Ulrich et al., 2005). Further, homework completion rates are captured to represent client engagement with specific therapeutic activities, but also as homework facilitates a range of mechanisms important for therapy (LeBeau et al., 2013). Thus, in-between session homework completion is widely considered fundamental to adult CBT treatment outcome, with meta-analytic reviews demonstrating robust effect sizes for the relationship between homework adherence and treatment outcome (Kazantzis et al., 2010; Kazantzis et al., 2016; Mausbach et al., 2010).

Unfortunately, homework and questionnaire adherence rates were not reported in past similar research investigating the Norton (2012a) protocol, or the three studies including treatment of parent anxiety as an adjunct to child CBT interventions. Additionally, given the significant variability related to the measurement of adherence ratings based on study specific requirements (Kazantzis et al., 2017) in combination with the small number of participants in the current study, it is not meaningful to compare the results from the present study with those reported in past CBT research. It is possible the high adherence rates achieved in the present study were influenced by strategies to encourage questionnaire and homework completion. Namely, clinicians provided a strong rationale for homework and questionnaire completion, allocated additional time to complete questionnaires prior to intervention sessions, and utilised troubleshooting to overcome obstacles preventing homework and

questionnaire completion. Nonetheless, the adherence rates recorded suggest the study requirements did not contribute to increased participant burden, and that parents engaged with intervention content outside of the intervention sessions, potentially contributing to improved treatment outcomes.

5.3.3 Preliminary Indications of Participants' Intervention Response

Preliminary indications of participants' intervention response on self-report measures for the two participants who completed the intervention were encouraging. Pre- to post-treatment reductions were found for scores on the STAI and BDI-II, along with increases to all domain scores of the WHOQOL-BREF, indicating a reduction in anxiety and depression symptoms and improved quality of life and functioning post-treatment. For anxiety symptoms, post-treatment STAI scores were below clinical cut-off, and similar to scores reported of non-clinical samples of adults (Julian, 2011; Roemer, 2001). Similarly, the average score on the BDI-II at pre-treatment was considered in the '*severe*' range, while the post-treatment average score was considered within the '*minimal*' range (Beck et al., 1996). Additionally, post-treatment BDI-II scores were also consistent with average scores previously reported in non-clinical samples (Wang & Gorenstein, 2013). Regarding quality of life, post-treatment domain scores for physical health and environment were consistent with general norms of the WHOQOL-BREF. However, domain scores on psychological wellbeing and social relationships were below general norms suggesting some continued functional impairment on these domains (Hawthorne et al., 2006).

Of diagnostic severity as measured by the CSR, remission of primary anxiety disorder and additional anxiety and depression diagnoses indicated by a $CSR \leq 3$ were achieved for one participant. The second participant achieved symptom reductions on their primary anxiety disorder, remission of a comorbid major depressive disorder, and no change in symptoms of an additional anxiety diagnosis. Beyond the intervention, many

sociodemographic and clinical factors have been identified as impeding remission following treatment with CBT such as gender, disorder severity and comorbidity (Mululo et al., 2012; Schat et al., 2013). Another identified factor, particularly in those with generalised anxiety disorder, are stressful life events (Francis et al., 2012), therefore it is probable that completing treatment during a pandemic lockdown may have impacted on post-treatment outcomes for the participant who did not achieve remission. Nonetheless post-treatment reductions in clinician rated symptom severity on the CGI-S, and increased improvement on the CGI-I were found for both participants. In particular, the scores of ‘*very much improved*’ and ‘*much improved*’ on the CGI-I assigned to the two parents who completed the intervention were indicative of treatment responder status. Further, there were reductions in CSR ratings for both participants across all but one comorbid diagnoses. This result is consistent with the aims of tCBT protocols, but also previous estimates which suggest approximately 70% comorbidity remittance following treatment utilising tCBT (Norton et al., 2013). However, due to the small sample and limited participant data, inferences cannot be established, and further investigation is required to determine short-term intervention response.

5.3.4 Feasibility Conclusions

Given the impacts of the COVID-19 pandemic and subsequent premature termination of the pilot study, it was not possible to ascertain the feasibility aim of effect size calculation to determine the sample size for a future RCT. Additionally, feasibility related to intervention rates of recruitment, completion, and adherence were reported, but were based on an incomplete study recruitment and premature withdrawal of study participants. Further, preliminary indication of participants’ response to the enhanced intervention were also calculated and reported where possible based on data collected from five intervention-involved participants. Therefore, statistical results need to be interpreted with caution, as self-report and clinician-rated symptom measures are based on an incomplete and very small

sample, that was subsequently insufficiently powered (Birkett & Day, 1994; Eldridge et al., 2016).

However, considering these limitations, the feasibility outcomes provide some promising preliminary indications of participant engagement and initial intervention response. The strong attendance and adherence rates in the present study provide overall support for good initial engagement of parents in the enhanced intervention. Further, initial indications of treatment response are suggestive of possible short-term benefits to participants including primary anxiety and comorbid disorder remission and/or symptom reductions following treatment with the enhanced intervention. Overall, the feasibility results provide preliminary support for the use of the adapted parent manual with anxious adults parenting an anxious child and for the continued trialling of the enhanced intervention.

Chapter 6

Integrated Discussion

Chapter 6 – Integrated Discussion

6.1 Preamble

Rather than repeating the points made in the results chapters and manuscript prepared for publication, the purpose of this integrated discussion is to discuss the major findings that have emerged from this thesis as a whole and consider their implications for supporting anxious adults who are also parenting an anxious child. To this end, the major findings will be summarised in the context of the literature review and research aims presented in Chapter 1, and interpreted from a clinical and research perspective. The strengths and limitations of the study, along with directions for future research, will also be discussed.

6.2 Overview and Summary of Main Findings

The present thesis aimed to develop and pilot the first systemically-informed CBT intervention for parents of children with co-occurring anxiety disorders. Given the considerable gap in currently available interventions, the present research set out to conceptualise and consider the most effective strategies for treating parents of children with co-occurring anxiety disorders. Specifically, anxious cognitions and behaviours experienced by the adult that are in response to, and exacerbated by, the presence of anxiety in their child are rarely targeted within treatment protocols addressing child anxiety or adult anxiety disorders. Following a thorough review of the literature in Chapter 1, the theoretical basis and framework discussed provided the rationale for the development of the enhanced intervention for parents of children with co-occurring anxiety disorders as presented in Chapter 2. The enhanced transdiagnostic parent treatment manual included new content to address identified bidirectional maintenance factors of anxiety-related parenting behaviours and cognitions. Specifically, adaptations included (1) the joint-observational graded exposure tasks; (2) modified cognitive restructuring tasks addressing anxious cognitions related to the child

and/or parenting role; and (3) psychoeducation on the bidirectional impacts of parental over-control and anxiety modelling.

The intervention protocol included in Chapter 3 outlined the practical implementation of the parent treatment manual via an open-label pilot study to explore the feasibility and acceptability of the enhanced intervention. Despite the impacts caused by COVID-19 to the pilot trialling of the enhanced intervention, several key findings emerged from the results presented in Chapters 4 and 5. Acceptability of the enhanced intervention was explored qualitatively utilising semi-structured interviews conducted with ten anxious adults parenting an anxious child. Parents' anticipated and experiential responses to the intervention were indicative of intervention acceptability, where the intervention was perceived as effective, and systemic enhancements were valued. While the intervention was considered acceptable, parents were also able to identify several treatment barriers and suggestions for improvement relevant to future iterations and trialling of the enhanced intervention. Additionally, intervention components appeared to meet parents' needs, with some indication that experiences of the enhanced intervention, particularly the joint-observational exposures, could modify parenting behaviours and cognitions hypothesised to maintain anxiety disorders in parents. Further, parents' rich descriptions of dyadic anxiety experiences contributed to better understanding the bidirectional impacts of anxiety disorders in parent–child dyads, and concurred with bidirectional theories underpinning the enhanced intervention adaptations. Together results indicated that the specific needs of anxious adults who are also parenting an anxious child can be accommodated within a transdiagnostic CBT framework that targets bidirectional factors exacerbating the anxiety disorder.

While feasibility results were significantly impacted by COVID-19 disruptions, promising preliminary results were found for short-term treatment effects and participant engagement. The intervention pilot included results from five participants, two who

completed the intervention and three prematurely withdrawn. The sample was highly comorbid, with all parents meeting diagnostic criteria for a minimum of two and maximum of four disorders. Initial indications of participant intervention response showed remission of primary anxiety disorder, and additional comorbid diagnoses was achieved for one completed participant, with the second achieving symptom reductions on their primary anxiety disorder and comorbid major depressive disorder diagnosis, but no change in symptoms of an additional anxiety diagnosis. Nonetheless, clinically significant post-treatment reductions in clinician-rated symptom severity and increased global improvement were found for both completed participants, along with post-treatment symptom improvements on measures of anxiety, depression, and quality of life. While conclusions drawn are limited by the small number of participants, initial short-term results indicate that the intervention could reduce anxiety symptoms and result in anxiety disorder remission, but could also lead to reductions in additional co-morbid depressive disorder symptoms. Additionally, measures of engagement related to recruitment rate, completion rate, and adherence to study requirements exceeded the thresholds assigned to determine success. Thus, results demonstrate good participant engagement, where parents were interested in the intervention, remained engaged once enrolled, and did not find the study-specific requirements burdensome.

Although preliminary due to the open nature of the pilot study and the impacts of the COVID-19 pandemic, results obtained through the initial feasibility and acceptability investigations are encouraging and provide a rationale for the continued investigation of the enhanced intervention. When compared to existing standard CBT interventions, results of the pilot suggest the enhanced intervention may better cater to the needs of anxious adults parenting an anxious child. Therefore, results raise several points that may have significant implications for future research and clinical practice with the target population.

6.3 Implications for Consideration in Research or Clinical Practice

Pilot trials exploring intervention feasibility and acceptability play a key role in the research process, as results can inform the refinement of new interventions and other study procedures (Craig et al., 2008; Leon et al., 2011). Therefore, this section will first consider several practical implications of the present study findings for the refinement of the enhanced intervention study procedures, and for the parent treatment manual. Following this, broader clinical and research implications are explored, including discussion of clinical practice and treatment considerations for clinicians working with the target population, and research investigating the mechanisms maintaining anxiety disorders within parent-child dyads. Finally, consideration is given to how the enhanced intervention may contribute to reductions in the intergenerational transmission of anxiety disorders amongst parents and children.

6.3.1 Refinement of Study Procedures to Increase Parent Engagement

The most consistently reported reasons for the initial disengagement of parents in the intervention pilot related to inconvenient clinic location and appointment availability. These same two factors were also identified by parents during acceptability investigations as potential barriers to engagement in the enhanced intervention. Suggestions from past research on improving parent enrolment in parenting programs included developing collaborative relationships between intervention providers and key stakeholders which interface with the target population, along with integration of programs in established routine service settings (Axford et al., 2012; Chacko et al., 2016). Therefore, while factors related to clinic proximity and appointment availability were limited by resources in the present research, a site or multiple sites with extended operating hours that are embedded within existing service settings relevant to the target population may be important to increase initial engagement and reduce barriers in future trialling. Sites embedded within existing relevant services may also

provide opportunity for development of collaborative relationships with relevant stakeholders, increasing recruitment avenues.

Results of acceptability investigations were also revealing of other relevant factors which could impede parents' ongoing engagement with the enhanced intervention. Like parent carer experiences documented in previous research (Bourke-Taylor et al., 2012; Gilson et al., 2018), parents in the present study described initial difficulty shifting attention away from their child's anxiety and toward their own anxiety experience. Therefore, the incorporation of brief psychoeducation highlighting the benefits of prioritising parent mental health in the initial session of the enhanced intervention may assist parents with this transition. Parents also described fears of failure related to being unable to complete observational exposure tasks due to anxious distress. Clinicians should keep this in mind in the lead up to joint-observational exposure sessions and could consider utilising existing intervention components such as cognitive restructuring to reduce anticipatory anxiety and improve parent engagement.

6.3.2 Refinement of the Enhanced Intervention Parent Treatment Manual Based on Parent Feedback

Parents also made some suggestions for improvement to the enhanced intervention. Feedback related to session structure could be addressed by increasing the amount of observational exposure sessions, and/or increasing the amount and length of intervention sessions. In line with parents' suggestions, the addition of two observational exposure sessions would bring the total intervention sessions to 12, well within typical CBT intervention session amounts (Kaczurkin & Foa, 2015) and back in line with the total session amount of the original Norton (2012a) group treatment manual. Additionally, extending joint-observational exposure session length from 60-to-90-minutes would allow the dyad greater flexibility to practice techniques and discuss observational exposure findings.

Further, intervention refinements can be considered in light of parents' bidirectional experiences of anxiety within the dyad. Consistent with previous literature exploring parent factors associated with child anxiety disorders, sub-themes related to rejection and accommodation emerged when exploring bidirectional impacts of anxiety disorders (Lebowitz et al., 2013; Murray et al., 2009; O'Connor et al., 2020). However, psychoeducation provided to participants in the parent treatment manual focussed predominantly on over-control and modelling of anxiety as these responses to child anxious distress were hypothesised to contribute to anxiety disorder maintenance in parents (Creswell et al., 2013; Rubin et al., 1999). Subsequently, the addition of psychoeducation related to the bidirectional impacts of parental rejection and accommodation could be beneficial for this parent population. Further, employing a flexible format or modular approach to parenting-specific psychoeducation could further tailor the intervention to the individuals receiving it. While modular approaches to intervention are considered more challenging to deliver than predetermined protocols, they can provide a better fit between the therapy and the individual's clinical presentation (Dalglish et al., 2020). Therefore, a format where clinicians can select psychoeducation modules relevant to the client's formulation could help better tailor intervention components to the client's individual needs, while also addressing parent feedback related to increased program flexibility.

While results propose several practical implications for the refinement of the enhanced intervention parent treatment manual, intervention fidelity is an important factor requiring consideration. Part of improving service delivery is striking a balance between the flexible application of an intervention to accommodate client needs, without detriment to the fidelity of the intervention (Durlak & DuPre, 2008; Pérez et al., 2015). Therefore, the enhancements made to the present parent treatment manual were instigated by a treatment need, but also remained as true as possible to the original components of the Norton (2012a)

tCBT manual. With that said, adaptations to the parent manual required the removal of two schema-based cognitive restructuring sessions to ensure the contents matched the concurrently-delivered child treatment manual. Therefore, future implementation research comparing the Norton (2012a) manual with the enhanced intervention parent treatment manual could determine the components essential for the effectiveness of the enhanced intervention. Subsequent research applying further modifications to the session structure of the parent treatment manual could then be considered with the principles of fidelity and adaptation in mind. Repeated studies of this sort can clarify the appropriate combination of fidelity and program modification necessary to achieve good outcomes (Durlak & DuPre, 2008).

6.3.3 Clinical Practice and Treatment Considerations for Clinicians Working With Anxious Adults Parenting an Anxious Child

The open-label pilot study results provide preliminary support for the clinical utility and broader application of the enhanced intervention. Two of the most prevalent barriers to the implementation and dissemination of evidence-based practice are the burden of training clinicians to proficiently administer different manual-based interventions for each anxiety disorder a client presents with, and criticism that these diagnosis-specific protocols lack external validity (Barlow et al., 2017; Kazdin, 2008; McHugh & Barlow, 2010). Given that comorbidity is the norm, rather than the exception for adults with anxiety disorders (Brown, Campbell, et al., 2001; Gorman, 1996; Kessler et al., 2005), clinicians are often faced with the prospect of treating individuals with complex presentations. To address the client's complex symptoms, clinicians are likely drawing from multiple diagnosis-specific CBT protocols or different therapeutic approaches, resulting in unempirical practice.

Consistent with the aims of transdiagnostic protocols and past comorbidity remission estimates detailed in previous tCBT trials (Norton et al., 2013), a promising finding of the

present study was that the enhanced intervention could lead to anxiety and comorbid depressive disorder remission and symptom reductions. While based on a small number of observations, preliminary results suggest that the enhanced intervention parent manual could accommodate a variety of diagnoses and supports the clinical utility of a single, parsimonious protocol. Additionally, the treatment was delivered by a provisional psychologist completing their doctoral studies, indicating the enhanced intervention can be administered successfully by a relatively inexperienced clinician. Therefore, the manualised transdiagnostic approach utilised in the delivery of the enhanced intervention appears advantageous in reducing burden related to clinician training. Further, the availability of a tCBT manual for use with parents of children with co-occurring anxiety also experiencing a range of comorbid disorders, may promote the use of evidence-based practice in clinical settings, improving access and availability of such treatments for the benefit of clinicians and consumers alike (Clark, 2009; McHugh et al., 2009; McManus et al., 2010).

The present thesis investigations have also broadened the focus of traditional CBT interventions for anxiety disorders in adults, by considering the systemic factors contributing to anxiety disorder maintenance in anxious adults who are parenting an anxious child. Thus, results also have implications for the CBT interventions offered to parents of children with co-occurring anxiety disorders. Generally, there has been a lack of consideration of systemic factors in existing adult CBT treatment, likely compounded by a dearth of appropriate research aiming to understand the factors that maintain anxiety disorder cognitive and behavioural processes in anxious adults parenting an anxious child (Dummett, 2010; Pardini, 2008). The enhanced intervention was viewed as effective, and parents' perceptions were also supported by initial indications of participant intervention response. Further, acceptability results suggested enhancements could modify identified anxiety disorder maintenance factors, and that these enhancements were valued by parents. Together, results suggest good

integration of traditional CBT components and systemic enhancements in the present enhanced intervention, without appearing to impact on the efficacy of the CBT components. Thus, the parent treatment manual presents a practical example of how clinicians can deliver common components of CBT that have been systemically-informed. However, more research is clearly required to establish efficacy of the enhanced intervention components, and to understand if the enhanced components could contribute to improved anxiety disorder treatment outcomes beyond those of existing tCBT and CBT interventions.

Finally, it should be acknowledged that while the enhanced CBT protocol offers parents of children with co-occurring anxiety disorders a systemically informed intervention, there may be difficulties implementing a concurrent intervention in clinical practice. For example, it may be difficult for services to offer the intervention to both parent and child, as resources may limit the ability to provide simultaneous intervention. Additionally, some parents may not want to participate in parent and child treatment, or may present with sub-clinical symptoms. Thus, clinicians who utilise the enhanced intervention need to consider whether the concurrent format of the intervention is able to be delivered, and if it is clinically appropriate for their client.

6.3.4 Investigations Into Mechanisms Maintaining Anxiety Disorders Within Parent-Child Dyads

Results from the acceptability investigations have helped to bridge current gaps in bidirectional research, which also has flow-on implications for the interventions offered to anxious adults parenting an anxious child. Given the dearth of research exploring the influence of child factors on parent anxiety disorders, the present qualitative investigations attempted to better understand the factors contributing to dyadic anxiety disorder maintenance from the parent's perspective. Results were in line with existing bidirectional theories, however expanded upon existing findings. In past research, critical parenting has

been more consistently linked to depression in children, rather than child anxiety (McLeod, Weisz, et al., 2007; Vulić-Prtorić, 2006) but in the present investigation was identified by parents as a factor contributing to anxiety disorder maintenance in their children.

Additionally, research hypothesising factors maintaining anxiety disorders in parents have focussed on parenting behavioural responses of anxiety modelling and over-control (Creswell et al., 2013; Rubin et al., 1999), however parents also highlighted accommodation as a perpetuating factor.

Understanding more about the bidirectional experiences of parents with anxiety disorders has provided valuable insights which can inform how CBT content and delivery may be optimised to enhance treatment outcomes. Thus, results of this thesis have offered new areas of investigation, but also highlight the importance of understanding bidirectional dyadic maintenance factors to improve upon the interventions offered to anxious adults parenting an anxious child, but also to anxious children with anxious parents. Therefore, future research is needed to replicate and extend upon the present findings, as well as elucidate the contribution of these bidirectional factors on the development and maintenance of anxiety disorders within parent-child dyads.

6.3.5 Reducing the Intergenerational Transmission of Anxiety Disorders

Results also contribute to broader theoretical and clinical implications related to the intergenerational transmission of anxiety disorders within parent-child dyads. Despite the mounting evidence in support of bidirectional development and maintenance of anxiety disorders within parent-child dyads, existing parent and child interventions for anxiety disorders are still largely offered in silos, leading to neither being in a position to offer intergenerational support (Cartwright-Hatton et al., 2018). In developmental research so far, parents of children with co-occurring anxiety have been relegated primarily to roles as facilitators and co-facilitators supporting child anxiety disorder recovery (Forehand et al.,

2013; Rapee et al., 2009; Wei & Kendall, 2014), with only three studies identified providing CBT-based anxiety disorder treatment to parents alongside child CBT (Cobham et al., 1998; Creswell et al., 2020; Hudson et al., 2014). Given transmission of anxiety disorders amongst parents and children is primarily environmentally based (Eley et al., 2015), providing adequate intervention to dyad members which target individual as well as dyadic factors maintaining anxiety disorders may confer intergenerational benefits to dyad members.

Preliminary results of the present thesis support this inference, where parents viewed the intervention as effective for both dyad members, and intervention-involved parents reported actual reductions in anxiety symptoms for themselves and their child post-intervention. Further, parents valued the concurrent intervention and reported the format increased communication and teamwork within the dyad, and that parents had applied their learnings to interactions with their other children, and/or shared newly-acquired knowledge with their partners. Thus, the concurrent design of the enhanced CBT intervention which provided parents with a systemically-informed treatment alongside child treatment via a parallel child manual, arguably has the potential to integrate parent and child intervention offerings and reduce intergenerational transmission. While results hold promising implications for reductions in intergenerational transmission of anxiety disorders in parent-child dyads, additional research is required to experimentally determine these effects. The developmental cascade hypothesis posits that adaptive and maladaptive outcomes develop over time within the context of multiple cumulative transactions occurring within the developmental system (Masten & Cicchetti, 2010). Therefore, future research should consider longitudinal designs, and use mediational and/or structural equation models, to examine mechanisms of change in individuals, but also across generations.

6.4 Original Contributions to Knowledge and Understanding in the Field

This thesis has helped to address several gaps in the literature as stipulated in Chapter 1. As far as the author is aware, prior to this thesis, there was no relevant systemically-informed CBT intervention available for the treatment of anxiety disorders in anxious adults parenting an anxious child. The focus of traditional CBT interventions for anxiety disorders was broadened by a thorough review of literature to determine the systemic factors contributing to anxiety disorder maintenance in parents of children with co-occurring anxiety disorders. These identified systemic factors were then integrated into an existing evidence-based tCBT intervention for anxiety disorders via enhancements to traditional intervention components. Thus, the empirically-based and systemically-informed enhanced intervention offers a novel contribution to the scholarly field, as well as to clinical practice.

Secondly, the pilot study investigations have contributed to establishing the initial feasibility and acceptability outcomes of the enhanced intervention in parents of children with co-occurring anxiety disorders. Clearly linked to the initial development of a complex intervention, the exploration of intervention acceptability and feasibility are important for intervention refinement and to inform future research strategies (Moore et al., 2015; O'Cathain et al., 2019). Additionally, the essential inclusion of the client voice in the present thesis has contributed to a growing body of research utilising qualitative methods during the early evaluation of newly-developed interventions (O'Cathain et al., 2019; O'Cathain et al., 2015). Further, obtaining parent perspectives of bidirectional impacts of anxiety disorders within parent-child dyads has contributed the parent voice to an area of developmental research typically dominated by unidirectional investigations of the impacts of parent factors on child anxiety disorder outcomes. The parent voice highlights the importance of considering broader systemic factors in the treatment of anxiety disorders in adults, while also challenging existing developmental research to consider investigations of reciprocal

dyadic factors implicated in the transmission of anxiety disorders, rather than focussing on parental influences alone.

6.5 Research Strengths

In addition to the major contributions to knowledge and the field discussed above, there are several strengths of the present thesis. First, the publication of the parent treatment manual and study protocol via freely accessible channels offered several research strengths. Publication of the study protocol via open-access allows for the creation of an early scientific record of the enhanced intervention and the systemically-adapted treatment components such as the novel joint-observational exposures, along with demonstration that the study methodology had been carefully developed and undergone a peer review process (Chan & Hróbjartsson, 2018; Thabane & Lancaster, 2019). Additionally, publication of the parent treatment manual via a publicly accessible repository allows clinicians and researchers access to the enhanced intervention materials. Together, this increases research transparency and rigour through possible research replication and collaboration (Hoddinott, 2015), with the ultimate goal of contributing to improving the mental health outcomes of anxious adults parenting an anxious child.

The choice to utilise the Norton (2012a) tCBT manual, which was adapted for the present research and utilised in the open trial, also provided several benefits. A number of RCTs and open trials have supported the efficacy of the tCBT manual for principal anxiety disorders (Norton, 2008, 2012b; Norton & Barrera, 2012; Norton & Hope, 2005; Roberge et al., 2020), as well as the treatment of comorbid anxiety and depressive disorders (Norton et al., 2013; Norton et al., 2004; Talkovsky et al., 2017). Additionally, when compared to diagnosis-specific manuals for anxiety disorders, the tCBT manual has achieved superior outcomes for comorbid diagnoses (Norton et al., 2013), and can be effectively used with diagnostically heterogeneous individuals (Chamberlain & Norton, 2013). The ability of the

tCBT manual to effectively treat principal anxiety disorders, as well as comorbid disorders, provided the required flexibility to offer timely intervention to parents and their children regardless of their specific primary anxiety disorder diagnosis.

Additionally, a considerable strength of the open trial was the representativeness of the sample. Given the significant comorbidity that exists amongst individuals with anxiety disorders (Brown, Campbell, et al., 2001), comorbidities were not controlled for in the open trial which allowed for the recruitment and treatment of highly comorbid participants. At baseline all participants met criteria for a primary anxiety disorder, along with one-to-three additional comorbid anxiety and/or depressive disorders (M diagnoses = 2.80, SD = 0.84). Thus, the sample was representative of the high comorbidity rates and complexity encountered in ‘real-world’ clinical settings, and suggests generalisability of results.

Another strength of the present research is that the enhanced intervention parent treatment manual can be used successfully by relatively inexperienced clinicians. As the enhanced intervention was delivered by a doctoral-level psychology student at a university training clinic, results suggest the manual can be easily and effectively utilised in routine clinical practice, even by clinicians with less training and clinical experience. Further, other adaptations of the original tCBT manual have been utilised successfully in several previous trials by clinicians with similar levels of training (Harris & Norton, 2019; Marker et al., 2020; Pearl & Norton, 2020). Moreover, as the parent treatment manual was delivered at a university training clinic, another strength of the research was that it contributed to equitable access to mental healthcare. Participants involved in the study were provided the enhanced intervention at a significantly lower cost, and at times even at no cost. Ethically, this provided benefit to the broader community, where anxious parents of anxious children experiencing severe primary anxiety disorders were able to access high-quality, low-cost intervention.

There were also notable strengths associated with the qualitative acceptability investigations. The purposive sampling approach utilised in this study allowed for the inclusion of views from a range of stakeholders. Perspectives encompassed parents who had completed, commenced, or expressed interest in the enhanced intervention. In considering the views of a range of stakeholders, rich insights could be gained related to how the target population perceives and experiences CBT interventions at different stages of engagement. In particular, participants across the three groups were able to display a similar level of insight into bidirectional factors maintaining anxiety disorders within the dyad. However, intervention-completed and -withdrawn parents were able to demonstrate that involvement in the enhanced intervention contributed to additional insight, awareness, and knowledge. Subsequently, these parents were better equipped to implement learned strategies to reduce their own and their child's anxiety, and to respond to their child in an alternative way. Thus, the additional richness and depth in knowledge obtained demonstrates the importance of including a range of stakeholders during the early stages of intervention development and trialling.

Further, engagement with consumers of a healthcare intervention is recommended to promote efficient translation and implementation of research outcomes into clinical practice (Nilsen et al., 2006; Oakman et al., 2021). Input from consumers can also lead to increased uptake of health services, improving health and quality of life (Crawford et al., 2002), as well as more clinically relevant research (Boote et al., 2002). Thus, at a broader level, study findings demonstrate the essential contribution of the client voice during intervention development and trialling, highlighting the importance of incorporating qualitative methods for the continued development, refinement, and implementation of healthcare interventions.

6.6 Research Limitations

It is important that the findings of the thesis are considered within the context of the research limitations. The present research investigated feasibility and acceptability of the enhanced intervention in parents of children with co-occurring anxiety disorders as part of a broader open-label pilot study. As such, the analyses conducted were descriptive and exploratory to inform future directions and research involving the enhanced intervention. Accordingly, the methodologies utilised within the specific feasibility and acceptability investigations were subject to several limitations. The following section will discuss the limitations of the sample size and gender representation that apply broadly across the present thesis, before discussing specific limitations inherent to the feasibility and acceptability investigations, respectively.

6.6.1 Limitations Related to the Pilot Study Sample Size

The planned sample sizes for both the feasibility and acceptability investigations were small but were based on appropriate estimations. The planned sample of ten participants for the feasibility pilot was deemed sufficient to determine a sample size estimate prior to conducting a powered RCT (Birkett & Day, 1994). Additionally, the present qualitative sample was consistent with sample sizes utilised in past qualitative pilot research, which typically included between five and twenty participants (O’Cathain et al., 2015). The sample size was also supported by previous healthcare investigations demonstrating data saturation between seven and twelve interviews, with many of the relevant themes present during interviews one to six (Guest et al., 2006; Hennink et al., 2017). However, the premature pilot study closure caused by the COVID-19 pandemic significantly impacted upon the planned sample size required for the evaluation of feasibility outcomes, and the intended sample configuration of the qualitative interviews. As the effects of the premature study closure have

been discussed in detail throughout the thesis, a brief discussion of the sample limitations will be provided here, beginning with the impacts to feasibility, followed by acceptability.

Instead of the planned sample of ten completed participants, the premature study closure resulted in two intervention-completed participants, and three intervention-withdrawn participants. Thus, given the limited observations and lack of pre- and post-treatment time point primary outcome data, the planned partial eta-squared effect size calculations for estimating the sample size for a future RCT could not be conducted. Nor could the planned statistical analysis of repeated-measures ANOVAs to determine initial indications of intervention response. Instead, relevant descriptive statistics representing initial indications of intervention response were presented and discussed. With only two parents completing the intervention, it is important to acknowledge that these findings should be interpreted tentatively. Additionally, engagement outcomes related to recruitment rate, completion rate and adherence to study requirements were reported, but were based on an incomplete study recruitment pool and premature withdrawal of study participants. Further, discussion of some results, such as the parenting behaviour measures, could not occur due to missing data. Therefore, the premature study closure and the subsequently reduced sample size placed significant limitations on the ability to conduct planned statistical analyses and address the original feasibility aims of the thesis. However, the results do provide insights into the engagement and initial intervention response of parents involved in the piloting of the enhanced intervention. Additional future research utilising a larger sample size is required to extend upon the present findings and determine whether these initial conclusions are supported.

The sample limitations also extended to the acceptability outcomes. Like the calculations of participant intervention response, reported quantitative acceptability measures of treatment helpfulness and satisfaction collected at post-treatment were limited as they were

based on only two completed participants. Further, the premature study closure also impacted upon the intended participant sample for the qualitative interviews. Rather than five parents who had completed the enhanced intervention pilot, there were instead two intervention-completed parents, and three intervention-withdrawn parents. Therefore, if the intervention-withdrawn parents had completed the pilot, it is possible their experiences and perceptions of the enhanced intervention may have been different to those collected in the present research. Additionally, as only two parents completed the intervention and three parents were withdrawn following Session 4, study findings concerning participants' perceptions of intervention effectiveness should be interpreted with caution. Nonetheless, despite the limitations to the intended sample presented by COVID-19, the acceptability results were able to capture valuable views and insights from a diverse group of parents who had completed, commenced, or expressed interest in the enhanced intervention.

6.6.2 Participant Gender Limitations in the Present Thesis and Research More Broadly

Another limitation that applied more generally across the present research related to the gender of participants. All study participants identified as female, impacting upon the generalisability of results to the broader population of anxious adults parenting an anxious child. Additionally, as parents were the biological mothers of children involved, the transferability of qualitative outcomes to other samples of similar contexts, such as fathers or other primary caregivers, was also limited (Schreier, 2017). The study was open to parents and primary caregivers of all genders, yet only one father expressed interest in participating in the intervention. However, the predominance of mothers in this study this was somewhat expected as anxiety disorders are more common amongst females than males (Essau et al., 2018; Kessler et al., 2012), intergenerational associations of anxiety disorders occur more commonly in mothers and their children than in fathers and their children (Cooper et al.,

2006), and mothers are frequently the primary caregiver of children in the region the trial was conducted (Wilkins et al., 2020).

The lack of gender representation in the present thesis was also reflective of the broader limitations in the developmental literature. Fathers have been mostly neglected in investigations of the development, maintenance, and treatment of child anxiety disorders, and are less likely to be involved in parenting intervention research (Bögels & Phares, 2008). Further, while results are inconclusive, research investigating the relationships between parenting behaviours and child anxiety disorders suggest maternal and paternal behaviours may differ in how they are associated with child anxiety (Bögels & Phares, 2008; Lawrence, Waite, et al., 2019; Teetsel et al., 2014). Subsequently, more research exploring the bidirectional contributions of anxiety disorders specifically in father-child dyads is required. Additionally, as much of the present intervention enhancements were informed by bidirectional research based mostly on the reciprocal interactions of mothers and their children, future research with a greater emphasis on father involvement will be important to establish whether the enhanced intervention is efficacious for parents of both genders.

6.6.3 Methodological Limitations of the Feasibility Investigations

Several limitations specific to the methodology employed to investigate the feasibility of the enhanced intervention also require acknowledgement. Due to the uncontrolled nature of the open trial, initial indications of participant intervention response cannot be directly causally attributed to the enhanced intervention parent treatment manual. Similarly, the suggestions of good participant engagement may have been inflated by the open nature of the pilot trial, where eligible participants were guaranteed to receive the newly developed enhanced intervention. Additionally, the diagnostic assessor conducting post-treatment assessments was aware that participants had engaged in therapy. Thus, assessor bias may have influenced the post-treatment diagnostic and symptom ratings provided. Consequently,

future trialling of the enhanced intervention should consider a trial design which allows for the concealment of treatment allocation to reduce the risk of bias in both participants and diagnostic assessors.

Additionally, pre-treatment assessments did not include the recording of participants' previous experience of CBT or other psychotherapy, nor the use of psychotropic medications. As these factors may influence a participant's readiness for treatment and/or opinions of CBT, exploration of the impact of these factors on outcomes is highly recommended for future trialling of the enhanced CBT intervention.

6.6.4 Methodological Limitations of the Acceptability Investigations

Other research limitations related to the investigation of intervention acceptability. Qualitative research is not intended to produce generalisable findings, thus the results that emerged from this group of anxious adults parenting an anxious child cannot be generalised to the broader population (Denny & Weckesser, 2019). Instead, the qualitative findings present an in-depth analysis which may contribute to the development of future theories or research tools that build toward a body of research with greater potential for generalisability. Similarly, qualitative research is not designed to test hypotheses but rather to generate them (Morgan, 2015). Therefore, participant perceptions which suggest effectiveness of the enhanced intervention and its potential to modify hypothesised factors maintaining anxiety in parents, require further experimental evaluation.

An increased risk of bias is also acknowledged due to the dual role of the thesis author as the clinician who delivered treatment to the participants enrolled in the pilot intervention, and as the interviewer collecting acceptability data. Given the dual role, participants involved in the enhanced intervention pilot may have provided socially desirable responses during the semi-structured interviews. However, as the dual relationship was not a factor for half of the sample (i.e., intervention-interested participants), and feedback across participant groups was

consistently positive, it is unlikely social desirability had a major influence on the results. Further, the dual role could also have contributed to a potential for researcher bias during data analysis. Thus, to mitigate this risk and increase rigour, the thesis author maintained a reflective journal, engaged in regular supervision, and reviewed codes with thesis supervisors and the manuscript co-authors.

6.7 Directions for Future Research

In line with the MRC guidelines for the development of complex intervention, the present research focussed on the development and initial pilot trialling stages of intervention development (Craig et al., 2008). Pilot trials play an important role in the development process as they allow for investigations of intervention feasibility and acceptability, which can inform the refinement of new interventions and other study procedures (Craig et al., 2008; Leon et al., 2011). Frequently, the results from pilot trials are then used to support subsequent larger-scale trials. Therefore, the present research has produced preliminary data required to inform the next stages of the enhanced intervention trialling. Broadly, results suggest the enhanced intervention is feasible to deliver based on preliminary participant engagement and initial indications of intervention response, and acceptable to participants as the intervention is valued and appears to meet the needs of anxious adults parenting an anxious child. These promising outcomes, in combination with guidance from the MRC, provide a rationale for continued evaluation of the enhanced CBT intervention via larger clinical trials.

Given the present study results, and the gap in available systemically-informed interventions for anxious adults parenting an anxious child, the next step in intervention evaluation would be to compare the enhanced intervention to the current best available intervention of CBT. As the population of interest involves vulnerable families, there is an ethical responsibility not to overburden them with an exceedingly complex research design

prior to determining if the enhanced intervention is effective at reducing anxiety disorder symptomatology. Therefore, a RCT employing two treatment arms, the first arm including the enhanced intervention for anxious parent-child dyads, and the second arm including standard CBT individually delivered to anxious parent-child dyads, would allow for direct comparison of outcomes and for broader conclusions to be drawn. Specifically, the design would allow for the examination of intervention efficacy by determining if the enhanced intervention had superior benefits of primary anxiety disorder remission in anxious adults parenting an anxious child when compared to standard adult CBT. Of course, there are caveats to utilising a best available therapy comparison. Single-blinding of the diagnostic assessor is possible, however the gold standard of double-blinding both assessors and intervention participants is not, and has the potential to confound results. Thus, consideration of a larger trial including a placebo-control, whereby the parent and child treatment experience is similar in all aspects except for the active ingredients, could ensure results were not biased by participant or clinician treatment expectations (Boot et al., 2013).

Additionally, while the present feasibility investigations were related to short-term indications of intervention response, follow-up assessment of participant anxiety disorder symptoms should be included in the future RCT. Follow-up timepoints at 6- and 12-months post-treatment would allow for the determination of longer-term benefits of the enhanced intervention. Further, given adaptive and maladaptive cascade effects occur over time within the developmental system (Masten & Cicchetti, 2010), longer-term follow-up may also help to answer whether the enhanced intervention could modify anxiety-maintaining parenting cognitions and behaviours of over-control and anxiety modelling, as well as whether these factors could contribute to relapse prevention within the dyad. Thus, an RCT including multiple follow-up timepoints could allow for more complex mediational analysis or structural equation modelling at longitudinal timepoints to examine the mechanisms of

change in individuals, as well as across generations. Further, as wider intervention implementation often hinges upon the perceived financial viability of a new treatment, longitudinal investigations can also help to establish the cost-effectiveness of the enhanced intervention (Emmelkamp et al., 2014; Nelson et al., 2006).

Likewise, researchers involved in future trialling should also consider the application of the previously discussed practical implications related to refinement of study procedures (Chapter 6.3.1) and the parent treatment manual (Chapter 6.3.2). It is also important to note that the language utilised in the parent treatment manual was both gendered, and of a high literacy and reading level. While the parent treatment manual adaptations were kept as consistent as possible with the original Norton (2014) tCBT manual, future research should consider using more accessible, gender-neutral language to ensure participants do not feel marginalised or excluded from engaging with the intervention. These suggested changes to the intervention can be applied and tested in subsequent trials, however multiple trials can be costly, time consuming, and burdensome to participants (Millen & Yap, 2020). Subsequently, researchers are increasingly utilising adaptive trial designs as they allow for greater flexibility, efficiency and are often more ethical (Pallmann et al., 2018). An adaptive trial design is a clinical trial which allows for pre-planned modifications to one or more aspects of the design, based on interim data collected from trial participants (Food and Drug Administration [FDA], 2019). For example, a multi-arm multi-stage design exploring multiple different treatment options and factors such as different intervention dose and duration, could be simultaneously compared to a control, with options to reallocate participants into more effective treatment arms based on interim analysis (Millen & Yap, 2020).

When applying an adaptive design such as multi-arm multi-stage, participants could be randomly allocated into a trial comparing CBT intervention and control conditions to the

enhanced intervention. The enhanced intervention condition could then have predetermined levels, where parents identified as non-responsive during treatment could move into a higher level of the intervention containing subsequent enhancements such as additional psychoeducation based on formulation and/or more joint-observational exposure sessions. This type of trial could determine if the enhanced intervention leads to greater anxiety disorder remission and change in parenting behaviours and cognitions, but also determine whether additional enhancements based on participant feedback could lead to further anxiety symptom improvement. Further, a similar design has been used previously to explore the efficacy of an anxiety intervention in youth, with additional variables such as clinician training at each level of intervention and cost-effectiveness also examined (Rapee et al., 2017). While it's clear a complex research design such as this requires more planning and consideration, the use of adaptive approaches could be both relevant and beneficial in addressing multiple research questions during future investigations of the enhanced intervention.

Lastly, it is important that more studies investigating anxiety disorders in anxious adults parenting an anxious child are a continued priority of future research more broadly. Emphasis should be placed on experimental research investigating the bidirectional factors contributing to the development and maintenance of anxiety disorders in parent-child dyads. This type of research would help to identify the mechanisms which contribute to sustaining or breaking reciprocal parent-to-child and child-to-parent chains of transmission (Pettit & Arsiwalla, 2008). Further, as it is possible there are gendered dyad-specific bidirectional patterns, efforts to include data obtained from fathers is imperative as this is an area of developmental research in which limited progress has been made (Bögels & Phares, 2008; Pettit & Arsiwalla, 2008). Better understanding of the key bidirectional parent-child factors and mechanisms which maintain anxiety disorders in parents can contribute to greater

refining of the enhanced intervention but could also be utilised in future translational research with this population. Interventions that are attuned to the underlying processes of bidirectionality within the dyad may prove to have great success not only for anxious adults parenting an anxious child, but also in altering trajectories of intergenerational anxiety disorder transmission.

6.8 Concluding Remarks

This present thesis documented the initial development, feasibility, and acceptability of the first systemically-informed enhanced CBT intervention for parents of children with co-occurring anxiety disorders. The enhanced intervention parent treatment manual was empirically based, and translation of knowledge to practice was attempted via the open-label pilot study. Significant disruptions caused by the COVID-19 pandemic leading to the premature termination of the enhanced intervention pilot meant quantitative investigations of intervention feasibility and acceptability were less conclusive. Nevertheless, feasibility results provided encouraging initial indications of participant engagement and short-term intervention response. Furthermore, qualitative investigations exploring parents' perceptions of the enhanced intervention provided evidence of participant acceptability. Parents' rich descriptions and experiences indicated the enhanced intervention was valued, and was associated with improvements in anxious cognitions and parenting behaviours. Findings contributed to a mounting literature base understanding bidirectional factors maintaining anxiety disorders in parent-child dyads. Taken together, the enhanced intervention results demonstrate good integration of transdiagnostic adult anxiety disorder treatment approaches with the systemic enhancements. Thus, the enhanced intervention appears to provide an alternative approach to standard CBT interventions, and may better meet the specific needs of adults with anxiety disorders who are parenting an anxious child.

Though preliminary findings are promising, further research is warranted to experimentally establish the treatment efficacy of the enhanced intervention, along with economic evaluations of cost-effectiveness. Longer-term investigations may also shed light on whether the enhanced intervention can intervene with the complex intergenerational pathways that perpetuate anxiety disorders within families. Additionally, suggestions for continued research into how bidirectional factors contribute to the exacerbation and maintenance of anxiety disorders in parents have been made to improve the enhanced intervention, but also future translational work in this area. While the present thesis represents the beginnings of investigations into the enhanced CBT intervention, preliminary results hold promise for improving a significant mental health problem in anxious adults who are parenting an anxious child.

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Appendix

A. Supplementary Materials to Paper 2: Interview Schedule

Interview Schedule 1 <i>For parent participants who have not been involved in the enhanced intervention pilot.</i>
Questions
<p><i>General Probes for use during the interview</i></p> <p>“You mentioned _____ can you tell me more about that?”</p> <p>“You mentioned _____ can you give me an example?”</p> <p>“Are you able to expand on what you mean by _____?”</p> <p>“Why/how/in what way?”</p>
<p><i>Preamble: “I’ll be asking about what participating in a treatment program like this might be like for you. I’ll ask some questions to start with that ask broad questions about the program, before moving to more specific parts of our newly designed treatment.</i></p> <p><i>For many years, researchers have tried to understand how anxiety disorders develop, so that we can reduce the risk and impact of these problems in people’s lives. One of the areas researchers have looked at is the relationship between parents and their children. In the past, this research has focussed on how parents might influence children’s anxiety in helpful or not-so-helpful ways. More recently, this view has shifted to include ways in which a child might influence anxiety in their parent. To start, I’d like to ask about the ways anxiety impacts both you and your child.”</i></p> <p>Q1. How does (child’s name) anxiety contribute to your anxiety?</p> <p>Prompts: What thoughts or worries do you have when your child is anxious or distressed? How do you feel when your child is anxious? What do you do when your child is anxious or distressed?</p> <p><i>Preamble: Parenting has its challenges. It can be particularly challenging when both a parent and their child are experiencing anxiety. Parents do their best to manage their own symptoms, while also trying to help their child deal with their own anxiety.</i></p> <p>Q2. Are there ways your anxiety could contribute to (child’s name) anxiety?</p> <p>Prompts: In what ways is your experience of anxiety similar to your child’s anxiety? Are there any things that you do or say that could increase feelings of anxiety in your child? (If yes, please list). Do you think your child knows when you are feeling anxious? How would they know? What would they see in you that gives it away?</p> <p><i>Preamble: “Now we’ll take a closer look at a specific part of our program called “Facing Fears Together”.</i></p> <p><i>During this phase of the program, parents and children would gradually begin facing the things they fear in session. They would not have to face their toughest fears right away. Instead, they would start with some easier things, and by building on successes, they</i></p>

gradually move up to face tougher fears. Here are some examples of “Facing Fears Together” tasks:

- 1. For a person who feels anxious about giving a presentation at work, their first task might be preparing the presentation and practicing it in session, the second might be practicing the presentation alone in the work boardroom, the third practicing at work with one-two colleagues, and so on until building up to delivering the presentation to a full boardroom.*

As you know, you would not be participating in this treatment alone. Your child would also be gradually facing their fears as part of the treatment. A unique feature of our program is that you and your child would participate as a silent observer of each other’s “Facing Fears” tasks. We have developed this feature based on decades of research suggesting that this could be beneficial as part of a treatment for parents and children with anxiety. Therefore, during the first three exposures, you and your child would participate as a silent observer of each other’s “Facing Fears” tasks. That means you would watch your child face some of their fears in session...

Q3. What would that be like for you to watch (child’s name) face one of their fears?

Prompts: How would you feel if your child was anxious or distressed before or during the task? What might you do, or want to do?

Preamble: “Just as you would be asked to observe your child complete “Facing Fears” tasks, the treatment is designed to have your child watch you face some of your fears in session too.”

Q4. What would it be like for you to have (child’s name) watch you face one of your fears in session?

Prompts: What are some of the ways you expect this might be difficult for you? What thoughts might you have while observing? Would having your child observe effect how you would behave?

Preamble: “Finally, we’ll wrap up this part of the interview by having a look again at the treatment, this time with all of the specific aspects of the treatment included:

The treatment itself is a cognitive behavioural therapy program that has been modified to cater to the needs of both a parent and their child who are experiencing anxiety.

You and your child’s involvement in this treatment would include:

- 10 individual but concurrent 60min parent and child treatment sessions.*
- Parents learn skills to manage their anxiety in treatment, and then complete treatment related homework tasks to consolidate skills in between sessions.*
- The treatment includes 2 newly developed components:*
 - Education on how anxiety develops and is maintained in a parent and child relationship. This includes ways that a parent’s anxiety impacts on their child, and how their child’s anxiety impacts on them.*
 - “Facing Fears Together”: where you would gradually begin facing the things that you fear in session. During three of these sessions, you would act as a silent observer of your child’s “Facing Fears” activity, while your child would also act as a silent observer of your own activity”*

Q5. Knowing all that you know about the treatment program, would you still sign yourself and (child's name) up for the program?

Prompts: Why would you sign up? Why would you not sign up? What would make it more likely for you to do a treatment program like this? What would turn you away? What about the specifics of the program, what are your thoughts on: The 10-session length of the program? The involvement of both parents and children in treatment?

Interview Schedule 2

*For parent participants who **commenced or completed** the enhanced intervention pilot.*

Questions

General Probes for use during the interview

“You mentioned _____ can you tell me more about that?”

“You mentioned _____ can you give me an example?”

“Are you able to expand on what you mean by _____?”

“Why/how/in what way?”

Preamble: “I’ll be asking for your feedback on what participating in the program was like for you. We will start more broadly before moving to more specific parts of the treatment.

For many years, researchers have tried to understand how anxiety disorders develop, so that we can reduce the risk and impact of these problems in people’s lives. One of the areas researchers have looked at is the relationship between parents and their children. In the past, this research has focussed on how parents might influence children’s anxiety in helpful or not-so-helpful ways. More recently, this view has shifted to include ways in which a child might influence anxiety in their parent. To start, I’d like to ask about the ways anxiety impacts both you and your child.”

Q1. How does (child's name) anxiety contribute to your anxiety?

Prompts: What thoughts or worries might you have when your child is anxious or distressed? How do you feel when your child is anxious? What do you do when your child is anxious or distressed?

Preamble: Parenting has its challenges. It can be particularly challenging when both a parent and their child are experiencing anxiety. Parents do their best to manage their own symptoms, while also trying to help their child deal with their own anxiety.

Q2. Are there ways your anxiety could contribute to (child's name) anxiety?

Prompts: In what ways is your experience of anxiety similar to your child’s anxiety? Are there any things that you do or say that could increase feelings of anxiety in your child? (If yes, please list). Do you think your child knows when you are experiencing anxiety? How would they know? What would they see in you that gives it away?

Preamble: “Now we’ll take a closer look at a specific part of the program called ‘Facing Fears Together’.

As you know, this is a type of evidence-based treatment called Exposure Therapy, where you gradually began facing the things that you fear in session. A unique feature of our program was that both you and child participated as a silent observer of each other’s exposure tasks. We developed this feature based on decades of research suggesting that this could be beneficial as part of a treatment for parents and children with anxiety.

In the first (three) exposure session/s you watched your child face some of their fears in session. To help jog your memory, the joint exposure task(s) your child completed was (were):

- 1. Provide a summary of the exposure task/s that the child completed.”*

Q3. What was it like to watch (child’s name) face their fear(s)?

Prompts: When your child was anxious or distressed before or during the task... How did you feel? What were your thoughts/worries? What did you want to do?

Preamble: “Just as you observed your child complete exposure tasks, your child watched you face some of your fears in session too. The joint exposure task(s) you completed was (were):

- 1. Provide a summary of the exposure task/s that the parent completed.”*

Q4. What was it like for you having (child’s name) watch you face your fear(s) in session?

Prompts: What were some of the ways this was difficult for you? What thoughts did you have at the time? Did having your child observe influence how you behaved?

Preamble: “Finally, we’ll wrap up this part of the interview by having a look at the treatment as a whole - with all of the aspects of treatment in mind:

The treatment is a cognitive behavioural therapy program that has been modified to cater to the needs of both a parent and their child who are experiencing anxiety.

You and your child’s involvement in this treatment (would have) included:

- *10 individual but concurrent 60min parent and child treatment sessions.*
- *You learned skills to manage your anxiety in treatment, and then completed treatment related homework tasks to consolidate skills in between sessions.*
- *The treatment included two newly developed components:*
 - *Education on how anxiety is developed and maintained in a parent and child relationship. This included discussions about ways your anxiety can impact (child’s name), and how child’s (name) anxiety can impact you.*
 - *“Facing Fears Together”: where you gradually began facing the things that you feared in session. During the first (three of these) session(s), you and your child acted as a silent observer of each other’s exposure activity.*

Having participated in the program, and knowing all that you know about the treatment...”

Q5. Would you still have signed yourself and (child’s name) up for the program? Why?

Prompts: What did you like about the program? What did you dislike about the program? What would make it more likely for you to do a treatment program like this in future? What would turn you away? What about the specifics of the program, what are your thoughts on: The 10-session length of the program? The involvement of both parents and children in treatment? Were there components that we didn’t spend enough time on? Or spent too much time on?